[Part II  Spatial Plans]

Chapter 4  Master Spatial Coordination Plans

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Chapter 4
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Chapter 4
Master Spatial Coordination Plans

The "Master Spatial Coordination Plans" serve to elaborate and implement the "Strategy for Optimization of Spatial Structure", and provide guidance for the governments of Guangdong, Hong Kong and Macao in planning for actions on co-ordinated development. It includes the development of global city functions via the "Plans for Bay Area Development"; promotion of city conglomerations via the "Plans for Development of Metropolitan Areas"; establishment of a city-region framework via the "Plans for Axis Development"; expansion of the city-region's hinterland via the "Plans for Tier Development"; promotion of the integration of cities/towns/centres via the "Sub-regional Development Plans" and encouragement of specialized growth of individual cities/towns/centres via the "Poly-centric Development Plans".

4.1 Plans for Bay Area Development

The Plans for Bay Area Development aim to develop the Bay Area to serve the functions of an "Innovation Bay for early and pilot implementation", a "high-end industrial Co-operation Bay", a "Hub Bay" which is internally and externally accessible, an "Ecological Bay" with blue sky and clear water, a "Scenic Bay" with proper development intensity and a "Vibrant Bay" that is the pioneer of this era.

4.1.1 "Innovation Bay for early and pilot implementation"

—— A regional innovation system with Guangzhou-Shenzhen-Hong Kong as the main axis: based on the resources of Guangzhou, Shenzhen and Hong Kong in technology innovations and with the opportunity provided by such macro-policies as the "Shenzhen/Hong Kong Innovation Circle" and the "Construction of National Innovative Cities", this regional innovation system would serve to implement China's key projects in developing technology infrastructure, research institutions and innovation items. It should also serve as a base for cultural innovation, and research and development of technology.

—— An open system to accommodate innovations: the "Shenzhen/Hong Kong Innovation Circle" could serve as a model for the implementation of the "joint innovation zone" proposed in "the Outline" and the "early and pilot implementation" projects under CEPA. The experiences of Shenzhen/Hong Kong in innovation cooperation should be promoted as a basis for exploring the ways to integrate and enhance the resources for innovation among the wider areas of Guangzhou/Shenzhen/Hong Kong and Hong Kong/Zhuhai/Macao. Guangdong, Hong Kong and Macao should be encouraged to cooperate in technology innovations in the Bay Area, including the undertaking of joint projects, creation of platforms for innovation and cooperation in training, research and development, with a view to building an open innovation system in the Bay Area.
—— **Innovative approaches of land development and management:** with the opportunity provided by the projects such as the development of Lok Ma Chau Loop Area and the Zhuhai/Macao/Hengqin and Zhuhai/Macao Cross-boundary Cooperation Districts, innovative approaches of land development and management should be promoted in the Bay Area. The feasibility of developing new and high-end technology parks using Hong Kong/Macao’s well developed approaches of land development and management and running business should be studied. Industrial restructuring should be promoted through the development of five national new and high-end industrial districts (in Guangzhou, Shenzhen, Zhongshan, Zhuhai and Foshan) and over 10 provincial new and high-end industrial districts to facilitate industrial upgrading with focus on innovation.

—— **Adoption of common standards:** actions should be taken to establish common standards of technology infrastructure development, professional recognition, common database and platforms for sharing technology facilities and resources, as well as an effective system of the protection of intellectual property rights within the Bay Area, so as to facilitate free flow of resources for innovation.

4.1.2 "Cooperation Bay" for High-end Industries

—— **Optimization of industrial structure:** actions should be taken to speed up the construction of a regional centre of modern service industries and an advanced manufacturing base in Guangzhou, and to create centres of modern service industries and central commercial areas in Guangzhou, Shenzhen and Hong Kong. Development of high-end electronic and information industries at the east bank of Pearl River Estuary should be accelerated to create a global electronic and information industrial base. The development of services including financing, convention and exhibition, logistics, technology services and cultural innovation should also be expedited. At the west bank of Pearl River Estuary, large scale advanced manufacturing industries should be developed, development of service industries should be expedited, and the leading industries should be strengthened with a view to creating internationally competitive industry clusters.

—— **A world-class advanced manufacturing base:** actions should be taken to speed up the development of the equipment manufacturing industries by actively implementing the projects such as the Shenzhen Baguang Fine Chemical Industrial Park, China State Shipbuilding Corporation’s plant for the production of low speed marine diesel engine in Guangzhou, Zhuhai’s aircraft and maritime engineering equipment manufacturing plants, and the relevant projects of Longxue Shipbuilding and Zhongshan Shipping. Production of automobiles using alternative energy sources should be encouraged through the guidance and impetus from the government. The use of electric cars in the key cities of the Bay Area should be promoted through the development of factories for the assembly and production of spare parts for electric cars. Vocational and technical education in the relevant aspects should be promoted by utilizing the well-developed, distinctive industrial areas as training bases.
and the capital from government, big corporations and private enterprises to establish vocational and technical education institutions in the Bay Area.

