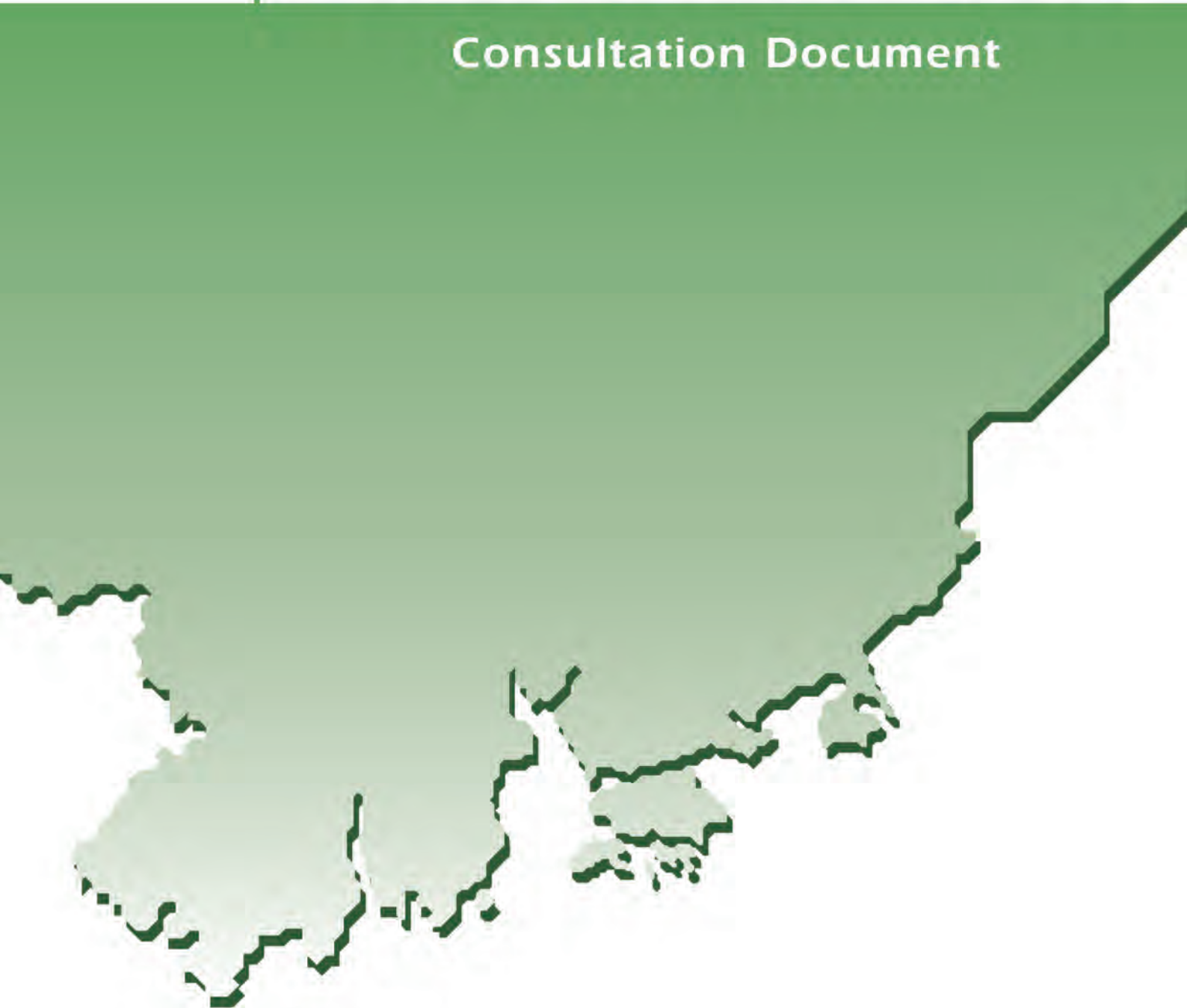




Regional Cooperation Plan on Building a Quality Living Area

Consultation Document



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The English version of this consultation document is translated from the Chinese version. In case of discrepancies between the two versions, the Chinese version shall prevail and take precedence.

Foreword

The proposal for “building a quality living area” was set out in the “Outline of the Plan for the Reform and Development of the Pearl River Delta Region (2008-2020)” (the PRD Outline) promulgated by the National Development and Reform Commission on 8 January 2009. This is a consensus reached by the senior leaders of Guangdong, Hong Kong and Macao with a view to transforming the development of the Greater PRD region. The PRD Outline embraces closer cooperation between the PRD region and Hong Kong and supports the latter’s suggestion to jointly transform the Greater PRD region into a green and quality living area. This notion underscores the sustainable development concept of striking a balance between economic and social development and the environment. It puts quality living for citizens at the heart of regional development. At the same time, it also recognises that whilst people in the Greater PRD region live in different administrative regimes under “One Country, Two Systems”, we are in fact closely connected and interrelated. It is therefore important to continue to enhance regional cooperation.

The Greater PRD region, which consists of nine cities in Guangdong Province i.e. Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing and two Special Administrative Regions, i.e. Hong Kong and Macao, is an important economic region of China. It plays a prominent role and assumes an important strategic position in facilitating the socio-economic development as well as the reform and opening up of China.

Over the past three decades, the Greater PRD region has undergone major developments and reforms. These, coupled with closer cooperation within the region, have brought about phenomenal economic and social development. As a result, the quality of life of people in the region has been improved generally. Amidst the profound changes taking place both within and outside China, the Greater PRD region should continue to act as a pioneer in China’s quest for changing its mode of economic development and facing up to the various challenges from the international arena.

In October 2009, Guangdong, Hong Kong and Macao jointly commenced the study on the Regional Cooperation Plan on Building a Quality Living Area (the Plan), which aims to propose the long-term cooperation directions of the Greater PRD region. This consultation document has been prepared based on background researches, topical studies and discussions between the three sides. It has put forth proposals on the vision and cooperation directions for building a quality living area in recognition of the need to address our common problems through a regional approach. Specifically, the consultation document has suggested cooperation proposals in five areas, namely, environment and ecology; low-carbon development; culture and social living; spatial planning; and transport planning. The Plan to be compiled will serve as a reference by government departments of the three sides to follow up. The planning horizon of the Plan will cover the period up to 2020, which is in line with that of the PRD Outline.

In the course of preparing for the study, the three sides collected stakeholders’ views on the various topics to be covered by the Plan through different channels. In mid- 2008, the Environmental Protection Bureau of Guangdong Province (now the Department of Environmental Protection of Guangdong Province)

commissioned the Chinese Academy for Environmental Planning under the Ministry of Environmental Protection of China to study the idea of transforming the Greater PRD region into a green and quality living area as proposed by Hong Kong. The study team met with stakeholders in Guangdong, Hong Kong and Macao in July 2008 to collect their views. In addition, discussion forums involving relevant experts and academics were conducted in the three places from April to May 2010. The Hong Kong side also presented the proposals on environmental protection and ecological conservation cooperation under the Framework Agreement on Hong Kong/Guangdong Cooperation to the Legislative Council, the Advisory Council on the Environment and green groups during May to July 2010, and the views collected have been suitably incorporated into the study. Overseas and mainland experience in respect of regional and metropolitan development, urban planning and regional cooperation have also been taken on board.

Guangdong, Hong Kong and Macao are governed under different administrative and legal systems. Under “One Country, Two Systems”, the three sides will respect each other’s differences and put forward cooperation proposals to be recommended under the Plan taking account of their respective administrative, legal, and social systems. In addition, the three sides will seek room for tripartite cooperation or bilateral cooperation with a view to making contributions to building a quality living area in the Greater PRD region.

I. The Greater Pearl River Delta Region: Opportunities and Challenges

The Greater PRD region has been an important hub for cultural and economic exchanges between the East and West, and is one of the most important economic regions in China. For many centuries, large numbers of forward-looking talents with innovative ideas and advanced technologies have come to this region to realize their dreams. They have made admirable achievements in the areas of finance, trade, technology, logistics, culture, electronic communication, etc., and helped develop the region into one of the world's most important economic and trading centres. Looking into the future, we would like to see talented and creative people from different disciplines to continue to thrive in this region, and contribute to its sustainable prosperity and development. This will also help maintain the region as the "testing ground" and "pioneer" in implementing the national strategy of promoting scientific development and accelerating the transformation of its mode of development.

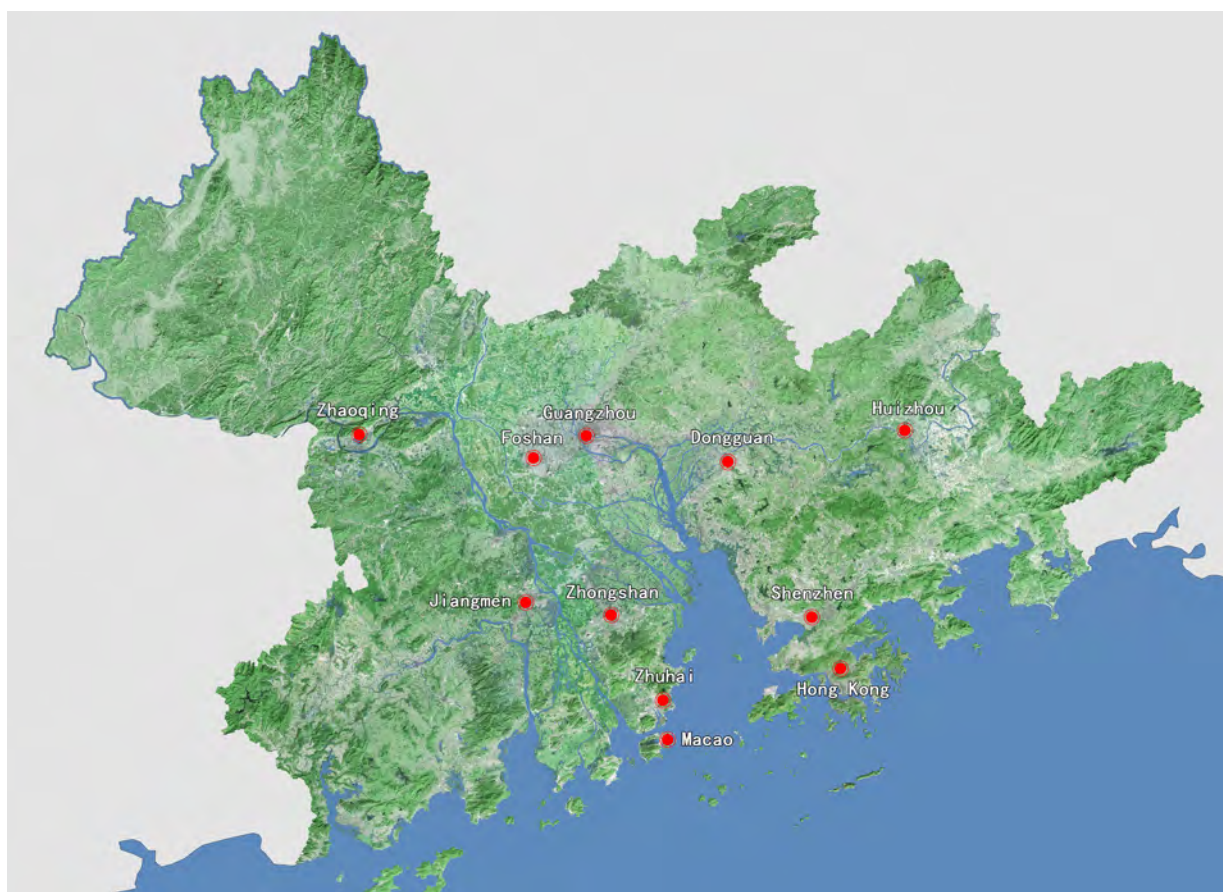


Figure 1-1 The Greater PRD region: the Greater PRD region includes Guangdong Province, namely Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen, Zhaoqing¹ and two Special Administrative Regions, i.e. Hong Kong² and Macao³, covers a total area of 55876.5km².

1 Source: "Guangdong Statistical Yearbook 2009", http://www.gdstats.gov.cn/tjnj/table/1/e1_6.htm

2 Source: "Hong Kong Annual Digest of Statistics 2010", http://www.censtatd.gov.hk/products_and_services/products/publications/statistical_report/general_statistical_digest/index_cd_B1010003_dt_latest.jsp

3 Source: "Macao Yearbook of Statistics 2009", <http://www.dsec.gov.mo/Statistic.aspx>

In retrospect, the Greater PRD region has been a fabulous success story with remarkable achievements. As for its future outlook, the new circumstances in the region have also filled it with opportunities and challenges.

First of all, the trend of world development is such that it attaches great importance to balanced and coordinated economic, social and environmental development. Quality of life has gradually become the core factor for measuring regional and national competitiveness. The Greater PRD region is gifted with natural resources such as pleasant weather, sunshine, seashores and forest, etc., as well as a solid economic foundation. Indeed, it has become one of the most developed city clusters in China. In view of the challenges brought about by the new stage of development, the pursuit of quality living as a new goal for regional development will be in line with the general worldwide trend. It will also help attract talents from around the world, thereby maintaining the overall competitiveness of the region.

Secondly, it is worthy to note that restructuring the mode of economic development is one of the core elements of the national development strategy. In particular, special attention is given to addressing the issues about resources utilization, environmental problems as well as improving people's livelihood. The PRD region is a "pioneer" in taking forward national reforms. With its close connection with Hong Kong and Macao, the Greater PRD region should be able to test out new modes of development. This is indeed an important challenge to which the region as a whole should face up. At present, the impact of the global financial turmoil still prevails. Depletion of energy resources, pressure on the environment, unbalanced economic development and keen competition from other regions within and outside the country are amongst the challenges confronting us. To reinforce the competitiveness of the region, there is therefore an urgent need to accelerate the transformation in the mode of economic development of the PRD region, and to seek balanced and coordinated economic, social and environmental development.

Thirdly, tackling the common problems encountered in regional development calls for regional cooperation beyond administrative boundaries. The ever-increasing population, industrial development and traffic flow have posed serious challenges to regional air and water quality. At the same time, people in the Greater PRD region look for improvement in the provision and quality of public services. There are also other problems like inefficient use of land resources, improper urban and industrial development planning, excessive reliance on automobiles in transportation, and the need to upgrade the standard of regional and urban management, etc. It is necessary to adopt a regional perspective in order to approach and resolve these problems. Cities, towns and villages in the Greater PRD region, after all, are closely connected and interrelated.

To meet the above challenges and create a better future for the Greater PRD, all the cities, towns and villages in the region should be taken as an inter-connected entirety. By following the principle of sustainable development, and through regional cooperation and planning in the respective areas, it will be possible to re-define the relationship between economy, society, and environment, which should complement each other and avoid unduly tilting in favour of one aspect at the expense of the other two.

For avoidance of doubt, the cooperation directions proposed in this consultation document should not be taken as specific plans for the purpose of allocation of resources, nor should they be taken as design options for specific projects. Instead, they are intended to offer ideas and cooperation proposals for taking forward cross-boundary matters or promoting transformation in the mode of development in the region. The study has been undertaken based on the consensus of the governments within the Greater PRD region.

