

PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

Report of the Parliamentary Delegation to China 2-6 July 2018

House of Representatives Standing Committee on Infrastructure, Transport
and Cities

September 2018
CANBERRA

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ISBN 978-1-74366-873-3 (Printed Version)

ISBN 978-1-74366-874-0 (HTML Version)

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Foreword

In July 2018, a delegation from the House of Representatives Standing Committee on Infrastructure, Transport and Cities visited China. Travelling to four cities in five days, the delegation bore witness to the incredible progress made by China, particularly in the development of cities and transport infrastructure. A number of key lessons arose from the visit, perhaps the most important being that we have much to learn from our biggest trading partner in the planning and development of infrastructure and cities.

One critical lesson from China is the importance and value of integrated planning. All China's infrastructure is planned hand-in-hand with land use. This ensures that infrastructure development supports and is supported by other key economic, social and, increasingly, environmental objectives. Furthermore, it ensures that the uplift in property values created by this integrated development is automatically captured to entirely fund the infrastructure development.

In particular, the development model used by MTR in Hong Kong is directly applicable to Australia, both in retrofitting infrastructure into our cities and the infrastructure required for strategic decentralisation and sustainable growth. MTR provided the delegation with a full briefing of their business model—integrated planning of transport and land use, using comprehensive value capture to fully fund infrastructure development. MTR is already familiar with Australian conditions. They could easily apply their experience and expertise to assist with the development of transport infrastructure within our cities. More importantly, that model could be applied to the development of High Speed Rail in Australia.

China also provides lessons on the development and financing of housing in Australia. Official government policy is directed at ensuring that the housing market favours homebuyers over investors, with much higher equity requirements for investors in purchasing real estate, and restrictions on the amount of property

that can be purchased by individual investors. Planned growth is about housing future generations.

The delegation to China was also an opportunity, in a small way, to enhance China–Australia relations. The delegation received a warm reception at every meeting and had the opportunity to engage in open discussion of issues significant to both nations—a practice that should be encouraged. I would like to personally thank all those who played a part in the organisation and conduct of the visit—our hosts in China and the consular staff who supported us. I would especially like to thank my parliamentary colleagues who, in a spirit of bipartisanship, ensured that the visit was productive and enjoyable.

Mr John Alexander OAM MP

Delegation Leader

Delegation members

Mr John Alexander OAM MP, Member for Bennelong, Chair of the House of Representatives Standing Committee on Infrastructure, Transport and Cities, Delegation Leader

Mr Andrew Giles MP, Member for Scullin

Mr Ted O'Brien MP, Member for Fairfax

Mr Trent Zimmerman MP, Member for North Sydney

Dr Bill Pender, Delegation Secretary

Abbreviations

AO	Officer of the Order of Australia
CBD	central business district
CCDA	China City Development Academy
CCTV	closed-circuit television
CEO	Chief Executive Officer
EKEO	Energising Kowloon East Office
FTA	free trade agreement
HE	Her Excellency
HK	Hong Kong
HSR	high speed rail
LNG	liquefied natural gas
MTR	Mass Transit Rail Corporation Limited
NDRC	National Development and Reform Commission
NGO	non-government organisation
NPC	National People's Congress
PPP	public-private partnership
PSM	Public Service Medal
teu	twenty-foot equivalent unit (shipping container)
TOD	transit oriented development
US	United States of America

WTO

World Trade Organisation

1. Introduction

- 1.1 This report gives an account of the House of Representatives Standing Committee on Infrastructure, Transport and Cities delegation to China on 2–6 July 2018.
- 1.2 Chapter 1 looks at the aims and objectives of the delegation’s visit to China, acknowledges the efforts of the various people who supported or met with the delegation, and provides a summary of the delegation’s principal findings.
- 1.3 Chapters 2–5 contain detailed descriptions of the meetings and site visits held in Beijing, Tianjin, Chengdu and Hong Kong respectively.
- 1.4 Appendix A contains the delegation program.

Aims and objectives

- 1.5 The delegation’s aims and objectives were to gain insight into the development of cities and infrastructure in China and the lessons from that that could be applied in Australia. The delegation was impressed with the scale and speed of development in China’s cities and the high level of coordination and integration of urban planning and infrastructure development at a national, regional and local level, and is of the view that there is much to be learned from China’s approach to urban planning and development.