— A base of modern service industries: Hong Kong’s advantages in financial sector should be enhanced and the cooperation with Shenzhen should be strengthened. Furthermore, actions should be taken to upgrade the logistics sector in the Bay Area to facilitate development of it into a major modern business region and a world-class logistics centre. Professional services, such as design, market planning, engineering consultation and intermediary services, should be supported to facilitate development of the Bay Area into a nationwide e-commerce centre, design capital, international exhibition centre, service outsourcing base. Headquarters economy should be actively promoted for the establishment of global marketing service and central commercial centres. Projects for the standardization and branding of service industries should be promoted to develop the Bay Area into a globally influential centre of finance, logistics, innovative design and headquarters economy.

4.1.3 "Internally and externally accessible Hub Bay"

Through further strengthening the connections of all transportation hubs in the PRD, Hong Kong and Macao for the fast circulation of key economic factors, the Bay Area should develop into a convenient international and domestic transportation hub. The specific measures for realizing the transportation hub in the Bay Area are detailed in Chapter 5 of this report, "Plans for Cooperative Development of Transportation".

4.1.4 "Ecological Bay with blue sky and clear water"

The Bay Area comprises a complex network of waterways and wetlands, of which the ecological functions are important and extremely sensitive. With further economic and infrastructure development, the contradiction between the protection of ecology and urbanization will become more acute. Therefore, efforts should be put on the management and control of ecology and environment. The specific measures for the protection of the ecology and environment of the Bay Area are detailed in Chapter 6 of this report, "Ecological/Environmental Protection Plans".

4.1.5 "Scenic Bay with proper development intensity"

— "Smart growth" approach in land development: with the guidance of relevant policies, the Bay Area should change its current pattern of disorderly urban growth led by the industrialization of villages and small towns, and should strengthen the concept of "smart growth" to achieve effective control over urban sprawl. Based on the regional eco-security framework proposed by this study and the planning of green belt system for the PRD, effective ecological controls should be established through the identification and protection of the key ecological origins, corridors and nodes, integrated protection of the regional ecological and green leisure resources
and setting out clear boundaries and limits on urban growth. Emphasis should also be put on recyclable use of urban land, promotion of low-carbon economy and low-carbon city, establishment of land reserve system to ensure orderly development of land resources, conducting studies on innovative approaches of urban renewal, and changing the obsolete mindsets in land development.

**Arrangement of cities/towns in clusters:** the concept of "large cities agglomerate, small cities disperse" as raised in "the Outline" should be followed. Through various measures including the construction of Intercity Mass Rapid Transit, integration of spatial resources, and macro-economic control policies such as the relocation of industries into industrial parks, new development areas with integrated functions should be formed. Actions should also be taken to optimize the arrangement of cities/towns combing the concepts of "vertical city" and "urban carpet" (Column 4-1) to rectify the current extensive, monotonous urban setting and create cities/towns clusters that are highly accessible, fully serviced and with reasonable land use pattern, scenic landscape, and good living and working environment.

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**Column 4-1: "Vertical City" and "Urban Carpet"**

The concept of "Vertical City" started to be popular in Europe after the Second World War. It refers to the practice of putting various urban functions such as the residential, employment, leisure, medical, education uses into one place. This spatial form, characterized with large building scale, high plot ratio and high density of people, serves to achieve concentration of land uses and agglomeration of core functions of a city.

"Urban Carpet" is a concept in contrast with "Vertical City". It refers to the practice of creating extensive ecological green belts outside the highly concentrated urban core areas. Through the "carpet form" of greening and ecological conservation, this practice serves to link up the dense built-up areas of various cities in order to form an overall spatial structure comprising clusters of development areas.

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**"Sunshine Coast" for leisure:** drawing on the experience of Singapore's "Sunshine Coast", the Bay Area should plan for a dynamic sunshine coast, with the production, daily living and ecological functions well coordinated. Uncontrolled development and disorderly expansion of small and medium-sized ports should be avoided and emphasis should be given to the protection of coastal landscape and enhancement of cultural and life-style developments. A national waterfront park should be built. An "Ecological Bay for leisure" that combines the functions of ecological conservation, protection of cultural heritage, eco-tourism, high-end service industry, scientific research and education should be promoted to turn the Bay Area into the top attraction of eco-tourism and cultural-tourism for residents of the Greater PRD as well as tourists.