II. Vision and Cooperation Directions in Taking Forward Regional Development

(A) Our vision for regional development in face of the transformation of economic structure

The overall objective of building a quality living area is to transform the Greater PRD region into an exemplar city cluster of green and quality living. The region will be characterized by a safe and healthy ecology and environment; low-carbon sustainable economic development; orderly spatial planning; pleasant landscapes; green and highly efficient transportation networks; as well as well-established, comprehensive, and convenient public services supported by effective coordination and collaboration mechanisms. Building on existing cooperation efforts, the proposed objectives of the various cooperation areas are set out below:

- (i) bringing about a clean and safe ecological system and natural environment: to strengthen protection of our natural forests, green spaces⁴, coastlines, wetlands and agricultural lands which are of high ecological value, so as to facilitate the establishment of a regional ecological system; and to prevent deterioration in regional water and air quality and land contamination with a view to protecting the natural environment and safeguarding people's health.
- (ii) steering economic development along a low-carbon and sustainable pathway, and fulfill the needs of the residents in terms of employment and consumption: to adopt an environment-friendly and sustainable approach in utilizing natural resources and energy in the economic sector with a view to gradually setting up a low-carbon, circular and cleaner economic system; transformation in the mode of economic development, advancement in technology and enhancement in productivity are to become the main driving forces for further economic development; and to substantially increase the share of innovative and service economies.
- (iii) providing more convenient public services and adequate livelihood security: to focus on "expediting the transformation of the mode of economic development and realizing blissful living", including actively promoting community development and providing essential public services in a fair manner in the PRD region⁵; and to establish preliminary regional and cross-boundary public service mechanisms in the Greater PRD region, which will elevate

⁴ Green space aims at protecting regional ecological safety, highlighting the natural and humanity characteristics of the area and improving the environmental landscape of towns and villages. Green space is designated in certain regions and subject to long-term stringent protection and development restrictions. This green open space has significant natural and human values, as well as regional significance. [Source: Guangdong Province Regional Greenway Planning Guidance]

⁵ According to the "Notice on Printing of the Outline of the Plan for Equalization of Basic Public Services in Guangdong Province" (GD Gov No.[2009]153), provision of essential public services in a fair manner refers to giving equal rights to citizens for enjoying basic public services as far as possible such that all citizens enjoy more or less the same level of basic public services. However, it does not mean that every citizen will enjoy entirely the same basic public services. Rather, it means that all citizens will enjoy a certain standard of basic public services taking into account the differences between regions, cities, various urban areas and groups of people.

the convenience for people living or working across boundaries.

- (iv) well-planned spatial development and a pleasant living environment: to plan and locate key development areas mainly in major towns and industrial parks in a systematic approach; to enhance land use efficiency and undertake urban redevelopment works; and to preserve the pleasant landscapes of cities and villages, as well as streets, districts and buildings of historical value.
- (v) establishing a green, highly efficient and people-oriented transportation system to facilitate convenient cross-boundary connections: to develop a public transportation system with rail networks as its major backbone, and to increase its share relative to other modes of passenger transport; to provide convenient interchange arrangements for different transportation modes; to progressively promote and improve non-motorized transportation, where appropriate, taking account of practical considerations; to improve the planning of transportation networks as well as the connectivity of the various modes of transportation so that commuting in the region will be hassle-free; and to promote energy efficient and clean transportation systems as well as the use of new energy in this sector in order to effectively control pollution and greenhouse gas emissions.



Figure 2-1 Harmonious family life: the objective of building a quality living area is to let every family and individual in the region have a better life.

(B) Regional cooperation directions proposed under this consultation document

Guangdong Province, Hong Kong SAR, Macao SAR, and the nine PRD cities in the Greater PRD region share the common vision of building a quality living area. The governments of the three places will cooperate and work towards realizing this vision.

1. According priority to protecting natural resources and environment

- (i) Utilizing natural resources in a sustainable way: to adopt the option with the least impact on natural resources and environment in planning the development of industries and towns; to strengthen environmental impact assessment of various construction and development works such as construction of factories, buildings, public facilities and infrastructure, etc.; and to conduct ecological impact assessment where necessary to ensure that the principle of sustainable development is being met, and that the necessary environmental or ecological measures are adopted to mitigate any adverse impacts.
- (ii) Safeguarding the regional ecological systems: to enhance research and studies on natural landscape resources in urban and rural areas within the region to help gradually establish a regional natural resource database; to establish a comprehensive assessment, grading and classification system for ecological resources building on existing cooperation on protecting regional green space; and to draw up appropriate protection and control measures to ensure proper conservation of natural habitats and biodiversity that are critical to preserving the ecosystems.
- (iii) Strengthening protection on water and air quality: to progressively improve the joint monitoring work on regional water and air quality in order to identify critical issues in regional environmental protection and adopt prompt and effective measures to address prominent regional environmental problems; and to strengthen environmental emergency alert and response arrangements to avoid deterioration in environmental quality.
- (iv) Increasing public resources for environmental protection and preservation of natural resources: to take protection of natural resources as an important goal of public administration; to substantially increase the resources allocated for environmental pollution control, ecology conservation, establishment of nature conservation areas, and preservation of natural landscapes; to encourage administrations at the local level to undertake land resumption for the purpose of protecting natural resources and landscapes as well as supporting agricultural development; to gradually establish

a comprehensive mechanism in the PRD region to support diversified agricultural development, including the provision of support to farming villages, farmers and farming activities as well as protecting agricultural, forestry, water and oceanic resources; and to continue to implement and strengthen existing measures on natural resources conservation in Hong Kong, which include designation of country parks, special areas, marine parks, coastal protection areas and nature conservation areas, as well as carrying out conservation planning for important habitats and species.

- (v) Exploring the setting up of an ecological compensation mechanism in Guangdong Province and continue to improve the fund transfer and payment systems to enable those areas preserved for nature conservation to also share the benefits from regional economic development.



Figure 2-2 Wetland at Pearl River Estuary: The mother river, which has been providing a safe shelter and plentiful resources for regional development and social living since ancient times, needs our careful protection.

2. Speeding up the transformation of the mode of economic development

- (i) Expediting the transformation and upgrading of the economic structure: to support development of modern services industry, high-technology industry and “urban

agriculture”; to promote creativity and innovation in the region; and to deepen reforms in the areas of financing and management of service industries with a view to driving the region to become a knowledge-based and service-oriented economy.

- (ii) Expediting improvement in the energy and resource utilization patterns of the trades and industries so as to enhance their efficiency: to enhance research and promotion of new energy and energy efficiency technologies and products; to promote wider use of clean energy and renewable energy; to provide strong impetus to support the development of environmental industries, including promoting circular economy, raising the cleaner production level and facilitating recycling and reuse of resources; and to strive to achieve breakthroughs in enhancing energy efficiency and reducing emissions for setting up low-carbon and circular economy in the Greater PRD region.
- (iii) Enhancing the quality of urbanization in the PRD region: to raise the development level and quality of services, induce advancement in the surrounding areas, accelerate the rate of increase in income for people working in the region; and to raise the consumption power of citizens and enterprises to facilitate a progressive change towards a regional economy driven by domestic demand.



Figure 2-3 Human resources are the foundation for upgrading the economy: economic prosperity based on knowledge and creativity is the foundation for speeding up transformation of economic development and facilitating sustainable development of the Greater PRD.

3. Improving the provision of public services and addressing livelihood issues in the region

- (i) Providing essential public services in a fair manner in the PRD region: Guangdong Province to give consideration to allocate more public resources for provision of public services with a view to implementing the "Planning Outline for Equalization of Basic Public Services in Guangdong Province(2009-2020)"⁶ ; to place emphasis on public education, public health, public cultural and sports activities, public transportation, livelihood security, housing security, employment security, and medical security, etc.; to reform and improve the public service systems so that services provision is to be more evenly distributed in both urban and rural areas and supported by effective management systems; and to enhance the level and standard of essential public services in the region to render them amongst the best in the Mainland and comparable to those of a moderately developed country.
- (ii) Speeding up the introduction of new concepts to the social management system for the PRD region: Guangdong Province to gradually extend the pilot scheme on social management system reform, and encourage PRD cities to consider making changes to their social management and public services systems to best suit their local situation; to consider restructuring government functions, improving relevant legislations and regulations, establishing government service procurement systems, setting up and engaging non-governmental or resident organizations in social management; to promote the development of non-governmental organizations by improving their registration and management system; to help establish social worker teams; to create new mechanisms for urban and rural community management to allow self-management and promote self-service; to reform the household management systems by allowing more opportunities for the migrant population to participate in social and local affairs management; and to establish a migrant registration system unique to the PRD with a view to progressively stabilizing regional population growth and enhancing the population structure.
- (iii) Improving the diversity in the public services provision mechanism: to expand the services scope and relax the threshold for allowing non-governmental organizations and enterprises to provide such services, whilst upholding the principle that public welfare services are to be mainly provided by government; to strengthen regional cooperation to encourage domestic and foreign investment and participation in the provision of public services as well as in the setting up, operation and management of related facilities; and to accelerate the pace of developing these services in the region and raising the service quality.

6 http://zwgk.gd.gov.cn/006939748/200912/t20091214_11575.html No. 01.2010, Official Journal of the People's Government of Guangdong Province (Chinese version only)

- (iv) Improving the quality of life for people living across boundaries: to continuously improve the cross-boundary coordination and cooperation mechanism in the provision of social services so as to allow the three sides to capitalize on their resources and strengths and complement each other's role; to encourage social service providers to operate across boundaries; and to establish suitable mechanisms to safeguard the welfare of people living across boundaries and enhance their convenience of living.

4. Changing the mode of spatial development

- (i) Making better use of land supply to promote changes in the pattern of economic development: to actively promote “double transfers” within Guangdong, i.e. relocating population and industries between the PRD region and the eastern, western and northern parts of Guangdong Province as well as between the core and peripheral areas of the PRD region; to promote better planning and distribution of industries and more balanced development of the region; for places where industries are to be relocated to, put more emphasis on energy conservation, emissions reduction as well as environmental protection so as to minimize the environmental impacts brought about by the relocation of industries; for service-oriented cities, to encourage their development as public transportation hubs and to become multi-functional centres with commercial facilities, offices, hotels, apartments, leisure facilities, etc.; for the PRD region, to formulate criteria for industrial land use and development taking account of the level of technological innovation, investment, production and output, energy usage and emissions, and infrastructure required for supporting circular economy, etc.; and to promote upgrading of trades and industries, facilitate more integrated development for industrial parks and urban cities and accelerate the development of service-oriented economies and creative industries.
- (ii) Adjusting land supply and land-use planning to improve the quality of life: Guangdong Province to carry out more in-depth investigation on housing needs; to progressively develop mechanisms for providing diversified housing for meeting the different needs of the community and ensuring adequate land supply; to progressively establish a land use protection system; to continue to develop greenways⁷ in the PRD region, including expansion and improvement of the regional greenway networks⁸, progressively developing urban and communal greenway systems, connecting cities and communities

⁷ Greenways are linear open space developed along natural and man-made corridors such as riversides, valleys, ridges and scenic roads. Greenways provide landscaped and recreational routes for pedestrians and cyclists and are connected to major parks, nature conservation areas, scenic spots, historic sites, and urban and rural residential areas, etc. The development of greenways will better protect and make use of natural, historic and cultural resources, and provide recreational and social space for citizens. Greenways are composed of two major parts, viz the natural green corridors and the ancillary man-made systems which provide the recreational functions of the greenways. [Source: The Outline of the Master Greenway Network Plan of the Pearl River Delta]

⁸ Greenway networks comprise regional greenways and urban greenways. Greenway networks are networks of corridors connecting regional green space and they are the ribbon-like open space with recreational functions. Greenway networks can protect the ecological environment as well as reflect the recreational values of natural and humanity resources. [Source: The Outline of the Master Greenway Network Plan of the Pearl River Delta]

with greenway networks, and establishing extensive ecological corridors between urban and rural areas; to uphold the principle of preserving natural landscapes and conserving ecology in the process of establishing greenways so as to maintain and strengthen the foundation of the natural ecology; for Hong Kong, to continue to implement and strengthen existing measures on nature conservation in Hong Kong, which include designation of country parks, special areas, marine parks, coastal protection areas and conservation areas, as well as carrying out conservation planning for important habitats and species.

- (iii) Encouraging public transport-led spatial development: Guangdong Province to improve the planning and layout of urban development in the PRD on the premise that priority be accorded to the development of public transportation; to restrict urban sprawl along highways and at areas not well-served by public transport; to encourage more intensive development around public transportation hubs; and to promote high density mixed development at transportation hubs when the capacity of the supporting infrastructure (such as transportation system) allows such development.
- (iv) Promoting coordinated spatial development in the PRD region: on the basis of pursuing differential development patterns in places that serve different functions, Guangdong Province to consider introducing policy measures to coordinate spatial development so as to protect the development rights of different areas, in particular those that are relatively backward; to explore the setting up of an ecological compensation mechanism in areas covered by the river basins of Guangdong Province primarily under the support of a plan/project; on this basis, to look into the feasibility of setting up an ecological compensation mechanism for nature conservation areas and important ecological zones in Guangdong Province; in respect of agricultural land use, to explore measures that promote coordinated spatial development in addition to existing land protection initiatives, e.g. to examine establishing a cross-regional land use index to balance the amount of land set aside for development purposes and that for agricultural uses; to consider setting up a “trading mechanism” to try out the notion of “shared development rights” where priority development zones will share the development rights with areas designated for agricultural purposes or to cooperate with the latter to undertake or operate the developments; and to strengthen the coordination on regional planning and provide resources and technical support to relatively under-developed regions.
- (v) Actively exploring regional cooperation opportunities in spatial development: to encourage cooperation amongst towns and cities in the PRD region as well as with Hong Kong and Macao to actively explore development of different forms of cross-boundary cooperation, including allowing greater flexibility in adopting new approaches in the relevant planning, land and resources provisioning, taxation arrangements, and

socio-economic analysis.

5. Provision of convenient, green and people-oriented transportation services

- (i) Developing a transportation system with rail networks and other modes of public transport: to accelerate the pace of development of the regional public transportation network comprising intra-city and intercity rail networks; to better coordinate the development of different modes of transport such as regional-based vs. city-based transportation; public vs. private transportation; rail vs. road transportation; and air/sea vs land transportation, etc.; and to enhance the development of integrated transportation hubs.
- (ii) Promoting the development of regional green transportation: to improve the transportation structure and gradually raise the fuel and emission standards of various modes of transport such as motor vehicles and vessels, etc.; to undertake trials on new modes of transport which are energy efficient and environment-friendly, and promote their wider use on the basis of the trial results; to improve and upgrade infrastructure, where appropriate, for supporting non-motorized transportation such as cycling and walking with a view to bettering the environment and raising the degree of comfort for such transportation modes.
- (iii) Continuously facilitating and enhancing the convenience and efficiency of cross-boundary movement: subject to complying with national policies, meeting practical needs and availability of necessary resources, to progressively relax the boundary control policies for citizens and tourists in the region; to streamline the clearance procedures and enhance boundary-crossing facilities and services; and to improve transportation connections serving between boundary crossings and cities as well as intercity transportation networks. These will allow more integrated and convenient cross-boundary transportation, and in turn facilitate cross-boundary movement of people and goods within the Greater PRD region.



Figure 2-4 Cycling track: Cycling and walking are healthy and green transportation modes; non-motorized transportation facilities in PRD cities such as cycling tracks are major components for "greening" regional transportation.

Of the initial cooperation areas outlined above, those relating to the economy, society and environment are the core elements of regional transformation and quality living. Land supply and land use planning play an important role in catalyzing coordinated development of the above three elements. Furthermore, transportation provides mobility for people living in the region, and serves as a major support system in connecting different parts of the region together. These five areas are closely connected and interrelated. For the future development of the Greater PRD region, it is therefore necessary to strengthen regional cooperation focusing on these areas.

III. Initial Cross-boundary Cooperation Proposals for Guangdong Province, Hong Kong and Macao

The Plan to be compiled is of great significance to Guangdong, Hong Kong and Macao. Based on the proposed regional cooperation directions outlined earlier, and taking account of individual circumstances as well as the fundamental issues and concerns encountered, this consultation document has set out initial cooperation initiatives in the areas of environment and ecology; low-carbon development; culture and social living; spatial planning; and transportation system. In particular, cooperation initiatives have been suggested in respect of issues that are more pressing and well founded, for reference by the three governments in future when drawing up their respective plans and action agenda.