Acknowledgements

- 1.6 The delegation participated in an intense, productive and highly interesting visit to China. The program was the product of the efforts of staff at the embassy in Beijing and consulates in Chengdu and Hong Kong. During the visit, the delegation was accompanied by embassy and consulate officials at each location, providing the delegation with comprehensive support and impeccable logistical assistance. The delegation greatly appreciates the effort that went into creating such a productive and seamless program. It was a credit to the competence and professionalism of embassy and consulate officials at all levels. In particular, the delegation would like to thank Dr Yin Qian, the Counsellor (Infrastructure) with the Australian Embassy in Beijing, who travelled with the delegation throughout its visit, easing its passage and ensuring everything went smoothly.
- 1.7 The delegation would also like to thank the many people and organisations in Beijing, Tianjin, Chengdu and Hong Kong who took the time to meet with the delegation and discuss matters of mutual interest and benefit. The delegation was met with openness and generosity at all stages.

Overview

- 1.8 Before looking at the aspects of the delegation's visit in more detail it would be worthwhile to begin with a series of general impressions about the development of cities and infrastructure in China. To begin with, everything occurring in China is taking place on a scale that is inconceivable in Australia. The size of their cities, the scale of their infrastructure and the speed of development is an order of magnitude greater than anything happening here. The delegation also notes that China does not operate within the democratic framework of a democracy like Australia. This has significant implications for the way in which planning decisions are implemented. Nonetheless, there are significant lessons for Australia in the Chinese approach to urban development and infrastructure procurement. In China there is a strong emphasis on integrated planning, vertically and horizontally. Planning at all levels of government must integrate with those above, and ultimately with the directions set by the national government. Moreover, all planning of infrastructure is done in the context of broader urban planning—infrastructure development is directly connected to land use. There is a high level of master planning, ensuring that all development fits within a predetermined framework according to agreed priorities. These

priorities are set broadly at a national level and implemented through master planning at the province and city level.

- 1.9 An important part of this is value capture. In mainland China, this is the outcome of government ownership and control of land, which allows the government to draw directly on the return on investment in infrastructure, essentially capturing the full value of any property value uplift. In Hong Kong, the MTR model involves comprehensive value capture under the 'rail and property' model (see Chapter 5). The outcome is rapid and coordinated development of infrastructure and commercial and residential space.
- 1.10 The delegation visited major infrastructure development sites such as the new Beijing airport site at Daxing, the port development in Tianjin, the Rail Port in Chengdu, and the metro system in Chengdu—all of which are testament to the scale and ambition of development in China. There is also an increasing emphasis on technological and design innovation, and green outcomes.
- 1.11 Nonetheless, there was also a strong emphasis on what China could learn from others, including Australia. There are opportunities for Australian companies with specific expertise in urban and transport development to engage with business in China. Likewise, companies such as MTR in Hong Kong and Didi (ridesharing) are already operating in Australia, and on the basis of their successful operation in their home markets have a great deal to offer Australia. MTR is already intimately aware of challenges and opportunities in Melbourne and Sydney for value capture to be employed to fund and operate transport infrastructure, and in particular as a way to fund the eradication of level crossings in Melbourne. They could apply their experience and expertise to fund HSR in the same way. MTR would appear to be a potential partner for government and private investors as a major player for the roll out of rail transport in Australia, sustainably funded by value capture. MTR is interested in pursuing these opportunities. It is the delegation's view that Australian governments and companies must engage more effectively with their Chinese counterparts, exploring opportunities for investment and the transfer of knowledge and experience in a range of sectors.
- 1.12 The subtext of the visit was recognition of the strength and mutual benefits already existing in the relationship between China and Australia, and the strong desire on the part of both for an even greater level of understanding and engagement. Both sides also emphasised the importance of openness and free trade. It is the delegation's view that, given the importance of Sino-

Australian relations, and the part that Chinese trade and investment is likely to play in the future development of Australia, it is important that Australian policy makers have a stronger understanding of Australia's principal trading partner. This understanding can only be gained through direct engagement with and experience of China. It was noted in a briefing to delegation members that in the past four years, nine committee delegations had visited Australia from China, but that in the last five years only three Australian parliamentary delegations had visited China. The delegation therefore believes that more opportunities should be created for Australian parliamentary delegations to visit China, thereby exposing more Members and Senators to the reality of modern China.