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**Waterfront landscape with distinct characteristics:** drawing on the experience of Hong Kong and Macao in the development of waterfront landscape, a comprehensive design for the waterfront landscape of the Bay Area should be formulated to rectify the current setting dominated by ports and related industrial and transportation developments. The waterborne transportation, urban services, residential and commercial functions should be integrated through comprehensive planning and development. The protection of the coastal environment would upgrade the city's appearance as a whole and create high quality waterfront landscape.
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4.1.6 "A pioneer Vibrant Bay"

--- Harmonious colour schemes: the government should take the lead to set up comprehensive guidance and control mechanisms to achieve harmonious colour schemes for the Bay Area. Studies should be taken on the colour schemes of the major scenic areas and the central districts of each city, with emphasis on the compatibility of the colour between natural and man-made environment, preventing the abuse of excessively bright or dim colours, and creating a characteristic subtropical waterside landscape.

--- Multi-cultural integration: a "multi-cultural Bay Area" that encompasses the traditional Lingnan culture, the new urban migrants' culture, the metropolitan culture in Hong Kong and the European culture in Macao should be established to highlight the cultural charisma and image of the Bay Area. Actions should be taken to actively promote the relationship with the overseas. Making use of the strengths of Hong Kong and Macao in language, business and socio-cultural aspects, platforms for international cooperation and interflow and measures to attract the immigration of international talents should be implemented.

--- An area of creativity: Hong Kong and Macao should make full use of their "international vision" and share their experiences with the other cities in the Bay Area on the aspects such as the training of high-end creative talents, management and protection of intellectual property rights, assistance to investments, etc. The PRD should serve as a hinterland of resources including creative talents and markets for Hong Kong and Macao. Guangzhou, Shenzhen and Zhuhai should plan well for the promotion of creative industries such as animation, multi-media and internet services with a view to developing PRD into China's creative software and animation base.

4.2 Plans for Metropolitan Area Development

4.2.1 An integrated "Guangzhou-Foshan Metropolitan Area"

--- Planning for Guangzhou-Foshan integration: based on a series of policy frameworks and agreements and the principles of resources sharing, complementation of advantages and win-win cooperation, a plan for the integration of Guangzhou-Foshan should be formulated to set out the required arrangements, mechanisms, action areas and projects. The plan should provide guidance for the integration of government functions and resources, and serve as a model for the integration of economic systems in the Greater PRD.

--- Implementation of the agreed arrangements for the Guangzhou-Foshan integration: the "Framework Agreement on Guangzhou-Foshan Cooperation of Integration" and the four cooperation agreements on town planning, transportation infrastructure, environmental protection and industry cooperation should be implemented. Cooperation in the aspects of energy, education, culture, employment, social welfare and quality manpower should be promoted.
4.2.2 An international "Hong Kong-Shenzhen Metropolitan Area"

—— Implementation of the "Cooperation Agreement on Shenzhen/Hong Kong Innovation Circle": focusing on the cooperation in production and advancement of productivity, actions should be taken to enrich the projects such as the "Construction of Public Information Service Network in the Shenzhen-Hong Kong Innovation Circle", "Financial Assistance for Major Projects in the Shenzhen-Hong Kong Innovation Circle" and "Shenzhen-Hong Kong Production Base". Implementation of the 24 key projects under the "3-Year Action Plan of Shenzhen-Hong Kong Innovation Circle (2009-2011)" should be expedited. Cooperation of the industrial, academic and research institutions should be enforced to encourage "bottom-up" initiatives in research and development and expedite the adjustment and integration of the innovation and industrial systems. A strategy to build a "Shenzhen Silicon Valley" should be put forward by integrating innovation and spatial planning on the basis of the resources of the Shenzhen High-tech Industrial Park and University Town and through forming strategic alliance with the universities and research institutes in Hong Kong, with a view to establishing a significant strategic region of innovation serving the Metropolitan Area as well as China.

—— Cooperating to build an international metropolis: Hong Kong should continue to bring its status as an international centre of service industries into full play. At the same time, it should cooperate with Shenzhen in areas such as commercial transformation, connection of service chains and allocation of resources. Shenzhen and Hong Kong should join hands to build a global centre of finance, logistics, trading, innovation and creativity culture.

4.2.3 A distinctive "Macao - Zhuhai Metropolitan Area"

—— Encouraging collaboration between Macao and Zhuhai: concrete action plans should be worked out to implement the consensus on the connection of cross-boundary infrastructure, facilitation of CIQ clearance, industrial cooperation and provision of social services. Special attention should be paid on the connection of Macao-Zhuhai cross-boundary infrastructure and the construction of Hong Kong-Zhuhai-Macao Bridge and Guangzhou-Zhuhai Intercity Mass Rapid Transit (extending to Hengqin) so as to establish an integrated transportation hub at the west bank of Pearl River Estuary.