(A) Improving the environmental and ecological quality of the Greater PRD region

1. Strengthening and improving the ecosystems of the Greater PRD region

To effectively protect the environment and natural resources, and to address the serious challenges encountered in preserving ecological areas during the process of regional development, it is proposed that the three sides should take joint actions to strengthen and improve the ecosystems of the whole region on the basis of existing measures being implemented for preserving ecological areas, and by giving consideration to requests from various sectors. Such cross-boundary cooperation can involve actions in preserving regional ecosystems and ecological resources; developing the regional ecological service functions, and sharing of ecological protection knowledge and techniques in restoring the damaged ecosystems, etc. Such will help create favorable conditions for resolving major regional environmental and ecological issues. Proposed initial cooperation initiatives include:

- (a) drawing up a regional ecological system preservation plan;
- (b) embarking on conservation planning for adjoining ecologically sensitive areas; and
- (c) carrying out in-depth studies for further cooperation in ecological protection.

(a) Drawing up a regional ecological system preservation plan

The three sides should jointly study the formulation of an overall plan and supporting systems for preserving regional ecosystems. The layout of this plan may comprise “one nucleus”, “six axes”, “nine ecological resources zones”, and the “23 regional ecological nodes”, “37 ecological sensitive areas”, “ecosystem webs”, and also the “multi-tier and multi-dimension protection areas”.

- (i) "The Bay Area of the Pearl River Estuary" should become the core area for preserving ecosystems in the Greater PRD region, and the following initiatives are proposed to enhance ecological protection therein:
- ▶ protecting coastline ecological resources and enhancing wetland protection;
 - ▶ jointly strengthening the work in establishing and managing the nature reserves in the Bay Area, and taking forward the "Work Plan for Protection of Mangrove Wetland at the Pearl River Estuary". Actively working to restore the ecosystems and setting up a protection network for water birds and wetland at the estuary together with the neighbouring nature reserves. This will enhance the biodiversity and the protection of selected habitats of the Bay Area;
 - ▶ clearly identifying the roles and functions of the different Greater PRD cities in protecting water quality of the Pearl River Estuary, and expediting the protection work on the aquatic environment in the Estuary; and
 - ▶ carrying out comprehensive and rigorous environment and resources feasibility assessment for future major landuse development projects at the Bay Area. During the assessment processes, stringent environmental assessment procedures and standards should be adhered to, so that the concerned development projects will not undermine the overall objective of protecting ecological resources of the Bay Area.
- (ii) Preparing a plan to formulate a three-tier ecological protection and management system, which can comprise ecological resources zones; regional ecological nodes; and ecological sensitive areas which are within developed urban areas; so as to strengthen the protection of existing vegetation patches.
- (iii) Riding on the establishment of river networks and greenways, and working to connect the ecological core at the Bay Area with the ecological areas at its periphery. These ecological "axes" will form the backbone in preserving regional ecosystems, and in containing the scale of urban sprawl as well as land development activities within the region.
- (iv) Embarking on planning and improvement works for preserving ecosystems at different levels within the region, including urban, rural, and the community areas.



Figure 3-1 A conceptual plan for preserving ecosystems of the Greater PRD region: this is based on the natural ecology baseline of the region, and takes into account existing regional collaboration efforts. Emphasis is being given to the connection between natural ecological resources at different places and their extension towards the urban developed areas.

(b) Embarking on conservation planning for adjoining ecologically sensitive areas

Embark on ecological conservation collaboration with priority given to adjoining ecologically sensitive areas, i.e. the Shenzhen Wutong Shan National Forest Park — Robin's Nest in Hong Kong, Futian National Nature Reserve in Shenzhen — the Mai Po Inner Deep Bay Ramsar Site in Hong Kong, Cotai, Coloane-Taipa Ecology Reserve in Macao — Hengqin Island, and the Pearl River Estuary Chinese White Dolphin Nature Reserve.

- (i) Shenzhen Wutong Shan National Forest Park — Robin's Nest in Hong Kong. Initial cooperation proposals include:
 - jointly setting up a liaison and coordination group between Shenzhen and Hong Kong to focus on protecting vegetation cover and establishing ecological corridors; and jointly formulating the necessary preservation and management measures;

- ▶ Hong Kong and Shenzhen to plan and coordinate regional ecological protection work for this area, and to raise the protection grading; increasing and enhancing protection of vegetation cover in this area by making reference to the management model of the nature conservation area under the terrestrial vegetation ecosystem category; and appropriately zoning the area and adopting corresponding ecological protection, restoration and development measures;
- ▶ jointly undertaking ecological baseline studies to find out the regional biodiversity, its community characteristics and spatial distribution, which will provide the necessary background information and data for formulating management initiatives in the future;
- ▶ Hong Kong and Shenzhen respectively setting up permanent integrated observation points. They can be used as constant sample collection sites for studying the regional terrestrial vegetation coverage and the changes in their ecological functions in suburban areas under rapid urbanization. This will facilitate the protection of the ecosystem in the region; and
- ▶ commencing a study on cross-boundary greenways connection between Shenzhen and Hong Kong for facilitating further work in this area.



Figure 3-2 Robin's Nest in Hong Kong: it is proposed in the Study on Land Use Planning for the Closed Area that about 500 hectares of land in Robin's Nest be reserved as country park to protect important flora and fauna and natural ecological landscape, which will help promote eco-tourism activities and environmental conservation.

(ii) Futian National Nature Reserve in Shenzhen — Mai Po Inner Deep Bay Ramsar Site in Hong Kong. Initial cooperation proposals include:

- ▶ setting up a regular liaison and management coordination mechanism; consolidating relevant management policies and measures; and discussing and implementing management action plans to substantially enhance the ecological structure and functions of the two wetlands;
- ▶ improving the basic facilities at the two protected wetland reserve areas; and actively undertaking cooperation on management, staff training, and experience sharing, etc.;
- ▶ jointly formulating regional-based water pollutant emission reduction management proposals and action plans with a view to improving water quality at Deep Bay and preserving the estuary wetland system in the long run;
- ▶ jointly carrying out, in collaboration with research institutions, monitoring and baseline research programmes regarding the ecological structure and functions of wetland systems; and formulating more scientific management strategies;
- ▶ giving consideration to the setting up of integrated mangrove ecosystem monitoring systems respectively in Shenzhen and Hong Kong, and working to incorporate these systems with the PRD mangrove resources monitoring network which is being planned by Guangdong Province; and
- ▶ Guangdong to proactively prepare for the application of listing the Futian Nature Reserve in Shenzhen as a “Wetland of International Importance”. Consideration will be given to expanding the wetland nature reserve; and an overall ecological protection strategy covering the Shenzhen River Estuary as well as the whole catchment area will be undertaken.

(iii) Cotai, Coloane-Taipa Ecology Reserve in Macao — Hengqin Island. Initial cooperation proposals include:

- ▶ designating the Erjingwan mangrove on Hengqin Island and its surrounding wetland as a nature reserve area. This will help preserve the habitat for migratory birds, and even help mitigate the possible short-term ecological impacts that could be brought to migratory birds in the Cotai, Coloane-Taipa area;
- ▶ carrying out environmental impact assessment for development and construction projects in this area. Practicable measures for minimizing

environmental and ecological impacts should be adopted with a view to maintaining the natural environment in the region as far as possible; and

- ▶ Zhuhai and Macao authorities to carry out joint monitoring and research projects on conservation of the mangroves and migratory birds in this area, so as to find out the role and functions being played by the local wetland ecosystems in protecting migratory bird species. The results will form the scientific basis for future conservation initiatives.

(iv) Pearl River Estuary Chinese White Dolphin Nature Reserve. Initial cooperation proposals include:

- ▶ Guangdong, Hong Kong and Macao to jointly study and devise a joint management plan on conservation of Chinese White Dolphins at Lingding Bay to manage and control activities that may affect the habitats and safety of the dolphins. These activities may include fishing, shipping, reclamation works, and effluent discharge, etc.;
- ▶ Guangdong Province to study and consider enacting "Management Regulations on National Chinese White Dolphin Nature Reserve at the Pearl River Estuary" as soon as possible. The feasibility of inclusion of the northern waters of Wanshan Islands into the National Pearl River Estuary Chinese White Dolphin Nature Reserve as well as upgrading the provincial Chinese White Dolphin Nature Reserve at Taishan Jiangmen to a National Reserve should be examined. These initiatives will further enhance the level of protection rendered to the Chinese White Dolphin species;
- ▶ Hong Kong to consider, when the time is opportune, to suitably extend its marine parks into the waters of the Brothers;
- ▶ Guangdong and Hong Kong authorities to consider the suggestion of setting up a joint research centre on Chinese White Dolphins so as to strengthen the basic ecological research work on the species; and
- ▶ undertaking studies to objectively assess the possible overall adverse impacts arising from the various development projects and economic activities around the waters of Lingding Bay on Chinese White Dolphins; and formulating effective mitigation measures to minimize the risks.



Figure 3-3 Chinese White Dolphin: waters around Lingding Bay and the Pearl River Estuary are not only productive and rich in biodiversity, the water quality is also relatively good with less pollution. Together with the presence of undisturbed natural coastline and a tranquil environment, they provide an ideal setting for the Chinese White Dolphins to thrive.

(c) Carrying out in-depth studies for further cooperation in ecological protection

Taking account of the current and future requirements in protecting the ecological environment in the Greater PRD region, and also the different circumstances in Guangdong, Hong Kong and Macao, it is proposed that the following in-depth studies be carried out for taking forward cooperation in ecological protection:

- ▶ a baseline study looking into regional biodiversity, fill up information gaps and examine the associated protection strategy;
- ▶ a study on management and control strategy for protecting the ecosystems in highly urbanised areas;
- ▶ a study on options for developing regional ecological woodlands; and
- ▶ an investigation on regional eco-tourism resources and associated study on eco-tourism development and management.

2. Undertaking joint measures to improve the water environment of the Pearl River Basin and Estuary

Working along the initial cooperation direction to effectively protect the regional environment

and natural resources, and taking into account the challenges being encountered in protecting water quality in the Greater PRD region, it is proposed that Guangdong, Hong Kong and Macao should jointly embark upon comprehensive water quality management measures for the Pearl River Basin and Estuary. Building on the foundation of collaboration among the three sides, such efforts will aim to resolve prominent water quality issues and to progressively restore the water environment in the region. This will also contribute to the setting up of a long-term water quality management mechanism across administrative boundaries. Proposed initial cooperation initiatives include:

- (a) enhancing water quality management and water pollution control;
- (b) embarking on collaboration on regional water pollution control;
- (c) strengthening cooperation in improving the quality of adjoining waters; and
- (d) improving the regional cooperation mechanism to improve the water quality of the river basins.

(a) Enhancing water quality management and water pollution control

- (i) The three sides to give consideration to jointly formulate water quality management objectives by phases, taking account of the water quality management systems and standards as well as measures being implemented respectively at the three places.
- (ii) Guangdong and Hong Kong to consider jointly drawing up water pollution control targets by phases, taking account of the relevant considerations in (i) above. As water pollution in Macao is mainly caused by external factors, this proposal is not applicable to Macao.

(b) Embarking on collaboration on regional water pollution control

- (i) Strengthening pollution management and control on industrial activities: jointly stepping up management and control efforts to reduce pollution from different local industrial activities, and promoting cleaner production practices to help reduce pollutant discharges and environmental impacts arising from industrial processes.
- (ii) Actively setting up central wastewater treatment facilities at the PRD cities: taking proactive actions to set up such facilities including undertaking the necessary site search, planning and design, and construction works, etc. in order to minimize the impact arising from urban effluent discharge on the regional water environment.
- (iii) Strengthening the development of the supporting works and facilities for water quality control: integrating such works with the new districts development and old districts renewal programmes in the PRD region; strengthening the development of

the sewerage network and enhancing urban wastewater collection rate; and making full use of the treatment capacity and efficiency of central wastewater treatment facilities.

- (iv) Recognising the importance of improving the technology for protecting water quality: developing and promoting some cost-effective, highly adaptable, small and medium-sized centralised wastewater treatment technologies in the PRD region to satisfy the demand for centralized wastewater treatment in villages and towns.
- (v) Increasing the utilization efficiency of water resources as a critical measure for relieving pressure on the water environment: striving to reduce the level of water consumption and wastewater discharge for every unit of production; raising the wastewater re-utilization rate; and lowering water consumption and effluent discharge in some of the places.
- (vi) Strengthening the monitoring mechanism to control water pollution. Initial cooperation proposals include:
 - ▶ setting up a comprehensive monitoring system for taking forward joint cooperation efforts in preventing and tackling water pollution; and
 - ▶ identifying suitable water quality monitoring sites and setting up a joint regional water quality monitoring network. Reference can be drawn from the experience in the establishment and operation of the regional air monitoring network. The proposed network will facilitate timely monitoring and evaluation of the effectiveness of the work on water pollution control.

(c) Strengthening cooperation in improving quality of adjoining waters

- (i) Cooperation in protecting the water environment of Deep Bay. Initial cooperation proposals include:
 - ▶ taking further steps to implement the “Deep Bay (Shenzhen Bay) Water Pollution Control Joint Implementation Programme(Revised version 2007)”. Such measures may include improving urban wastewater discharge interception and central treatment facilities; enhancing polluted sediment treatment in Shenzhen River; strengthening control on industrial wastewater discharges; increasing the scope of reusing treated wastewater; further studying the possibility of reusing treated wastewater to supplement Shenzhen River and helping re-create its neighbouring ecological landscape; and exploring options to increase the environmental carrying capacity of rivers and marine water in the region;

- ▶ Shenzhen and Hong Kong jointly undertaking environmental monitoring for the Shenzhen River and Deep Bay areas, and regularly exchanging the monitoring data; and improving the joint monitoring and information sharing mechanisms; and
 - ▶ in recognition of the importance of ecological conservation, introducing suitable amendments to the “Regional Plans on Protection of the Water Environment in Deep Bay”; and conducting research on management of the ecosystem in Deep Bay so as to provide a scientific basis for implementing long-term management and improvement measures in Deep Bay.
- (ii) Cooperation in protecting the water environment of Mirs Bay. Initial cooperation proposals include:
- ▶ strengthening the management of water environment at Mirs Bay: Shenzhen and Hong Kong should consider setting more stringent water quality objectives and standards to protect the water environment, jointly revising the functional zoning and upgrading the level of water quality protection for Mirs Bay;
 - ▶ giving consideration to jointly setting up a water quality monitoring network so as to closely monitor any changes in the water quality of Mirs Bay;
 - ▶ giving consideration to jointly formulating appropriate development strategies for the Mirs Bay area so as to avoid causing any significant adverse impact on the water quality of Mirs Bay ;
 - ▶ Shenzhen to consider continuing to focus on tourism and port services in the comprehensive development strategy for the Mirs Bay area to ensure a proper balance between economic development and environmental protection;
 - ▶ Hong Kong to consider maintaining as far as possible the current environment status of the Mirs Bay catchment area so as to protect the water quality of Mirs Bay; and
 - ▶ reviewing the “Mirs Bay Water Quality Regional Control Strategy”.
- (iii) Cooperation in protecting the water environment in the Pearl River Estuary. Initial cooperation proposals include:
- ▶ jointly determining a set of more stringent targets for protecting the water environment in the Pearl River Estuary;
 - ▶ giving consideration to the implementation of a comprehensive control and improvement plan for the Pearl River Estuary; drawing up a detailed

implementation plan for controlling and reducing the levels of effluent discharges from agricultural, industrial and urban activities;

- ▶ expediting the setting up of large-scale systems at major ports to collect and treat wastewater, used oil and sludge arising from port-related activities; restricting the scale and location for land reclamation so as to avoid causing significant adverse impacts on the water environment;
- ▶ enhancing further the water monitoring network at the Pearl River Estuary; drawing up a river basin pollution incident response plan, reporting and communication mechanism, as well as a marine pollution emergency response mechanism; closely adhering to the “Pearl River Estuary Regional Maritime Oil Spill Response Cooperative Arrangement” so as to minimize the environmental damages caused by incidents involving oil spillage from vessels; establishing a monitoring system on wastewater discharges from ship building and repairing industries in the Pearl River Estuary to eliminate any discharge of toxic pollutants; and
- ▶ setting up real time online water quality monitoring systems at fresh water intake points in PRD for timely monitoring of drinking water quality.