2. Beijing, Monday, 2 July 2018

Outline of the Day

- 2.1 The day began with a briefing by HE Jan Adams AO PSM, Australia's Ambassador to the People's Republic of China. The delegation then held a meeting with the National People's Congress Financial and Economic Affairs Committee. This was followed by a meeting with representatives of ride-sharing company Didi Chuxing. The delegation met with representatives of three peak NGOs at a lunch hosted by Elizabeth Peak, Acting Deputy Ambassador. The delegation then met with representatives of the China City Development Academy, before attending a reception hosted by Ambassador Adams.

National People's Congress Financial and Economic Affairs Committee

- 2.2 The first meeting undertaken was with representatives of the National People's Congress Financial and Economic Affairs Committee. Present at the meeting were Xu Shaoshi (Committee Chair), Yin Zhongqing (Committee Vice Chair), Ouyang Chanqiong (Committee Member), Wang Wenyue (Director, General Office), Gong Fanrong (Director, Proposed Law Office), Li Mingzhi (Director, Economic Affairs Office), and Hou Jibin (Deputy Director).
- 2.3 Mr Xu welcomed the delegation to China.

Figure 2.1 Meeting with the NPC Financial and Economic Affairs Committee

The delegation being introduced to Xu Shaoshi, Chair of the Financial and Economic Affairs Committee of the National People's Congress

- 2.4 Mr Alexander highlighted the purpose of the visit. It was, he noted, a celebration of the good diplomatic and trade relations between Australia and China, relations that warranted being taken to a new level. He observed that the delegation was in China to learn about infrastructure and cities, and especially High Speed Rail (HSR). Planning was the key, and China was very successful at planning. Australian had an imbalance of settlement and needed to learn how to rebalance the pattern of settlement. Mr Alexander noted that we would learn from greater engagement. He thanked Mr Xu for his warm welcome
- 2.5 Mr Xu emphasised the strong and growing relationship between Australia and China, highlighting the establishment of diplomatic relations in 1972, the visit of President Xi Jinping to Australia in 2014, the Memorandum of Understanding (October 2011) between the National People's Congress and the Parliament of Australia—which provides for the exchange of visits between the two parliaments—and the visit of the Speaker of the House of

Representatives to China in 2017. Mr Xu emphasised that a friendly relationship serves the interests of both countries and urged the promotion of a friendly and cooperative relationship. He noted the close economic and trade relationship between Australian and China, observing that China was Australia's biggest trading partner.

- 2.6 Mr Xu detailed the rapid expansions of China's transport infrastructure in recent years, highlighting the growth in rail, road, air, and water transport. He observed that China had integrated planning of comprehensive transport networks. He highlighted China's capacity to deliver trains, planes and ships of high quality in quantity, and the massive output of new cars—29 million in 2017. He also highlighted the challenges of introducing new technology—the Internet of Things—into transport systems and the problems inherent in increased use of car transport.
- 2.7 Mr Xu urged cooperation between the two countries in the development of Australian infrastructure. He noted the involvement of Chinese companies in the ports sector and highlighted the capacity of Chinese companies to invest in the rail sector. He saw a great opportunity for cooperation and observed that 'the future is bright'.
- 2.8 In response Mr Alexander observed the strong links that already existed between the two countries and noted the 'breathtaking' achievements of the Chinese Government and people in the development of their infrastructure and cities. He highlighted the strong human bond between China and Australia through the significant Chinese-Australian population and observed that Australian businesses measure their success by how much time they spend in China. He highlighted the infrastructure needs of Australia and the lessons that could be drawn from the 'inspirational' success of China in the development of its infrastructure—especially the 25 000km of HSR built in a little over a decade. Mr Alexander emphasised the need to plan our infrastructure better, by planning it in advance, attaching it to land use, planning holistically and using value capture mechanisms to pay for it. Mr Alexander also highlighted the cultural diversity of Australia, its strong links to China through the Chinese-Australian community, and the opportunities this presented for both countries.
- 2.9 Mr Xu made observations about the delegation's program, highlighting China's achievements in the development of the new Beijing airport, HSR, the development of the ports at Tianjin and Shanghai (which is being redeveloped as a fully automated smart port), and the redevelopment of the

city of Chengdu as an accessible, liveable and attractive city. He noted the importance of PPPs for the financing and operation of infrastructure, observing that they were fast and efficient. He also noted the importance of the integrated development and use of land, especially use of airspace and underground space to reduce costs and maximise outcomes in urban development. He observed that China is still a developing country, especially in its rural hinterland, and welcomed the thoughts and opinions of the delegation on China's future development.