—— Reinforcing the complementation of advantages between Macao and Zhuhai: by taking full advantages of Macao's service industries and the land and tourism resources in Zhuhai, this Metropolitan Area should develop into a new pole of economic growth at the west bank of Pearl River. For mutual benefits and win-win development of Macao and Zhuhai, innovative mechanisms of land management and cooperation in land use should be implemented to resolve the problem of land shortage for urban development in Macao.
Forming new pole of economic growth: The old pattern of urbanization through urban sprawl and intensification of labour-intensive industries as happened at the east bank of Pearl River should be avoided, and a "smart growth" concept for economic growth should be explored. The proposals of establishing port-based production bases under "the Outline" should be realized by expediting the development of Gaolan Port Industrial Area, the ocean engineering and equipment manufacturing base, and the aviation industrial park. On the foundation of the tourism industry in Macao and Zhuhai, a regional platform for trading, convention and exhibition, and tourism should be established, with Hengqin as the core, in order to develop the area into a dynamic recreation, tourism and international service centre and drive the overall development of the west bank of Pearl River.

4.2.4 The three cores of coordinated development

Under the above development plans, the three Metropolitan Areas will become highly accessible through a regional transportation network and possess a good basis for cooperation through innovative policies and arrangements. The focus of cooperation will be in modern service and advanced manufacturing industries, including the establishment of a regional innovation system and concentration of modern services mainly along with the Guangzhou – Shenzhen – Hong Kong axis. The cooperation between the three Metropolitan Areas would have strategic implications of serving the whole country and even the world, and is an important spatial plan to attain the objective of developing the Greater PRD into world-class city-region.

4.3 Plans for Axis Development

4.3.1 Optimization of the Guangzhou – Shenzhen – Hong Kong Development Axis

Optimization of development quality: action plans should be formulated and implemented to optimize the development quality of the area along the axis. The focuses of development should include high-end production, liveable ecology and environment, pooling of resources and "seamless circulation" of economic factors.

Column 4-2: Guangzhou/ Shenzhen/ Hong Kong Development Axis

The "Guangzhou/Shenzhen/Hong Kong Development Axis" (Guangzhou – Dongguan – Shenzhen – Hong Kong) covers the currently most developed economic areas in the Greater PRD City-region. It is also the key functional zone in the "Bay Area" development. The axis encompasses those vigorous centres in the City-region (i.e. Guangzhou, Dongguan (Humen – Chang’ian), Shenzhen, Hong Kong), key transportation nodes in the City-region (i.e. Guangzhou Baiyun International Airport, Shenzhen Airport, Hong Kong International Airport, West Shenzhen Port, Kwai Chung Container Port in Hong Kong, etc.) and certain fast-growing zones that have good development potentials (including Guangzhou Huadu – Baiyun, Dongguan Humen – Chang’ian, Shenzhen Shajing – Songgang, Qianhai – Shekou peninsula, and Hong Kong new airport – Disneyland).
— "Smart growth" through planning: through comprehensive planning for urban-rural integration and urban renewal in PRD, the pattern of industrial development and land use in the region should be transformed from the previous low-quality, wide-sprawling approach to a more focused and "smart growth" approach. The new development approach will provide a structural basis for the building of the Guangzhou-Foshan and Hong Kong-Shenzhen Metropolitan Areas and a poly-centric urban system in the region.

— "Seamless connections" of transport infrastructure: the "Guangzhou – Shenzhen – Hong Kong Axis" covers the area with the highest mobility and most convenient transport system in the Greater PRD City-region, and serves as the backbone of communication of the region, both internally and externally. To meet the increasing demand in accessibility between cities, it is necessary for the cities along the axis to co-ordinate the construction of transportation infrastructure. Intercity rapid rail system and cross-boundary transportation should be enhanced to achieve "seamless connections" and improve the accessibility along the axis.

— Industrial upgrading driven by cross-boundary cooperation: Hong Kong and the cities in Guangdong, especially Shenzhen, should strengthen cooperation in land development. While the Pearl River Delta should make full use of its advantages in low land and labour cost, Hong Kong should bring its management and business experiences into full play. The two places should work together for the development of a world-class base for advanced and high-tech industries. Specific recommendations of realising cross-boundary cooperation are detailed in Chapter 7.

4.3.2 Enhancement of the Guangzhou – Zhuhai – Macao Development Axis

— Intensification of development: the construction of infrastructure such as the expressway along the west bank of Pearl River, the Intercity Mass Rapid Transit and Shenzhen-Zhongshan Bridge has provided
a good opportunity to boost the development level along this axis and narrow the development gap between the east and west bank of Pearl River. It will also facilitate specialized and diversified development along the axis.

—— Upgrading of the manufacturing industry through planning: through macro-economic control measures such as the integration of administrative functions, integration of urban and rural areas and policies for guiding industrial development, the specialized towns and industrial parks along the axis should be integrated, optimized and upgraded. On one hand, innovation and industrial upgrading should be encouraged. On the other hand, different production activities and resources should be consolidated to strengthen the economy of specialized towns and foster the development of specialized centres with sustained competitiveness.