(d) Improving the regional cooperation mechanism to improve water quality of the river basins

- (i) Strengthening the coordination with provinces in Xijiang river basin and explore the feasibility of planning and coordinating the utilization of water resources of Xijiang. This can help increase the water resources utilization efficiency, and resolve the problems caused by saline water intrusion at Pearl River Estuary. Initial cooperation proposals include:
 - ▶ striving to launch a comprehensive cooperation plan at the national level, which should set out the overall targets for protecting the water environment of Xijiang river basin, distribution of roles and responsibilities, formulation and implementation of pollution control measures, investment arrangements, and cross-boundary coordinating mechanisms. It is intended that through policy steer and facilitation at the national level as well as implementation of various works and control measures in the above cooperation plan, the deterioration in water quality in the Xijiang basin will be reversed;
 - ▶ exploring the feasibility of and possible option for setting up long-term water resource and water environment coordination management mechanism among the six provinces (regions) in the Pearl River basin as well as Hong Kong and Macao; and

- ▶ strengthening water resource management in the Pearl River basin, including the implementation of a centralized water distribution mechanism for all the areas of the river basin during dry seasons so as to safeguard water supply to the cities in the Greater PRD.
- (ii) Progressively exploring the implementation of an ecological compensation mechanism along the Pearl River basin. Initial cooperation proposals include:
- ▶ Guangdong to explore setting up a pilot ecological compensation mechanism to cover the river basin areas within the Province. For this purpose, a topical study on Dongjiang and Xijiang river basin will be carried out to examine the necessary policies, standards, technical methods, participation arrangements, and supervising mechanisms, etc. Suitable river basin areas will be identified for launching the pilot scheme; and further work will be carried out to explore and enhance the sources of funding, the form of compensation and its distribution methods, and the assurance mechanism, etc. Studies and work in this area will facilitate implementation of river basin ecological compensation mechanisms on a wider scale; and
 - ▶ the three sides to consider implementing the river basin ecological compensation system as a possible environmental cooperation item in future. On the basis of the Guangdong Province's pilot scheme, the three sides will examine the possibility of setting up a regional ecological compensation mechanism when ready to do so with a view to creating the necessary conditions for further promoting this policy to the whole Greater PRD region.
- (iii) Embarking on cooperation in protecting regional water environment and emergency response arrangements. Initial cooperation proposals include:
- ▶ carrying out studies on establishing a regional water environment safety assessment mechanism and the associated standards. Objective assessments will be conducted to establish reasonable water environment safety thresholds and a graded environmental emergency response mechanism so as to complete the formulation of "The Greater PRD Regional Cooperation Plan on Protecting Water Environment and Emergency Responses Programme"; and
 - ▶ forming a Regional Water Environmental Safety Task Force comprising the relevant authorities of Guangdong, Hong Kong and Macao to oversee regular water quality monitoring and responses to water pollution incidents in the river basin.
- (iv) Coordinating and taking forward the Datengxia Hydro Electric Project so as to

address the problems of saline water intrusion in the Greater PRD cities. This will also help respond to possible emergency water pollution incidents in the lower stream of the Pearl River.

3. Undertaking enhanced measures to improve air quality in the Greater PRD region

Working along the initial cooperation direction to effectively protect the regional environment and natural resources, and focusing on the challenges being encountered in protecting air quality in the Greater PRD region, it is proposed that Guangdong, Hong Kong and Macao should collaborate and undertake enhanced air quality improvement and control measures. Building on the foundation of collaboration of the three sides, such efforts will aim to resolve prominent regional air pollution problems so as to gradually improve the regional air quality. Such experience will be useful for addressing complex air pollution issues in urbanized areas as well as setting up long-term air quality management mechanisms. Proposed initial cooperation initiatives include:

- (a) taking forward joint management of regional air quality and emission reduction targets;
- (b) embarking on regional cooperation on air emission reduction control;
- (c) enhancing the regional air quality monitoring network;
- (d) exploring opportunities in controlling air pollutant emissions from vessels in the Greater PRD waters; and
- (e) carrying out scientific researches and studies on regional air pollution problems and control measures.

(a) Taking forward joint management of regional air quality and emission reduction targets

- (i) based on the Pearl River Delta Regional Air Quality Management Plan (2002-2010), Guangdong and Hong Kong to undertake a joint study on the arrangements for reducing air pollutant emissions in Hong Kong and the PRD region for 2011-2020 with a view to progressively reducing the emission levels of major air pollutants in Hong Kong and the PRD region to below those of 2010;
- (ii) it is proposed that Macao may build on the joint efforts of Guangdong and Hong Kong at (i) above and contribute to the formulation of a regional air pollutant emission reduction plan that covers the three places, so as to further strengthen the management of regional air quality;

- (iii) further improvements can be introduced to the air quality indicators used in the regional air quality management system to facilitate more comprehensive and better air quality management. It is proposed that the three sides should give consideration to progressively expanding the types of air pollutants included in the current air quality objectives;
- (iv) Hong Kong and Macao to continue to update their local air quality objectives and associated air quality management plan;
- (v) on the basis of the current study being undertaken by Guangdong and Hong Kong on the next stage of work in air pollution control and management and the Pearl River Delta Regional Air Quality Management Plan(2011-2020)which will be completed shortly, it is proposed that the two places should formulate clear air quality management targets for the PRD region; and
- (vi) it is proposed that the regional air pollutant emission inventory should be updated annually.

(b) Embarking on regional cooperation on air emission reduction control

It is proposed that Guangdong, Hong Kong and Macao should further enhance their emission control efforts by taking proactive measures to reduce both the sources and emission levels of air pollutants. Such initiatives can be carried out both locally or jointly by authorities of the three sides to improve regional air quality.

- (i) The following key areas of air emission reduction control are suggested to be carried out by Guangdong, Hong Kong and Macao respectively:
 - PRD region to continue implementing the “Measures for Prevention and Control of Air Pollution in the PRD Region of Guangdong Province” and the “Clean Air Action Plan for the PRD Region of Guangdong Province”; drawing up strategies for controlling and reducing emission levels of major air pollutants; requiring coal-fired/oil-fired power plants to carry out desulfurization, sulfur capture, dust removal and denitrification (also known as de-NO_x); designate fuel restriction areas in administrative regions; phasing out outdated industrial establishments; optimizing energy supply structure; promoting green transportation; and introducing pollution control on seven major air pollution sources (including vehicles and vessels; fuel oil consumption premises; burning of coal; oily fumes activities; dusty activities; and waste incineration);
 - Hong Kong to take on board the phased emission reduction measures recommended in the Final Report of the “Review of the Air Quality Objectives

and Development of a Long Term Air Quality Strategy for Hong Kong - Feasibility Study". Consideration should be given to improving the fuel mix on power generation; developing and utilizing renewable energy; reducing vehicular emissions; strengthening efforts in greening and conservation; and mandating the implementation of the Building Energy Codes and further tightening its standards; and

- ▶ Macao to actively contribute to addressing the regional air pollution problem, including formulation of local air pollution control plan(s); phased implementation of emission reduction measures; as well as carrying out a general survey on air pollution sources; improving its existing emissions inventory; and reducing emissions from major sources such as power generation, commercial and industrial activities and transportation.
- (ii) Emission reduction initiatives to be jointly undertaken by Guangdong, Hong Kong and Macao are proposed to focus on the following areas:
- ▶ progressively adopting fuel and emission standards for motor vehicles and vessels which are more advanced than other places in the Mainland;
 - ▶ conducting a joint survey on air pollution sources with a view to drawing up an emissions inventory with analysis and breakdown on the associated emission sources; and setting up a data and information system on pollution sources; further enhancing the coordination mechanism for regional air quality management; and establishing a forecast and alert system as well as emergency response plan on air pollution incidents; and
 - ▶ riding on the Outline of the Plan for the Reform and Development of the PRD which seeks to promote the development of advanced manufacturing industries and reform and upgrade those traditional manufacturing industries with a competitive edge, and making reference to the latest technologies and management systems adopted in other cities within the country and overseas for handling VOC emission, the three sides should consider preparing and mandating implementation of technical specifications and requirements on cleaner production for reducing VOC emissions from high emission sources in the region (including chimney and fugitive emissions). Furthermore, joint efforts can be undertaken to explore options in regulating the VOC content in different products (including consumer products) and capping their maximum levels. Paints and coatings having high VOC content will be gradually phased out.

(c) Enhancing the regional air quality monitoring network

- (i) Initial cooperation proposals for enhancing the regional air quality monitoring network include:
 - ▶ establishing supersites and a management centre in PRD for the regional monitoring network; setting up an open research base to analyze and study the air pollution mechanistic pathways in the Greater PRD region, which will provide the basis and technical means for drawing up cost-effective strategies for reducing regional air pollution;
 - ▶ setting up additional general monitoring and background stations at places located at the downwind direction of heavily polluted PRD areas, so as to assess the impact of different pollution sources on the regional air quality;
 - ▶ setting up additional city-level general monitoring stations in Macao for inclusion into the regional monitoring network; and
 - ▶ setting up roadside air quality monitoring stations at busy commercial and heavily trafficked districts in PRD.
- (ii) Initial cooperation proposals for enhancing the monitoring parameters of the air quality monitoring network include:
 - ▶ increasing the air monitoring parameters at all city-level monitoring stations to better reflect the air quality of these areas;
 - ▶ adding new air monitoring parameters at regional monitoring stations on top of the existing ones;
 - ▶ including in the supersites the monitoring of other air pollutants on top of those parameters being monitored by regional stations; and
 - ▶ apart from routine air quality monitoring, adding to the roadside monitoring stations other parameters that can represent and reflect the impact of road traffic on the regional air pollution problem apart from routine air quality monitoring.
- (iii) Initial cooperation proposals for further developing air monitoring data sharing mechanism include:
 - ▶ setting up a regional air pollutant information sharing platform which can be built on the basis of the management centre for the supersites network. The platform can help manage air pollutant monitoring data from different cities in the region, as well as serving as the database and information dissemination

centre;

- ▶ improving the information notification mechanism to publish various types of air monitoring data and reports on a regular basis; establishing gradually a comprehensive information dissemination system on regional air quality to allow the three sides to make joint announcements on regional air quality monitoring information; and
- ▶ establishing an effective forecast and alert system on air pollution for the three places.

(d) Exploring opportunities in controlling air pollutant emissions from vessels in the Greater PRD waters

- (i) conducting a joint basic study on controlling air pollution from vessels in the Greater PRD waters by the three sides, including compilation of an emissions inventory on vessels in the Greater PRD waters; and
- (ii) formulating cooperation plans on controlling air pollutant emissions from vessels. Initial cooperation proposals include:
 - ▶ jointly formulating emissions reduction targets for vessels and their fuel standards with a view to further strengthening control of vessel emissions;
 - ▶ restricting emissions from vessels, including NO_x emissions from new vessels which should be in line with the latest development of the engine manufacturing and ship building industries as well as the shipping sector;
 - ▶ examining measures to encourage vehicles entering the port areas to use cleaner fuels with a view to reducing air pollutant emissions in their vicinity;
 - ▶ exploring the possibility of using cleaner energy by providing onshore power supply to cruise vessels and ocean-going vessels berthing at the Greater PRD ports;
 - ▶ considering requiring ocean-going vessels at berth and at anchorage at the Greater PRD ports to use low sulphur fuel or onshore power; and
 - ▶ studying and exploring the establishment of an "Emission Control Area" in Greater PRD waters.

(e) Carrying out scientific researches and studies on regional air pollution problems and control measures

Taking account of the present and future requirements in taking forward efforts to improve

air quality in the Greater PRD region, and also the different circumstances in Guangdong, Hong Kong and Macao, it is proposed that the following researches and studies relating to regional air pollution control should be carried out:

- ▶ a study on the compilation of emission sources and inventory for air pollutant emissions in the Greater PRD region;
- ▶ a study on air pollution mechanistic pathways in the Greater PRD region;
- ▶ a study on regional air pollution monitoring technologies;
- ▶ a study on an ambient air quality forecast system in the Greater PRD region;
- ▶ a study on the application of air pollutant control technologies in the Greater PRD region; and
- ▶ a study on formulating technical guidelines for reducing VOC emissions and drawing up cleaner production procedures for high VOC-emitting industries.

(B) Promoting low-carbon development in the Greater PRD region

To accelerate the pace of economic transformation and to achieve balanced and coordinated economic, social and environmental development in the Greater PRD region, it is proposed that the three sides should join hands in promoting regional low-carbon development. Taking account of the present regional economic foundation as well as cooperation needs of various parties, and leveraging on the unique strengths rendered by cooperation amongst the three governments, it should be possible to establish a low-carbon and circular economy in the region. Low-carbon exemplary areas can be respectively set up at the three places, and together we can be a forerunner in China's quest for transforming its mode of economic development and serve as a model amongst other fast-developing regions in the world in addressing climate change. Proposed initial cooperation initiatives include:

1. establishing a regional low-carbon development cooperation mechanism;
2. enhancing regional cooperation in cleaner production;
3. strengthening regional cooperation in development of environmental industries;
4. developing and applying new energy and renewable energy; and
5. developing clean energy supply and related infrastructure.

1. Establishing a regional low-carbon development cooperation mechanism

(a) Jointly promoting low-carbon development

- (i) It is proposed that the Greater PRD region should be transformed to become a “low-carbon development exemplary region” to combat climate change, setting up low-carbon exemplary areas in major cities and districts. Initial cooperation proposals include:
 - ▶ transforming the Bay Area of the Pearl River Estuary to become a low-carbon development exemplary area within the Greater PRD region. Its demonstration effect will help facilitate the development of other low-carbon cities and communities in the region; and
 - ▶ selecting representative cities in the Greater PRD region (e.g. Hong Kong, Macao, Shenzhen, Zhuhai, Guangzhou, Dongguan) as pilots for promoting low-carbon city development in the Greater PRD region.
- (ii) Furthermore, it is proposed that cooperation in low-carbon development should be incorporated into the existing cooperation frameworks of the three sides.

(b) Establishing a low-carbon economy

Provide policy incentives and resources with a view to upgrading the industrial and economic structure; expediting regional energy conservation and emissions reduction; and progressively establishing a low-carbon economy. Initial cooperation proposals include:

- (i) strengthening policy steer and incentives to promote low carbon trades and industries; carefully containing the expansion of energy-intensive or high-emission industries; and actively encouraging the development of less resource-intensive and low-emission trades and industries, particularly modern services industry, high technology industry and new energy industry, etc;
- (ii) promoting cleaner production: stepping up actions in drawing up energy efficiency standards and cleaner production technical specifications for trades and industries, in particular for industries with high emissions such as power generation, ceramics, cement and oil refinery industries; rigorously implementing energy efficiency and emission reduction monitoring systems; and encouraging different forms of cooperation in cleaner production to speedily raise the level of clean production in the region;
- (iii) stepping up efforts in energy conservation; enhancing energy efficiency; improving energy supply structures; developing new energy, renewable energy as well as waste to energy, including renewable energy generation technologies suitable for use in remote rural areas; and promoting the development of clean energy infrastructure in the region; and

- (iv) actively exploring and facilitating the establishment of a carbon trading market and the associated standards, technical processes and trading mechanisms in the Greater PRD region; establishing a quality services platform with timely provision of information, reliable testing and analysis, certification and accreditation, as well as staff training services, etc.