- 2.10 Mr Xu discussed trade developments with the delegation. Both sides highlighted the importance of the China-Australia Free Trade Agreement, and the vital role of free trade to the global economy. Mr Xu noted the impacts of friction between the United States and other countries over trade, urging negotiation and communication rather than conflict. Protectionism was already impacting the international economic recovery. He also noted that while China did not seek a trade war with the United States, it was not afraid of a trade war and would respond to US measures. Mr Xu observed that globalisation was the trend and liberalisation of trade and investment was important.
- 2.11 The delegation highlighted the importance of Chinese investment in Australia and the need for reducing restrictions on trade. Mr Xu noted that China's National Development and Reform Commission had just released a new policy looking at opening up the services sector, reducing those sectors still subject to restrictions. A timetable had been formulated for opening up finance and manufacturing, especially cars. Mr Xu observed that since opening up its economy forty years ago, China had been supporting foreign investment in its industries, gaining knowledge and expertise. He noted that China's first free trade agreements were with Australia and New Zealand, that 98% of investment was already open and subject to simple approvals processes, and that China was preparing for a second tranche of the FTA. He observed that the Port of Darwin was an example of joint China-Australia enterprise and was important to the development of Northern Australia. He noted that other investments had not been approved, with the delegation observing that of 1100 foreign investment applications by Chinese entities in 2017, only two had been rejected.
- 2.12 Mr Xu also commented on progress under the 13th Five Year Plan, observing that it was currently under mid-term review. The review would emphasise a move away from high speed growth towards high quality growth, with an emphasis on 3 Walls—avoiding financial risk; lifting rural

villages out of poverty by 2020; and dealing with pollution (land, air and water). Mr Xu stated that China would be establishing higher goals for the Five Year Plan under the review—it was not just a review of progress. He noted the need to slow growth to meet targets.

- 2.13 The Ambassador, who was also present at the meeting, thanked Mr Xu for the meeting and emphasised the importance of the bilateral relationship between Australia and China. She emphasised Australia's support for free trade and multilateralism and welcomed the continuing liberalisation of trade and investment opportunities and the review of the FTA. She highlighted the importance of the complementarity between the two countries and observed Australia's capacity to help with the 3 Walls—using Australian Liquefied Natural Gas (LNG) for clean energy and access to renewable energy technology and clean coal technology. She emphasised that there needed to be a lowering of size thresholds on financial companies to allow more enterprises to enter the Chinese markets, not just major global institutions. She expressed support for programs to alleviate poverty, highlighting the importance of economic growth, overcoming differences between city and country, and reducing inequality. She highlighted the need for Australia and China to work together for WTO reform. She noted that foreign investment review rejections were rare and involved important concerns. In one case a satisfactory compromise was subsequently negotiated. She also emphasised the strong bipartisan commitment within Australia for an open relationship between Australia and China.
- 2.14 Mr Xu observed that despite some tensions over foreign investment, China was fundamentally optimistic about the relationship with Australia.

Didi Chuxing

- 2.15 The second meeting undertaken was with representatives of Didi Chuxing, a major ridesharing company with investments in Australia. Present at the meeting were, Mr Frank Pang (Vice president), Mr Dillon Ye (General Manager of Australia and New Zealand Region), and Ms Nancy Cheng (Director, Government Affairs).
- 2.16 The meeting focused on the benefits of ridesharing in relieving some of the problems of urban development, principally population, air pollution and congestion. Mr Pang noted that there were six million vehicles in Beijing and restrictions had been placed on vehicle purchase. He noted that China could not afford for everyone to have a car. Smart transportation was the solution.

- 2.17 Mr Ye noted that in China Didi was currently providing 30 million rides per day, had created some 21 million work opportunities, and was working with four thousand small and medium enterprise partners. The foundation of the business was using data and algorithms to match drivers to riders and rides to traffic to reduce rider cost and improve driver income. The key was data. Technology also improved safety through use of risk alerts, panic buttons and safe driving systems which monitor drivers. The system also provided for amber alerts, could utilise emergency equipment, and potentially have vehicles operating as ambulances.