—— Development of tourism through planning and building transportation infrastructure: with the improvement of transportation infrastructure at the west bank of Pearl River, the accessibility of the major development nodes along the Guangzhou – Zhuhai – Macao Axis will be significantly enhanced. There will be more opportunities to realize the potential of the abundant tourism resources in the area. To make full use of the resources, efforts should be put on enhancing the tourism projects and transportation infrastructure along the Guangzhou – Zhuhai – Macao Axis. On one hand, a tourism development plan should be formulated through a review of tourism resources, forecast of customer trend, planning of tourism products and integration of tourism developments. On the other hand, the accessibility of the tourism attractions should be improved through enhancing the linkages between the scenic spots and transportation hubs, and developing nodes of tourism attractions along the intercity rapid transportation routes.

—— Upgrading of services through cross-boundary cooperation: with the improvement in transportation infrastructure, the west bank of Pearl River will see significant economic development and rapidly growing demand for service industries. Being the development core on the west bank, the areas along Guangzhou – Zhuhai – Macao Axis should put efforts in the development of service industries. In this regard, more cooperation between Macao and the cities at west bank of the Pearl River (especially Zhuhai) should be undertaken to tap on Macao's experience. Specific recommendations to realise cross-boundary cooperation are detailed in Chapter 7 of this report.

4.3.3 Establishment of Coastal Development Axis

—— Promotion of the development axis: the establishment of the "Coastal Development Axis" would rely on the implementation of the major regional infrastructure including the Hong Kong-Zhuhai-Macao Bridge and Shenzhen-Zhongshan Bridge. As these projects are not yet completed, an action plan should be dervied to achieve highly efficient and sustainable development along this axis.
Formation of development axis through transportation infrastructure: cross-river passages such as the Hong Kong-Zhuhai-Macao Bridge and Shenzhen-Zhongshan Bridge are essential in creating the Coastal Development Axis. The two projects should be expedited, tapping on the opportunity that the State has increased its investment in infrastructure to deal with the financial crisis.

Innovative, efficient and intensive land uses and urban/rural structure through planning: the east bank of PRD has been growing rapidly, as benefited from Hong Kong. However, the rapid economic growth has also caused problems like wastage of resources, uncontrolled land uses and serious environmental pollution. The west bank of PRD should avoid such problems. Cities on the west bank, like Zhuhai, Jiangmen and Zhongshan, should prepare as early as possible to optimize the opportunities arising from improved linkage with the east bank. The cities should devise suitable development approaches and conduct environmental assessments before undertaking major development projects, and should ensure high standards of development and efficient use of resources through good planning.

4.4 Plans for Tier Development

The four-tier development space refers to the Bay Area (core tier), the outer Greater PRD ("consolidation – expansion" tier), the "Circum-PRD" (direct hinterland) and the "Pan-PRD" (hinterland). These tiers may be further connected with other regions in China, such as Yangtze River Delta and the Beijing-Tianjin-Hebei region as well as the international markets. The Bay Area Development Plans have been detailed in section 4.1. This section will discuss the other three tiers and the connection with the markets in China and the overseas.

4.4.1 Making full use of the "consolidation – expansion" function of the outer Greater PRD

Proactive actions should be taken to develop different forms of transportation facilities including railways and expressways to extend the influence of the development of the Bay Area towards the whole Greater PRD region as well as a wider area beyond the region.
4.4.2 Increasing the influences towards the "Circum-PRD Region"

— The governments of Guangdong, Hong Kong and Macao should work together to establish a regional cooperation and coordination mechanism to enforce the implementation of "double shifting" of industries and labour force, improvement to the environment and development of quality living area in Greater PRD.

— Actions should be taken to speed up the construction of key transport corridors such as Boluo-Shenzhen Expressway, Guangzhou-Huizhou Expressway Eastern Extension, Guangzhou-Hezhou Expressway, Guangzhou- Heyuan Expressway and Guangzhou-Shaoguan-Lechang Expressway; promote the construction of Guangzhou-Qingyuan Intercity Mass Rapid Transit; and launch preliminary study on the extension of the Intercity Mass Rapid Transit towards the peripheral cities.

— The relocation of industries to industrial parks should be promoted through the reinforcement of the relevant planning and policies.

— Through regional coordination, the function of the mountains in the north of the Greater PRD in the protection of the ecology of the region should be reinforced. With emphasis on protecting the sources of drinking water, the protection of ecology and environment should be strengthened.

4.4.3 Developing the "Pan-PRD" as economic hinterland

— Based on the national strategy of "transmitting power from the west to the east", cooperation with all provinces in the "Pan-PRD" in power generation and the production and sale of energy resources such as coal, natural gas, etc. should be promoted.