(c) Promoting low-carbon communities

It is important to widely promote low-carbon consumption and low-carbon lifestyle for bringing about a low-carbon society. Initial cooperation proposals include:

- (i) enhancing public education efforts to promote better understanding by members of the community on the climate change science; and encouraging adoption of green consumption characterized by the principle of “Reduce, Reuse, Recycle and Responsibility” to reduce greenhouse gas emissions;
- (ii) actively promoting low-carbon regional spatial planning; formulating strategies for establishment of low-carbon districts, low-carbon cities and low-carbon communities by adopting a two-pronged approach, i.e. reducing and controlling greenhouse gas emissions as well as increasing green space, and strengthening the adaptation capacity to climate change;
- (iii) developing carbon sinks in the region to combat climate change: preserving regional green space; strengthening protection of natural forests and wetlands; carrying out afforestation and restoration of woodlands, grasslands and wetlands;
- (iv) enhancing buildings energy efficiency: formulating and promoting green building standards; encouraging existing buildings to carry out green and energy improvement works; requiring publicly-funded development projects to implement mandatory energy efficiency measures; pursuing building energy consumption labeling schemes; exploring opportunities in conducting energy audits for large scale public development projects; promoting energy efficiency and reducing emissions at high-rise buildings; promoting a wider use of low-carbon building technologies; and increasing the capacity for constructing low-carbon buildings;
- (v) improving transportation structure and developing green transportation: providing policy incentives, where appropriate, to increase wider usage of public transportation and non-motorized transportation; improving connectivity between different transportation services and raising transport efficiency; gradually tightening the fuel and emission standards for various types of vehicles; promoting the use of new energy vehicles and encouraging energy conservation and emission reduction measures for transportation; and

- (vi) strengthening scientific and technological researches on low-carbon development. These can include research studies on the regional greenhouse gas emissions patterns, their causes and the impact on climate change; technologies for mitigating and adapting to climate change; and background studies to support low-carbon spatial development, such as researches on the impact of land use changes on regional carbon sinks, and spatial planning and design technologies that are suitable for the region.



Figure 3-4 Buildings energy efficiency improvement works conceptual plan: in the Greater PRD region, the levels of energy consumption and carbon emissions at buildings are very substantial. They present major opportunities for low-carbon transformation. Many cities in the region have already set out standards or specifications for enhancing building energy efficiency.

(d) Promoting the Clean Development Mechanism

Promoting further development of the Clean Development Mechanism (CDM) in the Greater PRD region to help reduce greenhouse gas emissions.

2. Enhancing regional cooperation in cleaner production

(a) Deepening cooperation in promoting cleaner production

Further promote the Cleaner Production Partnership Programme (CPPP) and enhance the cooperation mechanisms on regional cleaner production initiatives. Initial cooperation proposals include:

- (i) building on past experience, it is suggested that Guangdong and Hong Kong should continue taking forward the CPPP initiative. Further efforts can be undertaken in compiling and regularly updating the list of environmental technological services providers; establishing an evaluation system on demonstration projects; recognising those enterprises which proactively take part in the programme and actively pursue cleaner production as “Hong Kong-Guangdong Cleaner Production Partners”; and compiling practical guidelines on cleaner production with a view to promoting successful case examples to the trades, etc.;
- (ii) considering the establishment of a Guangdong-Macao cleaner production cooperation mechanism to encourage enterprises to implement cleaner production: expanding the scope of cooperation in cleaner production among Guangdong, Hong Kong and Macao and increasing the level of resources to be allocated for this purpose so as to enable the whole region to play a larger role in this area; actively encouraging Hong Kong-owned and Macao-owned enterprises in Guangdong, as well as operators of large industrial parks in the PRD region to implement cleaner production; encouraging industries with high energy usage and pollution emissions to carry out cleaner production audits and progressively mandating such auditing requirements with a view to achieving energy conservation, emission reduction and enhancing cost-effectiveness; and
- (iii) conducting a study on mechanisms on promoting cleaner production.



Figure 3-5 “Cleaner Production Partnership Programme” demonstration project– energy efficient dyeing tank with thermal insulation: as of end July 2011, the CPPP subsidized 1,469 projects. The Programme, which was jointly launched by Guangdong and Hong Kong, facilitates enterprises to conserve energy, reduce emissions and enhance cost-effectiveness.

(b) Setting up and improving a cleaner production service platform for the three places

It is proposed that the PRD market on cleaner production technology and consultation services can be opened up to both the Hong Kong and Macao services providers; the three sides will consider establishing a mutual recognition mechanism for cleaner production technological services providers; and consideration will be given to introducing appropriate revisions to the funding restrictions of the Guangdong-Hong Kong Technology Cooperation Funding Scheme so as to encourage more scientific research institutes in Guangdong, Hong Kong and Macao to make applications on cross-boundary projects.

3. Strengthening regional cooperation in development of environmental industries

(a) Facilitating development of environmental industries

Improve the cooperation mechanism for promoting environmental industries in the Greater PRD region and jointly develop the market for environmental industries and services. Initial cooperation proposals include:

- ▶ exploring the feasibility of setting up a regional cooperation committee on environmental industries; and establishing an exchange and information sharing system for the industry;
- ▶ strengthening the dialogues and exchanges amongst the three sides on policies and regulations for promoting the development of environmental industries;
- ▶ jointly studying the development of regional eco-conferences and exhibitions; and encouraging the three sides to take turns to organize a “Greater PRD Environmental Industry Technologies Forum” for jointly promoting outstanding environmental technologies and products;
- ▶ organizing regional eco-trade business fairs to facilitate cooperation between enterprises in areas of technology application, capital investment, operation, project bidding, and research and development to jointly develop the environmental market; and
- ▶ setting up regional environmental industry websites and promoting the establishment of e-commerce platforms for environmental industries in the Greater PRD region with a view to enhancing their cooperation.

(b) Fostering cross-boundary cooperation in recycling of reusable materials

Explore new modes for cross-boundary cooperation in recycling of reusable materials, subject to compliance with national legislation and environmental standards. Initial cooperation proposals include:

- (i) building upon the existing legislation and regulatory requirements on environmental and quality control, the three sides to embark on discussions on the technical standards for reprocessing of reusable materials, environmental standards for import control, cross-boundary cooperation procedures, and monitoring systems with a view to establishing the relevant arrangements;
- (ii) carrying out pilot projects to explore the feasibility of a new mode for cross-boundary cooperation in the recycling of reusable materials. Such pilot projects will need to be pursued under the joint supervision of the relevant national authorities and environmental protection authorities of Guangdong/Hong Kong or Guangdong/Macao. Large, reputable recycling enterprises may be selected for undertaking the relevant treatment, reprocessing and reuse processes;
- (iii) Hong Kong and Macao to strengthen the detoxification and reprocessing treatment of reusable materials at the pre-export stage such that these materials will become suitable for recycling and reuse in accordance with the relevant policy requirements; and
- (iv) the three sides to promote research and application of technologies on reprocessing and reuse of reusable materials. This will enhance the overall research capability of the Greater PRD region in technologies relating to the region's circular economy.

4. Developing and applying new energy and renewable energy

(a) Facilitating cooperation in development of new energy industries

It is proposed that the three sides should jointly conduct an assessment on the development potential of new energy industries in the Greater PRD region with a view to identifying important issues and areas for cooperation and coordination; and exploring the possibility of developing a cooperation mechanism for mapping out future cooperation plans and projects.

(b) Adopting measures to promote new energy industries

Explore formulation of measures which are beneficial to the development of new energy and renewable energy industries. Initial cooperation proposals include:

- (i) Guangdong to fully implement the “Renewable Energy Law”, “Energy Conservation Law” and “Guangdong Energy Conservation Ordinance”; expediting amendments to local legislation such as the “Guangdong Electric Power Construction Regulations”; and strengthening policy support for the development and usage of renewable energy;
- (ii) taking account of their own policies on the energy industry and the future energy development direction of the Greater PRD region, Hong Kong and Macao to pursue measures to promote the development of new and renewable energy industries as well as wider application of related products and services; and
- (iii) the three sides to carry out studies on standards for products, technologies and services of the new energy and renewable energy sectors; introducing such standards as soon as possible for enhancing the development of these industries; progressively putting in place the associated certification and labeling systems on products and services of this sector; and striving to participate on a larger scale in drawing up the relevant trade standards.

(c) Providing support to promote new energy and renewable energy industries

Provide more support for the development of new energy and renewable energy industries with a view to enhancing their competitiveness. Initial cooperation proposals include:

- (i) taking into consideration their respective directions for developing new energy, the three sides are to identify the priority areas for development; consider formulating tax concession policies for supporting the development of new energy industries and the related services;
- (ii) encouraging financial institutions to increase the extension of credit to enterprises and projects in the area of new energy, raise the export credit limits for these enterprises and products, and provide loans and credits for their buyers with a view to supporting the trading of new energy products; and
- (iii) encouraging local authorities in the PRD region to provide more support to loan guarantors of new energy industries, in particular to support the latter in increasing their capital-raising scale.

(d) Promoting wider use of low carbon vehicles

Embark upon cooperation in promoting the wider use of new energy and renewable energy products with particular focus on new energy vehicles. Initial cooperation proposals include:

- (i) improving the supporting infrastructure for new energy vehicles, including the planning and setting up of public charging networks, and designating priority parking spaces for new energy vehicles in public carparks;
- (ii) the three sides to join hands and encourage vehicle manufacturers to initiate cooperation with local authorities to promote new energy vehicles;
- (iii) taking Shenzhen, Guangzhou, Hong Kong, and Macao as pilot cities for promoting the production and wider use of new energy vehicles through market mechanisms as well as active cooperation among the three sides; and
- (iv) striving to set up a new energy vehicle production centre at a suitable location in Guangdong; and seeking tax concessions from relevant national authorities on research and development, production and purchase of new energy vehicles.



Figure 3-6 Electric vehicles: following promulgation of various new national policies on supporting the new energy vehicle industry, the pace in commercializing EVs will be accelerated. There will be stronger motivation for the PRD to become a centre for new energy vehicles.

5. Developing clean energy supply and related infrastructure

(a) Improving regional energy supply

To improve the regional energy supply structure, it is proposed that the three sides should jointly commence short to long-term planning on the production and supply of clean energy in the Greater PRD region. Initial cooperation proposals include:

- (i) short-term planning: ensuring stable supply of energy to Hong Kong and Macao; carrying out discussions on pressing projects which require joint development by Guangdong, Hong Kong and Macao, as well as on related issues and management cooperation; and ensuring the stable supply of clean energy such as natural gas and nuclear power, etc. to Hong Kong and Macao in accordance with the agreements reached; and
- (ii) medium and long-term planning: jointly studying the overall demand and development potential of clean energy in the Greater PRD region; and formulating a regional plan for the supply of clean energy and its supporting infrastructure with a view to jointly achieving the long-term goal of sustainable production and supply of clean energy within the region.

(b) Developing clean energy infrastructure

Increasing investment in the development of regional clean energy infrastructure; improving the energy supply network; upgrading the design standard and services quality; and seeking the central government's support for developing the infrastructure for providing clean energy to Hong Kong and Macao, and its agreement to continue with the tax concession arrangement for supplying natural gas to Hong Kong and Macao.

(c) Establishing common infrastructure standards

The three sides to jointly commence research studies, and progressively establish common design and construction standards for clean energy infrastructure and facilities in the region. This will facilitate shared usage and joint management of these infrastructures and facilities.

(C) Taking forward cooperation in culture and livelihood issues in the Greater PRD region

Based on the cooperation direction of improving the provision of public services and addressing livelihood issues in the region, and having regard to the specific needs of people living across boundaries and aspirations about cross-boundary cooperation in the areas of culture and social development, it is proposed that the three sides should build on existing collaboration and jointly cooperate in regional

culture and livelihood issues to, as a key focus, facilitate cross-boundary living of residents of the three sides and to progressively take forward the regional cooperation in such issues in a comprehensive manner. Proposed initial cooperation initiatives include:

1. cross-boundary cultural exchange;
2. cross-boundary cooperation in education;
3. cross-boundary cooperation in social welfare; and
4. cooperation in food safety.

1. Cross-boundary cultural exchange

The Greater PRD is a multi-cultural region. It is proposed that the three sides should strengthen cross-boundary cultural exchange with a view to maintaining their respective cultural characteristics while leveraging on the strengths of each side; and to promote coordinated development of the cultural creative industries in order to jointly creating a cultural image for the Greater PRD region that has significant international impact.

(a) Establishing a pluralistic regional cultural system

With the three places drawing on their respective advantages and encouraging multiple destinations in trips to Greater PRD, it is proposed that the PRD should be transformed into the cultural centre of Southern China; Hong Kong to become an international cultural metropolis; and Macao to be developed as a global centre for leisure and cultural tourism; so as to establish a pluralistic regional cultural system. Initial cooperation proposals include:

- (i) taking forward the implementation of initiatives under the Greater Pearl River Delta Cultural Exchange and Cooperation Development Plan (2009-2013) regarding art programmes, manpower training, development of cultural information network and library resource sharing system, cooperation in the cultural heritage and museum areas, exchanges and cooperation as regards intangible cultural heritage, and cooperation in the cultural creative industries, so as to enrich supply in the regional cultural market;
- (ii) developing the regional culture consumer market: recommending quality arts programmes; organizing outstanding arts groups; holding international/national events on culture exchanges, and using the platforms established under the Greater Pearl River Delta Cultural Cooperation Meeting, Asian Arts Festival, the Pearl River Forum and the Asian Forum of Ministers of Culture as platforms to promote regional culture market; examining the possibility of aligning and coordinating public holidays of the three sides to create a domestic culture market of culture consumption in Southern China; and

- (iii) setting up a tangible culture market/exhibition area: suggest to identify cultural facilities such as the West Kowloon Cultural District in Hong Kong, historic areas of Macao, and distinctive neighborhoods and villages in PRD, etc. for development of tangible culture markets and exhibition areas.



Figure 3–7 Cultural and arts performance: cultural and arts activities are typical examples of knowledge-based industries, which play an important part in upgrading regional industries and contributing to enhancing the quality of life in the region.

(b) Facilitating development of cultural and creative industries

It is important to strengthen the Guangdong-Hong Kong-Macao cooperation in the cultural and creative industries on the basis of accelerating the reform in the PRD cultural industry management system. Initial cooperation proposals include:

- (i) fostering the branding names of cultural and creative industries: improving the institutional setting for developing well-known products and enterprises; focusing on key sectors such as software, comics and animations with a view to achieving breakthroughs; and facilitating the establishment of cultural corporations with core competitive edges and well-known brand names;
- (ii) strengthening protection of intellectual property: encouraging application for patents for cultural and creative products; making use of intellectual property to gain and increase market share; and enhancing protection of intellectual property and monitoring efforts; and

- (iii) improving the investment and financing management system for PRD's cultural and creative industries; introducing market mechanisms into the cultural industries in respect of investment, financing, development, operation and management so as to optimize the market-oriented approach in allocation of resources for the regional cultural industry.

(c) Facilitating regional cultural exchange

Strengthen exchanges and cooperation of cultural departments of the three sides and promoting joint development of culture in the region. Initial cooperation proposals include:

- (i) strengthening cooperation of the three sides in developing the ticketing systems and implementing linked ticket sale through ticket agents, so as to facilitate cross-boundary ticket booking and sale;
- (ii) progressively resolving technical problems such as conversion between traditional and simplified Chinese, translation between English and Chinese, and translation between Portuguese and Chinese, etc.; encouraging cooperation and exchanges between translators and literary professionals; giving recognition to these activities so as to improve the language conversion platform in the region;
- (iii) enhancing cooperation in utilising library resources;
- (iv) promoting multi-cultural folk exchanges and encouraging cooperation between foundations to enhance the cultural ambience in the region and foster regional cultural integration;
- (v) coordinating resources arrangement for protection of historical and cultural heritage; and improving the mechanisms for exchange and cooperation in practical experience and technology development so as to strengthen joint protection and sustainable development of historical and cultural heritage in the region; and
- (vi) drawing on academic conferences and forums as a means to explore effective measures for joint promotion of regional culture, strengthening of the Greater PRD's cultural competitiveness and its international influence, as well as facilitating sustainable cultural development in the Greater PRD region.

2. Cross-boundary cooperation in education

The level of development in education is an important factor in determining the future economic competitiveness and quality of life in the Greater PRD region. Guangdong, Hong Kong and Macao should therefore leverage on the relative advantages of the three places, and focus on cooperation in basic education, higher education and vocational education, as well as national education and related support work with a view to facilitating cross-boundary

education for residents in the region and enhancing substantially the overall education standard of the region.