Figure 2.2 Didi Chuxing



The delegation with Mr Frank Pang, Mr Dillon Ye and Ms Nancy Cheng at Didi HQ

- 2.18 Didi used data to work with city governments to improve transport management, including predicting traffic and traffic management. Technology and infrastructure solutions included smart traffic lights, reversible lanes, smart traffic screens, and automated vehicle solutions. Didi was working with vehicle manufacturers on technological solutions to refuelling, auto care, vehicle renting and short-term leasing. Vehicles were

also being customised to ride-sharing in preparation for the introduction of autonomous vehicles.

- 2.19 Didi was a company with global reach, with a focus on investment and involvement in a number of enterprises internationally. It was now working on overseas markets with its own brand and own technology and was looking to expand. Didi was already operating in Australia and was currently testing its product to ensure that the service was compliant with regulation and meeting the needs of the market.
- 2.20 In Melbourne, Didi was operating according to a long-term strategy of gradual and coordinated development. The start point was developing a viable service area centred on Melbourne's CBD and airport, with a focus on regulatory compliance for long-term sustainability. The idea was to start with rideshare, but move to broader traffic management. Didi was working closely with the state Government in Melbourne. Didi was also looking at renewable energy and electric vehicles in the Adelaide and Sydney markets. Didi was looking to enter the Adelaide market with a large electric vehicle fleet, achieving economies of scale. The development of the smart city approach would ultimately extend to autonomous vehicles. Didi was also conducting a long-term project in Geelong involving the testing and development of their systems. It included opportunities for feedback and a 24 hour hotline. Didi had a long-term commitment to the Australian market and was moving towards a smart transportation model. Didi was involved in direct collaboration with Adelaide University.
- 2.21 In discussion with the delegation, Mr Ye noted that smart transport systems were dependent on big data—highlighting the importance of data security and regulation. Didi was working on local solutions to data requirements. Data access and use needed to be clearly defined and regulated. Limits on access and use were important decisions of government and required legislation. He also explained that the customisation of vehicles for ridesharing did not involve the creation of new vehicles but rather the redesign of security features, access, space and luggage capacity of existing designs to meet the requirements of ridesharing.
- 2.22 Mr Ye observed that Didi was ultimately interested in integrated solutions. Integrating of multiple transport modes, including electric vehicles and buses was already part of their long-term planning.
- 2.23 Mr Pang concluded by highlighting the approach that Didi was taking to urban development. It was focussed on city visions and city solutions, a

global company focused on local markets. It was not just about transportation, it was also about technology, with the software as infrastructure.

Smart and Sustainable Cities Lunch meeting

- 2.24 The delegation met with, Barjor Mehta, Lead Urban Specialist, World Bank China Country Office, Qian Guoqiang, Deputy General manager, Sino Carbon, and Fu Xiaotian, China Water Director, World Resources Institute, at a lunchtime meeting to discuss issues around urbanisation, innovation and sustainable development. The lunch was hosted by Elizabeth Peak, Acting Deputy Ambassador. The guests made some specific observations in their fields of expertise before the discussion ranged more broadly over issues of urban development and reform.
- 2.25 Mr Mehta observed that China's development is unique. China had embraced the global shift towards urbanisation and agglomeration, with the creation of mega cities, nineteen of which had been officially sanctioned. He highlighted the Greater Bay Area development in China's south as having particular relevance to Australia.
- 2.26 Mr Mehta observed that HSR between major centres had the tendency to 'hollow out' the middle. The answer was subregional HSR. He indicated that HSR was about the development of land, commenting that the Chinese model leads to the overdevelopment of land. He indicated a preference for the Japanese model. He observed that compact urban development was vital and that urban sprawl should be avoided. He noted that the Japanese model involved private sector development financed through value capture around stations. He also noted that the Japanese were making cities more compact in order to manage the problem of an ageing population, and were undertaking the coordinated planning of social services.
- 2.27 Mr Qian observed that China was seeking to undertake the decarbonisation of the economy with a whole of government commitment to targets. There was a greater emphasis on renewable energy and reducing the proportion of coal powered generation. Regional development was increasingly focused on creating opportunities for new development in provinces relying on old industries. A greater proportion of energy production was coming from LNG.
- 2.28 Ms Fu noted that China is a water stressed country. One third of China, principally in the north, is subject to high water stress (where use exceeds 40% of available surface water). Moreover, some cities have too much water