— Actions should be taken to strengthen the connections of land transportation systems (railway, expressway, national expressway and provincial highway networks) of the Greater PRD City-region with the "Pan-PRD"; build key rapid rail networks such as the Eastern Coastal Railway, Wuhan-Guangzhou Passenger Line, Nanjing-Guangzhou Railway and Guizhou-Guangzhou Railway; plan for the Western Coastal Railway; and strengthen the connections between Hong Kong, Macao and "Pan-PRD" through building Guangzhou-Shenzhen-Hong Kong Passenger Railway, Pearl...
River Delta Intercity Mass Rapid Transit (with efficient connections with Hong Kong and Macao) and Hong Kong-Zhuhai-Macao Bridge.

— Actions should be taken to actively promote regional tourism cooperation.

— Actions should be taken to establish a stable system of procurement of food and other agricultural products and open up a regional "green corridor" for the transportation of agricultural products.

— Actions should be taken to establish an effective information platform and coordination mechanism for orderly circulation of labour force.

— Actions should be taken to improve the quality of labour force by improving vocational training and professional recognition system.

— Actions should be taken to promote cooperation between research and high-tech industrial institutions to jointly build a regional innovation system.

— Actions should be taken to reinforce regional cooperation in ecological protection and the safeguard of clean drinking water and air quality.

4.4.4 Connecting with other regions in China and the overseas

— Enhancing the market connections with the other two major city-regions in China with a view to forming a giant development axis in east China for raising the overall strength of China to participate in international cooperation and competition: making use of Guangzhou's status as the "integrated transport hub" within China and through coordination in cross-boundary transportation, the connection between Greater PRD City-region and the other two developed city-regions in China (i.e. Yangtze River Delta and the Beijing-Tianjin-Hebei region) should be strengthened. Through building up a "multi-airport system", the aviation network between the Greater PRD City-region and other developed cities in China should be strengthened. Through the construction of rapid rail networks (including the new Beijing-Guangzhou Passenger Railway, Eastern Coastal Railway and Guangzhou-Shenzhen-Hong Kong Passenger Railway) and the enhancement of Beijing-Kowloon Railway and Beijing-Guangzhou Railway, the land transportation connections of the City-region with the developed areas in China should be reinforced. Through the use of advanced technology and innovative management in boundary-crossing facilities and streamlined CIQ clearance procedure, the time required for traveling across the boundaries between the Mainland and Hong Kong/Macao should be reduced. Attempts should also be made to set out the importance of reinforcing the connections among the three major city-regions in the "Twelve Five-Year Plan" with a view to forming a "D-shape" development axis with three mutually interactive centres in the north, east and south of China.
4.5 Sub-regional Development Plans

The roles of the sub-regions are to build closer relations amongst the cities in the Greater PRD City-region, bring out the cohesive force and influences of the regional/sub-regional centres, integrate the sub-regional functions, and therefore effectively rectify the current discrepancy of development levels and imbalanced influence among the cities in the City-region. With emphasis on government actions, such as the planning for sub-regional integration, the Sub-Regional Development Plans proposed in this study aim to achieve coordinated development in the City-region through strengthening the radiating function of the regional/sub-regional centres, integrating the developments of various cities for more efficient utilization of resources, improving the connectivity of transportation infrastructure and promoting the protection of resource and environment.

4.5.1 Innovating the Eastern Sub-region

—— Through comprehensive cooperation between Hong Kong, Shenzhen, Dongguan and Huizhou in urban planning, industrial development, innovation, transportation and environmental protection, the functional spatial layout of the Eastern Sub-region can be further enhanced for further economic growth.

—— Based on the cooperation framework of the "Shenzhen/Hong Kong Innovation Circle" and through the building of infrastructure, such as the Liantang/Heung Yuen Wai BCP, the relationship among Hong Kong, Shenzhen and Huizhou should be strengthened so that Hong Kong's influence could be extended eastwards to a greater area. The Eastern Sub-region will promote the development of eastern Guangdong and will further influence the Taiwan Strait West Coast Economic Zone to allow industrial growth in a wider area.
— Under the framework of the agreement on strengthening further cooperation among Shenzhen, Dongguan and Huizhou, emphasis should be put on promoting cooperation in the development of high technology industries in Shenzhen, Dongguan and Hong Kong, in particular establishing an Eastern Sub-region High Technology Industry Corridor on the foundations of the Shenzhen High Technology Industry Zone and Dongguan Songshan Lake High Technology Industrial Park.

— Coordination among Shenzhen, Dongguan and Huizhou in land use should be promoted and the distribution of key production factors should be optimized.

— The city centre of Huizhou should be strengthened as a local integrated service centre. Daya Bay should be strengthened as a specialized centre. A polycentric development pattern should be established in the Sub-region.