(a) Promoting cooperation in basic education

Further promote cooperation in basic education on the basis of the present collaboration. Initial cooperation proposals include:

- (i) optimizing the transportation support for cross-border students: continual improvement and promotion of immigration clearance measures, such as provision of designated immigration counters and channels, and facilitating measures for cross-boundary school coaches, etc. to provide a more convenient and safe cross-boundary commute for the students;
- (ii) further enhancing the development of classes for Hong Kong and Macao children studying in Shenzhen: on the basis of the existing school operation system, improving the teaching methods and examination systems to facilitate Hong Kong and Macao children studying in Shenzhen to apply for secondary schools in Hong Kong and Macao respectively; and exploring the opportunities for the provision of such classes at suitable locations in accordance with the actual demand; and
- (iii) exploring the possibility of allowing Mainland students to study in Hong Kong and Macao: examining the possibility of allowing students of the PRD region to pursue studies at senior secondary levels of non-public sector schools in Hong Kong and Macao.

(b) Promoting cooperation in vocational education

Actively promote cooperation in vocational education to upgrade the level of vocational education in the region. Initial cooperation proposals include:

- (i) taking forward cooperation in vocational education and training: establishing a long-term mechanism on continuous teacher training and exchanges among Guangdong, Hong Kong and Macao to promote mutual visits and exchanges; arranging outstanding teachers in Hong Kong or Macao to teach or give talks in the PRD region; exploring new ways to jointly operate vocational training schools and technical schools by the three sides; examining advanced concepts and methods of vocational education and training to promote joint development of vocational education of the three sides; encouraging long-term cooperation between vocational education institutions and enterprises to assist students in seeking opportunities for internship and employment in the three places;
- (ii) initiating cooperation in raising the standard of vocational training service:

strengthening cooperation of the three sides in setting out the standards of vocational training courses; inviting relevant industry experts of the three sides to explore and develop the standard of vocational training courses for modern service industries and advanced manufacturing industries; establishing a system to promote teachers' exchanges and cooperation in vocational training between Guangdong and Hong Kong; and

- (iii) exploring the exchanges and cooperation in assessment of vocational skills; accelerating the study for setting up a mutual recognition model of "One Examination Three Certificates" for human resources assessment.

(c) Deepening cooperation in higher education and research

It is proposed that the three sides should deepen the cooperation in higher education and research. Initial cooperation proposals include:

- (i) introducing new concepts to the higher education management system: exploring the feasibility of introducing new concepts to the higher education management system and scientific research management system; promoting education cooperation among Guangdong, Hong Kong and Macao through cooperation in offering academic programmes and conducting joint researches, etc.;
- (ii) exploring new means of cooperation among enterprises, universities and research institutions: improving the policy on promoting cooperation between enterprises, universities and research institutions of Guangdong, Hong Kong and Macao; exploring the feasibility of setting up an information portal; raising the standard of cross-boundary cooperation projects initiated by universities, research institutions and enterprises of the three sides; seeking the Central Government's support of the three sides on planning, design and approval for major projects; encouraging tertiary institutions to establish stable partnerships with cities and enterprises in the PRD region so as to speed up the application of scientific research outcomes and provide strong technical support for local industrial development; and
- (iii) supporting programme innovation and information portal building: promoting innovative development in curriculum design, tertiary-level management programmes and manpower training of institutions with a view to improving programme arrangement; setting up an information portal for knowledge dissemination and academic exchanges; and pursuing cooperation in higher education programmes and information portal building by the three sides through short-term visits.

(d) Facilitating cooperation in education at various levels

Designating the Lok Ma Chau Loop Area/Hengqin Area as education and scientific research areas for the promotion of cooperation in education at various levels; exploring the feasibility of reserving land in the “Guangdong-Macao Hengqin Cooperation Project Sites” for developing secondary education facilities.

(e) Achieving “lifelong learning” goals

Progressively achieve “lifelong learning” goals by vocational education and adult education; promote cooperation in higher education for adults, self-learning examinations, correspondence courses and TV curriculum; focus on lifelong learning in vocational knowledge and techniques so as to improve competitiveness of manpower in Guangdong, Hong Kong and Macao.

(f) Establishing sister schools

Encouraging the establishment of sister schools with a view to facilitating principal, teacher and student exchanges; taking forward cooperation and exchanges in educational ideologies, teaching designs and educational researches, etc. with a view to achieving a win-win situation for mutual promotion and co-development.

(g) Organizing education and youth activities

Facilitating mutual cooperation among Guangdong, Hong Kong and Macao in provision of facilities, venues and other resources for organizing education and youth activities; and promoting exchanges and mutual sharing of teaching, curriculum and other information.

3. Cross-boundary cooperation in social welfare

On the basis of speeding up social welfare reform of PRD, and focusing on the community efforts of Hong Kong and Macao in setting up social welfare organizations in PRD, as well as facilitating residents of Guangdong, Hong Kong and Macao to enjoy a high quality of life after retirement, the three sides should promote cross-boundary social welfare cooperation and raise the standard of social welfare of the region.

(a) Intensifying the reform of the social welfare system in PRD

Taking forward the social welfare system reform in PRD, and setting up a comprehensive management system for providing society-wide benefits to retirees in both urban and rural areas; accelerating the pace in standardization of the management on provision of society-wide benefits to retirees in PRD; increasing the efficiency and transparency of operation of public elderly homes; actively developing government-supported private elderly homes as well as elderly homes that operate on a commercial basis; and making reference to the advanced mode of operation of elderly homes in Hong Kong and Macao to improve the quality of service of elderly homes in PRD.

(b) Setting up social welfare organizations in PRD

Encourage community efforts of Hong Kong and Macao to set up social welfare organisations in PRD to jointly resolve problems encountered by residents of Hong Kong and Macao pursuing a cross-boundary retirement life. Initial cooperation proposals include:

- (i) considering suitable supporting policy measures in accordance with the relevant commitments under CEPA; further improving the cooperation mechanism; and facilitating the social service providers of Hong Kong and Macao to operate elderly homes and welfare institutions for persons with disabilities in PRD;
- (ii) improving relevant policy measures in the PRD: undertaking studies on formulation and implementation of preferential policies in respect of charges on gas, water and electricity as well as tax payment for welfare and non-profit making elderly homes and welfare institutions for persons with disabilities in the PRD region; examining and reviewing existing land policies to explore the feasibility of allocating land for operating non-profit making private elderly homes and welfare institutions for persons with disabilities, or welfare institutions jointly operated by the public and private sectors; and
- (iii) examining the feasibility of bridging old aged social security for the Hong Kong and Macao elders living in Guangdong, such as examining the feasibility of providing Macao residents living in Guangdong with old aged Comprehensive Social Security Assistance/medical assistance for the elderly, setting up a special fund for these persons with disabilities, as well as establishing medical service stations for them. As regards Hong Kong, the living and consumption patterns of the elders living in the two places may be examined with a view to looking into the feasibility and policy direction of welfare portability, relevant considerations and far-reaching implications to be brought about by policy changes.



Figure 3-8 The Friendly Old Aged Home in Guangzhou: as more and more people choose a cross-boundary retirement life, there is a pressing need to provide quality social services for them.

(c) Facilitating training and exchanges

Encouraging Guangdong, Hong Kong and Macao to carry out training and personnel exchanges in respect of social work and social services; setting up relevant information centre; promoting complementary and co-development of the personnel of the three sides; strengthening the policy research and cooperation in providing social services for the retirees among the three sides and promoting self-management of interest groups organized by retirees and encourage their mutual exchanges.

(d) Setting up a reciprocal recognition mechanism on qualifications

Taking forward the planning and implementation of a Guangdong-Macao cross-boundary reciprocal recognition mechanism on qualifications of social workers and social services sector.

4. Cooperation in food safety

On the basis of accelerating the pace in uplifting the standard of food safety management in the Greater PRD, and focusing on improving exchanges on food safety and contingency mechanisms, it is proposed that the three sides should jointly take forward cross-boundary cooperation in food safety.

(a) Raising food safety standards

Make reference to the safety management mechanism adopted in food supply to Hong Kong and Macao for raising the overall standards of food safety in PRD region. Initial cooperation proposals include:

- (i) improving the monitoring of the entire food production process from planting and culture, production and processing, distribution and sale, through to food consumption, so as to implement a tracing system whereby the place of food manufacturing, source of raw materials, methodology of production and processing, storage and transport conditions are all traceable, and prompt tracing responses can be taken to minimize possible risk arising from toxic and hazardous agents;
- (ii) developing a modeling and certification system for the production processes and management systems of food enterprises that supply food to Hong Kong and Macao with reference to the experience of these food enterprises; and promoting these practices to other food enterprises in Guangdong Province so as to upgrade the development of the food industry in Guangdong Province;
- (iii) taking forward a study on introducing the Hazard Analysis and Critical Control Point (HACCP) system to enterprises supplying food to Hong Kong and Macao; and
- (iv) strengthening publicity, education and public engagement; facilitating development of a food safety system and promoting openness/transparency of food safety management; establishing an effective food safety information system to disseminate results of testing in food markets regularly.

(b) Enhancing the emergency response mechanism

Enhance the exchange and emergency response mechanism on food safety in the Greater PRD. Initial cooperation proposals include:

- (i) improving notification mechanism on food safety: the three sides to closely work together to disseminate scientific information on food safety; promoting mutual trust among the three sides and timely notification about food safety and food contamination incidents in order to provide reference information for the governments of the three sides to make policy decisions;
- (ii) improving mechanism of coordinated investigation on food safety: Guangdong, Hong Kong and Macao to strengthen tripartite communication and notification to effectively combat cross-boundary illegal cases;
- (iii) jointly enhancing capacity in food safety risk management and emergency response: jointly exploring ways for food safety risk monitoring and assessment;

jointly increasing capacity in food safety risk management and emergency response; and enhancing the scientific basis and effectiveness of the monitoring system; and

- (iv) strengthening communication on food safety technology and standards; since the technology and standards adopted by Guangdong, Hong Kong and Macao are different, and the management mechanism on food for domestic supply within the Mainland and food for supply to Hong Kong and Macao are also different, it is necessary to strengthen exchange and communication between the three sides.

(D) Taking forward coordinated spatial development in the Greater PRD region

From the angle of spatial planning, the key constraints to promoting quality living environment are the urban sprawl and proliferation of industries in the PRD and the limited living and development space for people in Hong Kong and Macao. These are affected by their respective geographic conditions. Therefore, spatial planning in the region should focus on transforming the spatial development pattern in PRD and promoting coordinated cross-boundary spatial development.

According to the cooperation proposals of transforming the spatial development pattern and having regard to problems of spatial development of PRD, calls for cross-boundary coordinated development, and the works already carried out by the three sides, it is suggested that the three sides should cooperate to pursue coordinated spatial development in the region. Enhanced spatial planning could help provide a quality living environment and cater for the needs of the residents in the region as well as cross-boundary activities. Proposed initial cooperation initiatives include:

- (a) optimizing the spatial structure of the PRD region; and
- (b) strengthening cross-boundary spatial cooperation.

(a) Optimizing the spatial structure of the PRD region

Guangdong Province to optimize the spatial layout of the PRD region in respect of the planning of protected areas, central business districts, development areas and corridors. The functions and planned provision of various spatial elements should be enhanced. Spatial development of cities and industries in the region should be well planned with a view to establishing a pleasant urban-rural living environment. The overall goal is to provide a spatial environment in Guangdong to “expedite the transformation of the mode of economic development and realize blissful living”.

- (i) Guangdong Province to establish a comprehensive system for protected areas to preserve the ecosystem for achieving quality living and sustainable development. Initial proposals include:

- ▶ fully implementing the spatial management zoning policy formulated in the "Plan for the Coordinated Development of the PRD Townships"⁹; carrying out comprehensive planning of regional green space systems and promote the planning of green space systems in all cities; and speeding up the designation of ecological control lines, including establishing the baseline information for the regional ecosystem to facilitate long-term preservation;
 - ▶ continuing to establish regional greenways in an environmental and eco-friendly manner; enhancing the functions of greenways for integrating natural ecological resources as well as linking up the urban development with natural habitat and improving the integrity of the regional ecosystem; and further enhancing the design of greenways on this basis to perform other leisure and recreational functions;
 - ▶ strengthening ecological enhancement measures and restoration works for compensating the natural habitats damaged by human activities; setting up "special ecological zones" for protecting local habitats and maintaining biodiversity; and maintaining and restoring waterfront areas and wetlands within the protection zones;
 - ▶ local PRD authorities to take into account their own characteristics and carry out surveys on cultural and historical heritage and local cultural landscape resources for the purpose of designating the identified heritage and landscape resources under the system of protected areas; and
 - ▶ carrying out a study on the above basis to formulate the functional components of the protected areas in the region, as well as drawing up the classification and categorization guidelines for such protected areas; gradually building up a regional database on protected areas; and including cultural and heritage baseline data in the system.
- (ii) Enhancing the functions of the public services centres in PRD cities so as to provide more convenient public services for residents and enterprises in Guangdong Province; and make all those public centres as the key drivers for quality living and thriving economy. Initial proposals include:
- ▶ strengthening the functional development of major cities such as Guangzhou, Shenzhen and Zhuhai in the PRD region, particularly their new city centres and secondary centres; establishing industrial estates for speeding up the development of specialized centres at the sub-regional level and enhancing

⁹ "Plan for the Coordinated Development of the PRD Townships" (Chinese version only) <http://www.gdcic.net/GdcicIMS/front/message/ViewMessage.aspx?MessageId=110242>

the functions and network of production service centres so as to provide suitable space for modern service industries and promote the transformation and upgrading of production industries in the region;

- ▶ enhancing the network of public services centres: improving the coverage of public services; and strengthening in particular the development of primary public services centres so as to promote equitable provision of essential public services;
 - ▶ optimizing the functions and planning of various levels of centres so as to enhance the accessibility and vibrancy of these public services centres by providing easy connection to public transport, cycle tracks and pedestrian walkways;
 - ▶ developing “urban complexes” at the city-level as well as sub-city-level centres in major cities within the region by leveraging on the setting up of transportation hubs for intra-city and intercity rail networks and urban renewal works. Such multi-purpose “urban complexes” would provide employment opportunities for residents nearby and promote clustering and radiating effect of industries and services;
 - ▶ pursuing “urban quality improvement actions” in local centres as well as in central areas of towns and streets with a view to promoting clustering and upgrading of local servicing functions and creating orderly spatial forms; and
 - ▶ identifying the size of population to be serviced by the local public service centres and characteristics of their living style. This will allow better provision of services that reflect the actual needs of the local communities.
- (iii) Optimizing the spatial forms of various development areas in PRD region in Guangdong to improve the development standards so as to make them forerunners in transforming the regional economic development and lifestyle. Initial proposals include:
- ▶ improving the spatial forms of intensive urban development areas by using “green belts”, which are part of the protected area systems and will help restrict the development scale and extent of intensive development areas; vigorously encouraging “low impact” land development pattern; and promoting green buildings and green construction process so as to improve the urban micro-climate and raise the degree of comfort at development areas;
 - ▶ taking forward sustainable residential development: taking the local circumstances into consideration, to regulate and guide the development

of various types of residential districts, including “villages in towns” so as to progressively establish a development mechanism catering for diverse residential districts to satisfy the different needs of residents;

- ▶ improving ancillary facilities and services in residential districts, especially in speeding up the restructuring of infrastructure and improving environmental quality for “villages in towns” and old residential areas; and progressively enlarging the coverage of “livable communities”, therefore providing decent public services for all residential districts;
- ▶ promoting the development of “mixed residential districts” which provide different classes of residential housing; promoting communication between residents of different income levels; and introducing appropriate commercial services to residential districts for promoting integration among communities and societies;
- ▶ local authorities should work towards expediting the formulation of land use standards for different trades and industries, and progressively raise the requirement thresholds; phasing out polluting industries that employ low technology and pose adverse visual impact to urban and rural environment; encouraging redevelopment of appropriate industries at higher intensity; carrying forward the improvement and upgrading of industrial land; and accelerating the transformation of economic development through spatial planning policy;
- ▶ enhancing ancillary and amenity facilities in various industrial parks and encouraging a moderate level of mixed commercial and industrial developments. These measures will support enterprises to adapt to new economic developments and switch to emerging industries in a timely manner;
- ▶ encouraging the opening up of “knowledge parks”, such as university cities, science parks, innovative industrial parks, to the community through various measures e.g. planning guidelines, compatible building designs, transport integration, and facilities and venues sharing, etc. This will help enhance the spread of knowledge as well as promote development of an innovative and knowledge-based economy; and
- ▶ implementing the spatial management zoning policy formulated in the “Plan for the Coordinated Development of the PRD Townships” with a view to carefully restricting the spread of urban development; encouraging the development of key industrial areas and regional economic revitalization areas; and speeding up the establishment of a scientific zone on the west coast of the Pearl River.