— A "Dongguan-Shenzhen-Huizhou" eco-corridor with connection to Heyuan should be established as part of the sub-regional eco-security system. The Hong Kong, Shenzhen and Huizhou governments should strengthen cooperation to protect the fragile ecological regions, such as Mirs Bay and Daya Bay.

— Under the guidance of the "smart growth" concept in land development in the Bay Area and on the premise of effectively protecting the ecology, environment and agricultural land, actions should be taken to adjust the land use pattern, e.g. through urban renewal, to achieve a more intensive land use and economic growth.

### 4.5.2 Integrating the Central Sub-region

On the basis of the integration of Guangzhou and Foshan, a Guangzhou/Foshan/Zhaoqing economic zone should be established to fully utilize the manufacturing foundation of Guangzhou and Foshan and the abundant resources for eco-tourism in Zhaoqing with a view to creating an advanced manufacturing industry base and liveable cities.

— On the basis of the integration of Guangzhou and Foshan, both cities should strengthen the cooperation and linkage in the development of industries and infrastructure with Zhaoqing. Through the expansion of transportation infrastructure westwards up to Yunfu and Guangxi, a greater radiating influence of the Greater PRD City-region towards the west of Guangdong and the broader hinterland beyond would be achieved.

— The city centre of Zhaoqing should be developed as a sub-regional integrated centre. Through the upgrading of industries and integration of resources of specialized towns, such as Shunde and Nanhai, competitive industrial clusters should be developed and new sub-regional specialized centres should be formed.
Guangzhou, Foshan and Zhaoqing should cooperate to explore the ways to utilize Zhaoqing’s ecological and tourism resources. A landscape belt with ecological rehabilitation and enhancement functions should be established. With the upgrading of Guangzhou and Foshan manufacturing industries, the environmental pollution faced by the Central Sub-region should be resolved. The roles of Guangzhou and Foshan in the Bay Area development should be utilized to promote the development of tourism in Zhaoqing.

Guangzhou, Foshan and Zhaoqing should take the lead in strengthening the management of Xi Jiang and Bei Jiang.

### 4.5.3 Upgrading the Western Sub-region

With the construction of transportation infrastructure across Pearl River, such as the Hong Kong-Zhuhai-Macao Bridge and Shenzhen-Zhongshan Bridge, the natural barriers between the eastern and western bank of PRD would be largely removed and the Western Sub-region would have the biggest scope for further development among the three sub-regions. In the coming 10 to 20 years, the Western Sub-region, with Zhuhai and Macao as the centres, will possibly attain the development level similar to that of the Eastern and Central Sub-regions. The Western Sub-region should prepare for it in advance.

The transportation infrastructure across Pearl River and its connection with the transport facilities within the Sub-region should be actively promoted. Access from Hengqin to Jiangmen and western Guangdong should be formed to provide the infrastructure for further development in the Sub-region.

Zhuhai and Macao should be promoted as centres of service and high technology industries. The city centres of Jiangmen and Zhongshan should be promoted as Sub-regional integrated centres. For the specialized towns, such as those in Zhongshan, industries should be upgraded and industrial agglomeration should be promoted. Actions should be taken to create competitive advanced manufacturing zones in Jiangmen. High quality economic growth pattern should be promoted. Uncontrolled uses of resources including land, as occurred in early development of the east bank of PRD, should be avoided.

Resources should be allocated with balanced emphasis on protection and development. This could be achieved through proper planning for the integration of ecological and cultural tourism resources, by means of a regional tourism development plan. Emphasis should also be put on the protection of water quality to minimize the impact of economic development.

### 4.6 Poly-centric Development Plans

#### 4.6.1 Promoting the functions of the regional centres
The relevant national development strategies, such as the "Eleventh Five-Year Plan", and regional development strategies, such as the "the Outline", have all endowed Hong Kong, Macao, Guangzhou and Shenzhen with the functions of regional centres at both national and international dimensions, and assigned Zuhai and Foshan as regional centres at the regional dimension. These six cities form the centres of the "Bay Area and three Metropolitan Areas" to carry out global city functions. They should be further upgraded, with proper division of functions, in order to undertake different functions of a global city-region.

--- **Hong Kong** should be dovetailed with the economy of the Mainland as soon as possible, overcome the barriers of social and economic activities brought about by the differences in systems with the Mainland, and maintain its status as an international financial centre. The manufacturing industries of the peripheral areas of the Eastern Sub-region should be used to maintain a stable market for Hong Kong's service industries in order to offset its drawback of insufficient anti-risk capability caused by a narrow-based industrial structure. In view of the shortage of development space, cooperation with the areas in the City-region should be promoted to explore more development opportunities.

--- **Guangzhou** should bring into full play its advantage as the provincial capital to strengthen the agglomeration of high-end industries, technology innovation, cultural leadership and integrated service functions. Priority should be given to the development of high-end service industries and advanced manufacturing industries and the enhancement of innovation capacity in order to establish a modern industrial system. Guangzhou should also strengthen its cultural soft power, improve its competitiveness, enhance its status as a national key city, integrated gateway city and regional cultural centre, and increase its radiating influence. Integration of Guangzhou and Foshan should be strengthened to provide guidance for coordinated development of the Greater PRD City-region to achieve rational spatial layout, comprehensive functions and close relationship. Among other cities, Guangzhou should build itself as the top of Guangdong's "liveable city", and an international metropolis oriented to the world and serving the whole country.

--- **Macao** should overcome the shortage of development space through cooperation with Zuhai and strengthening its connection with Hong Kong and the west coast of the PRD. With the construction of the Hong Kong-Zuhai-Macao Bridge, there would be more opportunities for cooperation in industrial development and land use. This factor should be adequately considered in regional development, especially in tourism and convention/exhibition development.

--- **Shenzhen** should continue to act as the gateway, pilot base and exemplary area as a special economic zone. It should also strengthen technology research and development and high-end services to reinforce its status as China's economic centre, innovative city as well as an international
city. Shenzhen and Hong Kong should together build a global financial, logistics, trading, innovation and international innovative cultural centre.

--- Zhuhai should bring into full play its advantages as a special economic zone and its locational advantages. It should hasten the construction of transport infrastructure to form a transportation hub at the west bank of PRD. It should also strengthen its function in agglomerating high-end industries and innovation capability. The advantages of neighbouring Macao should be fully utilized by having more cooperation with Macao to increase its international influence and develop into a modern regional centre, an environmental-friendly area and an exemplary city on scientific development.

--- Foshan should improve its quality of service industries and ecology in order to realize division of functions with the other five regional centres in the City-region, and to promote the agglomeration of advanced manufacturing industries. Emphasis should be put on improving the competitiveness of the local enterprises in the aspects of international advanced manufacturing and modern service industries, flat panel display industry and ceramic industry.

4.6.2 Upgrading the integrated service functions of the sub-regional centres

Actions should be taken to improve the integrated service functions of the five sub-regional centres including Dongguan, Zhongshan, Jiangmen, Zhaoqing and Huizhou, which do not fall within the three major Metropolitan Areas.

--- Actions should be taken to strengthen the administrative functions of the concerned cities, especially the integrated services for both production and daily living, and tackle the shortage of urban services caused by rapid industrialization.

--- Actions should be taken to expedite the construction of intercity rapid transit network to ensure more convenient accessibility within the City-region. The transportation network within individual integrated service centres should be efficiently connected with the intercity rapid transit network.

--- Specific developments which reflect individual city's characteristics and allow higher-level functions in broader areas should be encouraged. For instances, Dongguan should be developed into an international manufacturing base led by electronics, information, light textiles and port industries. Huizhou should be built into a world-class petrochemical base, a national electronics and information industrial base, a pilot base for comprehensive reform of urban/rural development, a leisure base in the Guangdong/Hong Kong/Macao region, and a clean energy base of Guangdong (collectively known as the "Five Major Bases"). Zhongshan should rely on high technology to hasten the restructuring of traditional industries, such as clothing, home appliances, metal products and fine chemicals. Emphasis should be put on strengthening the innovation capability. Zhaoqing should be developed as a tourism centre of the Central Sub-region, the whole Greater...
PRD or even a wider area. **Jiangmen** should be built into a model city which is environmental-friendly and liveable, a base of power sources and advanced manufacturing, and a renowned cultural city.

—— Actions should be taken to introduce the idea of "smart growth", allowing social and economic development through economical and cost-effective utilization of resources in order to provide a quality liveable environment as the basis of improving the integrated service functions.

### 4.6.3 Development of specialized centres in the sub-regions

Apart from the integrated service centres formed by the administrative centres of the concerned cities, there is a group of specialized centres which also exert great influence on regional development, such as the clothing processing base in Humen and Chang'an, the petrochemical base in Daya Bay, and the advanced manufacturing industrial base led by port development in Nansha. Actions should be taken to consolidate the scattered resources and strengthen the advantages of specialization of certain districts or groups of districts through macro-economic control measures by government, such as regional integration and concessions for industrial parks, to help build specialized centres with regional influence.

### 4.6.4 The upgrading and optimization of specialized towns

—— Using planning and regulating tools, the leading industries with distinctive characteristics should be promoted for developing into specialized towns. Support to specialized towns on the aspects of spatial arrangement and social protection should be provided.

—— By means of product promotions, trade negotiations, and business and capital agglomerations, actions should be taken to promote and upgrade the brand names of specialized towns.

—— Through staff training and the integration of production, academic and research institutions, actions should be taken to promote innovations in the specialized towns, identify opportunities of developing correlated industries, promote industrial agglomeration and realize industrial upgrading.