- (iv) Guangdong Province to speed up development of the PRD regional corridors with transport facilities as the focal points; promoting coordinated development between these corridors, city centres and development areas; and facilitating easy commuting. Initial proposals include:
- ▶ implementing the spatial management zoning policy formulated in the "Plan of the Coordinated Development of the PRD Townships", i.e. respective local planning initiatives should take into account the space requirements for planning regional transport corridors and transport hubs so as to provide space for expediting the development of regional corridors;
 - ▶ implementing the development of the axis system as identified in the "Plan of the Coordinated Development of the PRD Townships"; promoting the development of regional urban areas and industries along major transport corridors such as intercity and urban railways, particularly in respect of the development at transport hubs so as to progressively create a regional spatial structure with rail transport as the backbone under the Transit-Oriented Development (TOD) model; and
 - ▶ setting up various types of pilot TOD new towns, namely, public centre-type, the community living-type and transport hub-type developments, taking into account the development of rail network and planning of urban centres in PRD, key Guangdong-Hong Kong-Macao cross-boundary cooperation areas and intercity rail transport hubs. Binhai New Town of Nansha in Guangzhou, Eastern New Town in Guangzhou, Qianhai and Longhua in Shenzhen and Songshan Lake in Dongguan are proposed as pilot areas to take forward the TOD mode of comprehensive development, which encourage integration of transport and spatial resources, and will increase the agglomeration effects arising from industrial and population concentrations.
- (v) Embarking upon a number of livelihood improvement projects for improving the quality of urban and rural environment in Guangdong Province; and accelerating the improvement of the PRD region's living spatial environment. These will be useful for garnering the necessary experience for building a "blissful Guangdong". The initial proposals include:
- ▶ adopting innovative planning and management measures to guide the improvement of urban and rural environment: improving the planning of urban-rural environment in the city centres, towns and villages by taking account of local conditions; identifying public spaces with natural and historical resources as well as the key issues affecting spatial development; drawing up a forward-

looking and realistic strategy and action lists for guiding the local governments to take action in improving the quality of urban-rural areas;

- ▶ establishing rail transit node: implementing the TOD model by leveraging on the PRD's intercity or city rail network; and encouraging high-density and mixed land uses as exemplars of innovative spatial development based on the development of safe, comfortable and continuous pedestrian systems as well as vibrant and quality public space;
- ▶ for commercial districts: providing a continuous pedestrian system at commercial centres of the towns/districts as the link to improve the environmental quality; taking appropriate measures to create attractive streetscape; making full use of the potential of back-streets space; and enriching commercial, cultural and entertainment activities at such areas to create a cozy and vibrant commercial environment;
- ▶ for traditional communities where resources exist: making full use of historical buildings, traditional structures, and local cultural and natural landscapes for experiencing communal living, enhancing vibrancy of the communities as well as displaying the features of Lingnan (Southern China);
- ▶ for waterfront leisure districts: making full use of the extensive coastline, lakeside, riverside, etc.; setting up waterfront control areas on the basis of water quality improvement and ecological protection efforts; and improving the design of urban waterfront landscape as well as integrating it with greenways and leisure facilities so as to create waterfront leisure districts with Lingnan characteristics;
- ▶ establishing greenway networks: continuing to expedite the planning and construction of greenways; further improving greenways at provincial level, speeding up greenway establishment at city and neighborhood levels; and establishing green living networks with low-carbon and non-motorized systems in suitable areas by connecting the greenway network with urban living space; and
- ▶ taking into account the importance of natural environment, cultural and historical resources, and provision of safe pedestrian networks in carrying out spatial planning in the region, so as to meet the needs of the communities and give the places distinctive characteristics.

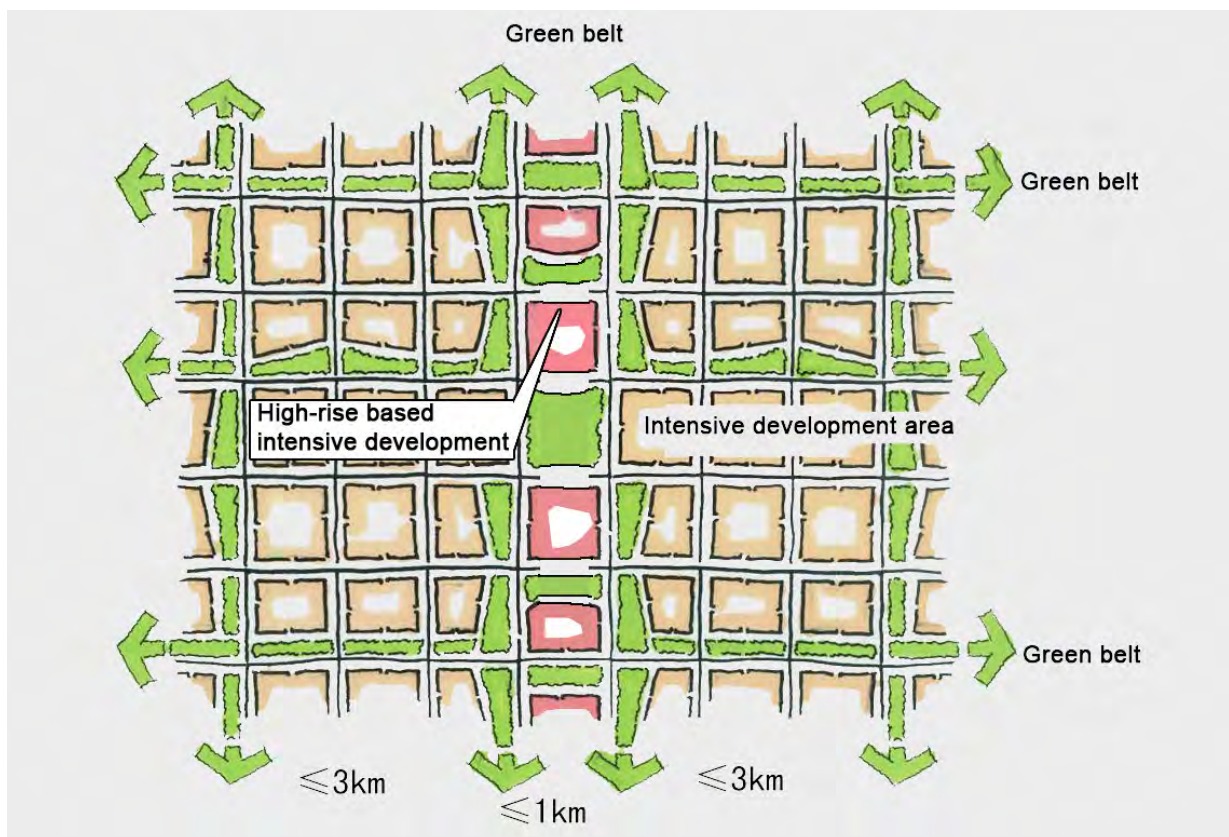


Figure 3-9 A conceptual plan on restricting the scope of intensive urban development: uncontrolled urban sprawl will induce adverse impacts associated with “urbanization”, “Green belts” are an effective means of controlling this problem, and can act as an ecological link between city centres and protected areas in the peripheries.

(b) Strengthening cross-boundary spatial cooperation

On the basis of progressive implementation of the existing cross-boundary spatial cooperation projects, it is suggested that the three sides consider expanding the scope of cross-boundary spatial cooperation between Guangdong and Hong Kong as well as between Guangdong and Macao, so as to continue to facilitate coordinated spatial development of the Greater PRD region.

- (i) Continuing the planning and development of the prioritized cross-boundary cooperation areas i.e. the Lok Ma Chau Loop Area, Qianhai in Shenzhen, Hengqin New District in Zhuhai, and Nansha New District in Guangzhou so as to garner more experience and explore a wider scope of cross-boundary spatial cooperation.
- (ii) Taking on board the outcomes of the “Study on the Action Plan for the Bay Area of the Pearl River Estuary” jointly commissioned by the three governments for considering the development of the Bay Area into a regional centre, traffic hub, ecological core and multi-cultural area as well as an internationally recognized livable area.

- (iii) Considering the conducting of a study on cross-boundary spatial development along two major types of corridors, i.e. railways and greenways in the region. Initial cooperation proposals include:
- ▶ conduct a study on coordinated spatial development in corridors along cross-boundary express railways. This will help promoting development of cross-boundary expressways and traffic corridors to become a convenient and quality living region; and
 - ▶ Guangdong, Hong Kong and Macao to jointly conduct cross-boundary “greenways” studies on linking the greenways on the west and east banks of Pearl River with those in Macao and the country parks in Hong Kong respectively. This will facilitate cross-boundary connections of “greenways” and establishment of cross-boundary ecological corridors, which will help protect the regional ecosystem and bring forth pleasing cross-boundary landscape.
- (iv) Exploring progressive expansion in the scope and coverage of cross-boundary spatial cooperation, with due regard to the respective systems of the three sides; and proactively investigate the feasibility and mode of cooperation of setting up cooperation zones for creative industries, modern services, tourism as well as cross-boundary residential zones. Initial proposals include:
- ▶ cross-boundary joint creative industrial zones: consolidating Hong Kong’s and Macao’s scientific innovation research resources with land resources of PRD so as to enhance the position of the Greater PRD in the country’s development of creative industries; Guangdong, Hong Kong and Macao to jointly commission a study on the Greater PRD region’s scientific innovation resources and demands for creative industries; on this basis, devising mechanisms and policy frameworks to promote cross-boundary innovation cooperation; and promoting and facilitating interested scientific research institutions, industrial parks and enterprises to cooperate in carrying out joint innovation projects through policy support and coordination;
 - ▶ cross-boundary modern services cooperation zones: giving priority to introducing modern service industries in the PRD region and speeding up their cluster development; expanding the development of modern service industries in Hong Kong and Macao; promoting the transformation and upgrading of industries in the region; coordinating the implementation of relevant policies of CEPA; and encouraging the concerned local governments and authorities in PRD to liaise with those in Hong Kong and Macao as well as business sectors

to formulate appropriate measures and cooperation mechanisms for bringing in modern service industries from Hong Kong and Macao;

- ▶ cross-boundary tourism cooperation zones: attracting the tourism trades of Hong Kong and Macao to participate in the development and operation of natural and cultural tourism resources in the PRD region so as to enhance the attractiveness and market competitiveness of tourism industries of the Greater PRD; exploring policy arrangements which would be conducive to such development; and encouraging local governments and tourism sector to liaise with the Hong Kong and Macao tourism trade to foster cooperation in the development and planning of tourism resources; and
 - ▶ cross-boundary residential cooperation zones: considering development of cross-boundary residential cooperation zone at residential clusters in PRD where people from Hong Kong and Macao at present reside. Reference can be made to the advanced management experience of Hong Kong and Macao in social management to attract social services providers of Hong Kong and Macao to operate in PRD, and explore establishment of a cross-boundary social welfare security mechanism. It is suggested that Guangdong, Hong Kong and Macao jointly conduct a survey on the livelihood conditions and needs of Hong Kong and Macao people living in PRD; and consider establishing pilot cross-boundary residential cooperation zones after discussion and consultation with relevant local governments. For this purpose, the governance structure and management framework of the cooperation zone as well as the welfare services to be provided thereat will need to be discussed and agreed upon. Consideration should also be given to encouraging non-government organizations to provide consultation services for the cooperation zone in respect of planning, construction, management and service patterns, and encouraging the relevant sectors of Hong Kong and Macao to provide services and facilities in respect of education, culture, leisure, and elderly services which can suit the needs of the residents.
- (v) Exploring the setting up of pilot area for the Quality Living Area of Guangdong, Hong Kong and Macao: by fostering closer cooperation among Guangdong, Hong Kong and Macao: the Nansha New District in Guangzhou, Qianhai of Shenzhen, Hengqin New District in Zhuhai and other new functional zones can be chosen as pilots for building a quality living area to fully reflect the quality living concept and promote regional cooperation in the areas of environment and ecology, low-carbon development, provision of convenient services, green transport, planning and development, as well as sharing of resources. Initial cooperation proposals include:

- ▶ establishing a comprehensive system of protected areas: conducting baseline surveys and assessment of ecological, historic, cultural and other special landscaping resources and setting up a database system for these protected areas; on the basis of establishing the regional greenways, carrying out landuse planning for the protected areas, e.g. integrating the natural coastlines, water courses, forests, historical streetscapes and local landscape features with the aim of progressively setting up a comprehensive and diversified system of protected areas;
- ▶ formulating a spatial layout for industries that would promote resources recycling and low-carbon development: making better use of spatial planning to promote industrial upgrading, and providing space to optimize service-oriented and knowledge-based industries such as modern services industries, cultural and creative industries and strategic new industries to promote relocation of manufacturing, warehousing and logistics industries to industrial parks and to encourage the setting up of resources and energy recycling systems in these parks; and progressively establishing and raising landuse efficiency, environmental impacts and carbon footprint thresholds, so as to balance industrial development, environmental protection, and quality living;
- ▶ setting up high quality public service centres: strengthening cooperation among Guangdong, Hong Kong and Macao to optimize the environment for developing modern services: promoting agglomeration and development of such services, including finance, communication, exhibition and trade, for building high quality regional production service centres; planning and establishing comprehensive public service centre networks so that residents can enjoy basic public service facilities; raising the planning standards of public service centres; and energizing and enhancing the quality of public spaces to make them more comfortable and attractive;
- ▶ prioritizing the development of a green and people-oriented transportation system: developing a diversified transportation system comprising both intra-city and intercity rail networks as well as other modes of public transport; establishing a safe and comfortable cycling and walking environment, where appropriate, so as to develop a transportation structure of public transport and non-motorized transport; actively promoting energy conservation and emission reduction in the transportation sector; taking the lead in introducing energy-saving and environmentally-friendly or new energy vehicles; and implementing comprehensive transport improvement schemes, traffic calming measures, intelligent traffic management pilot systems so as to create a green transport

environment; and

- ▶ establishing a livable urban and rural environment with intensive utilization of land resources: implementing the TOD development concept; carefully confining urban expansion so that the development is of appropriate intensity with mixed development; building cities intermingling high density development with woodlands, parks and agricultural lands; optimizing spatial planning with a view to minimizing environmental impact; promoting green and energy-saving construction methods; and facilitating coordinated development of new towns and ecological environment. Furthermore, setting up a mechanism to provide different types of housing; raising the standard of infrastructure and ancillary services for different types of residential areas, so as to steadily increase the number of livable communities; and encouraging a diversifying mix of population in neighbourhoods so as to promote social integration.

(E) Facilitating development of green transportation and convenient boundary crossing in the Greater PRD region

To address the need for the development of convenient, green and people-oriented transportation services and to meet the objectives of quality living, it is proposed that the three sides may, by making use of existing mechanisms, consider facilitating the development of coordinated green transportation and convenient boundary crossing in the Greater PRD region to support the building up of a quality living area. Proposed initial cooperation initiatives include:

1. Enhancing regional transportation systems;
2. Promoting energy saving and emissions reduction in transportation system;
3. Promoting sustainable coordinated development of transportation systems; and
4. Providing more convenient cross-boundary transportation services.

1. Enhancing regional transportation systems

Intercity rail networks will form the backbone of the transportation system in the Greater PRD region, which will be supplemented by long distance intercity coach services and other public transport services. The use of private vehicles will be developed in a regulated manner. Priority will be given to developing a multi-level public transportation system. Non-motorized transportation will be encouraged where appropriate; and the use of private cars will be regulated. Different transportation modes will also be made available.

(a) Promoting systematic transport planning

It is proposed that the three sides should promote systematic transport planning. Cities

in the PRD should progressively draw up their planning requirements and standards for transportation, and expedite the compilation of major transport plans.

(b) Facilitating development of rail networks

Promoting the transportation system of the Greater PRD region with railway as the backbone and facilitating the coordinated development of rail networks of Hong Kong, Macao and PRD.

(c) Facilitating development of public transport

Pursue priority policy on development of public transport. Initial cooperation proposals include:

- (i) cities in PRD to further strengthen their own planning on public transportation systems and provision of related infrastructures facilities; formulate public transport services standards and enhance the service quality; direct resources for public transportation systems; support and promote priority development of public transportation system;
- (ii) PRD region to progressively develop public transportation services that serve cities in different administrative regions, and gradually start operating intercity public transportation services;
- (iii) relevant PRD cities to explore development of new modes of transport patterns, such as modern tramway, Bus Rapid Transit (BRT), and enhance the public transportation structure.
- (iv) in line with rail transport development, where appropriate, providing public transport interchange discounts and free bicycle parking for park-and-ride passengers with a view to encouraging the use of public transport and bicycles; and
- (v) Macao to speed up the development of connection system between light rail, bus, and non-motorized transport means with a view to expediting the improvement of the public transport operation mode.



Figure 3-10 Modern tramway: Studies on developing new transport modes such as modern tramway in PRD cities are an effective way to promote public transport and optimize the transportation structure in the region.

(d) Strengthening marine and river transport developments

It is proposed that the three sides should strengthen marine and river transport developments. Initial cooperation proposals include:

- (i) Guangdong-Hong Kong-Macao to carry out a joint study on cross-boundary passenger ferry service development with a view to coordinating the development of initiatives and plans for the marine transportation system, and for promoting marine transportation development in a systematic manner;
- (ii) carrying out research for the purpose of better planning on locations of respective piers along the Pearl River, the seashore, and also on the ferry routes; taking measures to minimize the cost of marine transport and increase its competitiveness so as to make this an important alternative means or a supplement to land transport; and
- (iii) accelerating the main construction works of Macao's Taipa Ferry Terminal; promoting the development of water passenger transport between Macao and adjoining areas.

(e) Facilitating development of non-motorized transport

Plan for a conducive environment for the usage of non-motorized transport, where

appropriate; encourage the usage of non-motorized transportation modes. Initial cooperation proposals include:

- (i) PRD cities to commence topical planning on non-motorized transport between central urban areas and other major areas with a view to strengthening the planning control on non-motorized transport corridors and development of cycling and pedestrian facilities;
- (ii) enhancing the provision of facilities for the linkage of rail transport, land public transport, and the respective supporting facilities with a view to promoting the usage of greenway (i.e. "public transport + cycling track" and "public transport + pedestrian walkway"), where appropriate, for travelling; and
- (iii) attaching great importance to the space and quality of non-motorized transport facilities in PRD cities through the design and construction of the vehicular road systems and planning of city and commercial centres with a view to increasing the comfort level of using the pedestrian walkways, cycling tracks, and leisure paths.

2. Promoting energy saving and emissions reduction in transportation system

Progressively raising the fuel and emission standards of transport vehicles in the Greater PRD region and providing policy incentives and resources for speeding up energy saving and emissions reduction in the transportation system, so as to reduce emissions from transport vehicles.

(a) Raising fuel and emission standards

Progressively raising the fuel and emission standards of vehicles. Initial cooperation proposals include:

- (i) on the basis of the implementation of National IV emission standards on motor vehicles in the PRD region, progressively adopting emission standards for motor vehicles which are more advanced than other places in the Mainland; Hong Kong and Macao to take respective actions with a view to raising their emission standards to the advanced level of international standards;
- (ii) exploring tax concessions for purchasing motor vehicles with high emission standards; improving the management of public transport vehicles and taxis; providing policy support to promote the use and development of environmentally-friendly motor vehicles;
- (iii) expediting the replacement of old public transport vehicles, encouraging the

installation of tailpipe emission reducing devices on goods vehicles and promoting the use of ultra-low sulphur diesel; tightening the frequency and procedures on checking and testing of motor vehicles on high emission vehicle fleets, and strengthening the control and management of emissions of motor vehicles travelling the PRD region from other places etc.; minimizing the emissions from existing motor vehicles; and

- (iv) encouraging the introduction of high quality fuels to ensure that the quality of fuels is in line with the emission standards; striving for supply of more low sulphur diesel and provision of preferential policies for using low-sulphur diesel in the PRD region.

(b) Formulating measures for preventing and controlling pollution from vessels

In light of relevant policies, economy, and technology, etc., formulating specific policies and measures for prevention and control of pollution from vessels to protect coastal environments and the ecosystem.

(c) Reducing emissions from motor vehicles

Through the improvement of transport management, reduce emissions from motor vehicles. Initial cooperation proposals include:

- (i) individual cities may explore the setting up of pilot tests on traffic congestion monitoring/assessment management mechanisms to commence the management of measures on traffic congestion charging, etc.; and
- (ii) individual cities in PRD may investigate the designation of low-carbon emission transportation zones, provision of non-motorized traffic zones and traffic lanes with a view to reducing air pollutant emissions in city centres, cultural and historical sites, and important landscape areas.

3. Promoting sustainable coordinated development of transportation systems

Making use of the existing working mechanisms on coordinating the transportation systems in the Greater PRD region, and continue improving the regional transportation systems so as to promote sustainable development of regional transportation.

(a) Facilitating sustainable development of regional transport

Guangdong, Hong Kong and Macao to strengthen the communication on the planning of regional transportation development and the design and layouts of transport infrastructure. This will help enhance connections between individual transportation infrastructures.

(b) Facilitating connections between transportation modes

Strengthen the communication on the operation of transportation systems, and facilitate the connections between different transportation modes as well as the connections between different districts. Initial cooperation proposals include:

- (i) promoting the transit connection between national railway, intercity railway, and urban railway; strengthening the coordination in planning of major regional transportation corridors; planning transportation hubs as a core to fully utilize the overall effectiveness of the transportation network; and
- (ii) carrying out a transport development strategy study and comprehensive transport coordination planning in the economic circle of Shenzhen – Dongguan – Huizhou, Guangzhou – Foshan – Zhaoqing, and Zhuhai – Zhongshan – Jiangmen; optimizing the layouts for major transportation hubs; strengthening the connections between road networks serving the boundary areas of adjoining cities.

(c) Strengthening connections between transport infrastructures

It is proposed that the three sides should strengthen the connections between transport infrastructures. Initial cooperation proposals include:

- (i) carrying out studies on the coordinated development of multi-modal transportation in airports, rail stations, intercity rail stations, major road transport hubs, ports, boundary control points, major passenger piers, and major goods transportation hubs; and
- (ii) improving the layout design of facilities in the transportation hubs including traveller/pedestrian walkway system, and design of information systems; strengthening coordinated planning and connection of the transport facilities, where appropriate, with the surrounding road networks, public transport facilities and non-motorized traffic systems.

(d) Upgrading transport services

Promote the cooperation of the transport operation and services sectors in order to upgrade the level of transport services. Initial cooperation proposals include:

- (i) taking account of the need for coordinated development in the PRD, neighboring cities in PRD should act to develop intercity public transport services through coordinating local policies with relevant management sectors;
- (ii) fully integrating resources and promoting networked electronic toll systems on PRD highways and further combining toll stations on major highways; extending the

scope of mutual recognition of vehicle tolls annual tickets in the PRD region so as to progressively promote the concept of “One Card for All” in Guangdong Province; and

- (iii) extending the scope of the Electronic Toll Collection (ETC) system and increasing the number of ETC toll lanes, and promote the use of electronic payment cards.

(e) Encouraging development of intelligent transport systems

Enhancing and extending progressively the scope of the Intelligent Transport System (ITS) in the PRD region so as to raise the level of transport management, and promote the continued integration and coordinated development of regional transportation systems in the Greater PRD.



Figure 3-11 A conceptual plan of the design for the internal layout of a multi-modal transportation hub serving as a focal point for different transportation modes. Improving the coordinated designs of various transportation facilities in the hub helps to promote the coordinated development of transportation systems.

4. Providing more convenient cross-boundary transportation services

Guangdong, Hong Kong and Macao to further cooperate in providing more convenient cross-boundary transportation services so as to progressively improve the transportation services in adjoining areas of Guangdong-Hong Kong and Guangdong-Macao.

(a) Cross-boundary transport facilitation policies

Make reference to the cross-boundary transport management experiences of USA, Canada and Mexico, to implement policies facilitating cross-boundary transport. Initial cooperation proposals include:

- (i) underpinned by the “One Country, Two Systems” principle, and taking into account the capacity of the boundary crossing facilities as well as the traffic capacities in Hong Kong and Macao, exploring the progressive relaxation of boundary-crossing restrictions for the people in the Greater PRD region; considering the progressive extension of the “multiple-entry endorsement” policy for residents with household registration in PRD cities for travelling to Hong Kong and Macao; allowing residents with non-household registration ordinarily residing in PRD cities to apply for Individual Visit endorsements locally; considering allowing such residents who meet certain criteria to apply for “multiple-entry endorsements”; further enhancing the boundary-clearance facilitation between Guangdong and Macao; providing the same convenience for residents of PRD cities travelling to Hong Kong/Macao as compared with the residents in Hong Kong and Macao in the longer run;
- (ii) studying the implementation of a simplified boundary crossing clearance process: the respective departments managing boundary control points and immigration/customs clearance to study and explore innovative and effective modes of immigration/customs clearance under the principle of “One Country, Two Systems” and without affecting the position of separate immigration/ customs territories of the three sides;
- (iii) exploring the feasibility of extending the operating hours of boundary control points progressively, taking into account the capacities of boundary crossing and transport facilities, and the demand for transportation services; if necessary, increasing the number of 24-hour land boundary control points, e.g. exploring the feasibility of 24-hour boundary crossing at the Gongbei boundary control point; for Hengqin boundary control point, extending the opening hours till midnight; and
- (iv) considering strengthening the transportation connections between the boundary control points and the urban areas; enhancing as far as possible the services of public transportation for connection with the boundary control points so as to increase the overall effectiveness.

(b) Facilitating development of cross-boundary transportation services

Enhance coordinated development of cross-boundary transportation services for passengers and goods so as to uplift the quality of cross-boundary transportation

services. Initial cooperation proposals include:

- (i) strengthening the communication on cross-boundary transportation services for passengers and goods: Guangdong, Hong Kong and Macao to progressively coordinate the information platform and boundary crossing facilities, boundary checking and quarantine systems; based on the premise of maintaining the position of separate customs territories of the three sides and as independent jurisdictions of taxation and legal protection of privacy, the PRD to examine the possibility of creating an information sharing system with Hong Kong and Macao and the development of a boundary crossing control information mutual reference index and a mutual recognition mechanism; Guangdong, Hong Kong and Macao to explore a joint survey on cross-boundary travel if required; and to explore the development of an information platform for cross-boundary travellers;
- (ii) enhancing and enriching cross-boundary transportation services: speeding up the approval process of applications for cross-boundary helicopter services in Guangzhou, Shenzhen, Jiangmen, Foshan and other cities so as to actively promote helicopter services between Guangdong, Hong Kong and Macao;
- (iii) promoting the inter-operability of the public transportation electronic payment cards in Guangdong, Hong Kong and Macao: striving to implement the inter-operability of existing public transportation electronic payment cards from the three sides; and consider extending the scope of the inter-operability scheme to include the light rail system in Macao; and
- (iv) providing quality and convenient transportation services for cross-boundary travellers in Guangdong, Hong Kong and Macao with the progressive completion of cross-boundary transport infrastructures and relaxation of cross-boundary travel policy; streamlining the arrangement for foreigners travelling to PRD region through Hong Kong or Macao; providing efficient and convenient services including the baggage movement for the travellers in the Greater PRD region.



Figure 3-12 Boundary crossing automation system at a boundary control point: provision of closer and more convenient boundary crossing control facilities and cross-boundary transportation service is an important measure for building a quality living area. There are already requests for the governments to streamline the boundary crossing procedures and make full use of innovative and effective modes of immigration/customs clearance to improve boundary crossing control facilities and services.

IV. The Way Forward

Hong Kong, Macao and Guangdong are governed under different administrative and legal systems. The future implementation of the Plan and utilization of public resources are therefore subject to different policies and measures. The three sides will give consideration to their respective circumstances and systems when taking forward the Plan to be compiled. In respect of the initial cooperation proposals to be proposed under the Plan, the three sides will undertake follow-up studies in accordance with their respective administrative systems and requirements. At the same time, the three sides will respect each other's differences to seek room for tripartite or bilateral cooperation with a view to making contributions to building a quality living area in the Greater PRD region.

Focusing on the vision of building a quality living area, this consultation document puts forth regional cooperation directions to embrace changes and reforms, and suggests cooperation proposals in five key areas that are of concern to the three sides. Under the principle of "One Country, Two Systems", the three sides have different political and economic systems and social circumstances. Therefore, the initiatives to be recommended under the Plan will mainly set out the broad principles and directions. The three governments would take them into consideration when drawing up their respective plans. In considering these proposals, the three sides should take into account their respective systems and social circumstances to map out their own action plans for taking forward the overall goals and cooperation directions of the Plan.

The three sides will leverage on the opportunities opened up by the "Outline of the Twelfth Five-Year Plan for the National Economic and Social Development of the People's Republic of China" (the National Twelfth Five-Year Plan), which gives full support for "expediting the development of the Guangdong-Hong Kong-Macao Quality Living Area", and strive to integrate the initiatives to be recommended under the Plan with the overall national development strategies.

For Hong Kong, we will consider the principles and directions proposed in the study, and map out the necessary measures in accordance with its mode of development and priorities. We will also consult related organizations and parties, including the Legislative Council and members of the public, in accordance with the established procedures. When funding is required for carrying out researches or implementing works projects, approval from the Legislative Council will also be sought.

As for Guangdong Province or the PRD region, they should be allowed to build up a closer cooperation relationship with Hong Kong and Macao with reference to the arrangements under CEPA in the areas of environment and ecology, low-carbon development, culture and social development, spatial planning and green transportation system so as to expand the scope of cooperation for "early and pilot implementation". This will be pursued subject to compliance with the national constitution, legal systems and the Basic Laws of Hong Kong and Macao, and in accordance with the principles of scientific development and reciprocity.

The next steps

The three sides will take into account the public views collected from this consultation for carrying out further studies with a view to completing the compilation of the Plan. As regards the future implementation of the measures and initiatives to be recommended under the Plan, the respective departments or policy bureaux of the three sides will proceed in accordance with established procedures, including the relevant consultation and approval processes. They will also continue to pursue effective coordination on all the relevant issues.

For the implementation of the Plan, the governments of the three sides will fully make use of the existing cooperation mechanisms, which include the Hong Kong-Guangdong, Guangdong-Macao Cooperation Joint Conferences and their various expert groups, to incorporate the cooperation proposals to be recommended under the Plan into the agendas of the relevant expert groups. The three sides will take forward and coordinate the implementation of the Plan taking account of the prevailing circumstances.

V. Respond to this Consultation Document

The cooperation proposals stated in this consultation document will have long-term implications for our environment and economy. We sincerely invite your invaluable comments on these cooperation proposals. Your views will help further enhance the cooperation proposals to be set out in the Plan.

Please forward your comments to the leading bureaux of the three sides by mail, e-mail or fax before the consultation period expires on 30 November 2011. For details, please visit the dedicated website: <http://www.gprd-qla.com>.

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Please note that the governments of the three sides will, either during private or public discussion or in any subsequent report, refer to and attribute views submitted in response to the consultation document. Any request to treat all or part of a response in confidence will be respected, but if no such request is made, it will be assumed that the response is not intended to be confidential.