and are prone to flooding. Water pollution is a critical issue. High levels of waste water treatment are producing large amounts of sludge to landfill. The concept being developed to help combat these problems is the 'sponge city', where excess water is absorbed into the environment and used to recharge aquifers. Cities are planned as floodplains. Water diversions use natural landforms. She noted policies such as Ecological Civilisation and the Water Pollution Prevention and Control Action Plan (the Water Ten Plan) as instances of Chinese government initiatives in environmental management. The Ecological Civilisation initiative represents a long term effort to establish a legal and policy framework that facilitates green, low-carbon and circular development, promote afforestation, and strengthen wetland conservation and restoration. The Water Ten Plan is a comprehensive policy directed at controlling pollution discharge, promoting economic and industrial transformation, and saving and recycling resources; promoting environmental management; and clarifying responsibilities and encouraging public participation.

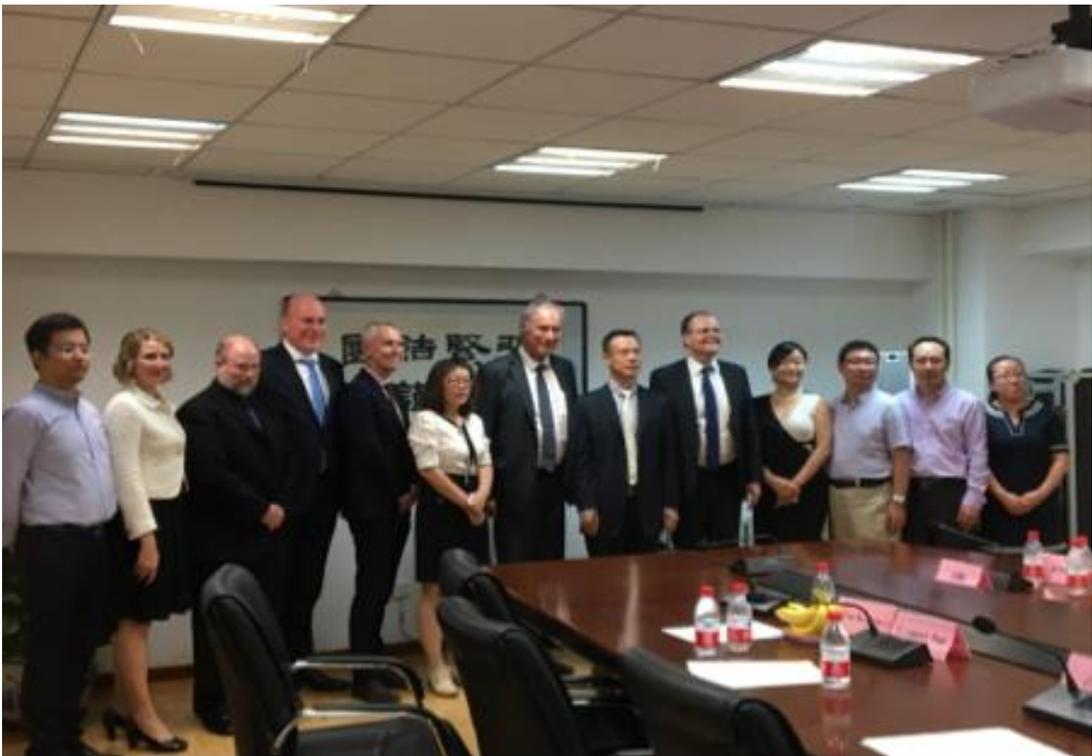
- 2.29 In discussion, Mr Mehta observed that achieving reform is about building consensus and creating a common policy framework. He observed that this was the Chinese approach to development, but that even democracies can build consensus. He gave the example of the New York Regional Plan Association as an example of successful consensus building around urban and regional planning.
- 2.30 Mr Qian noted that government policy in China is not just policy—it is a campaign. The government mobilises the resources of the people and the regions, providing incentives for action.

China City Development Academy

- 2.31 In the afternoon, the delegation met with representatives of the China City Development Academy, a think tank operating under the auspices of the National Development and Reform Commission (NDRC), focussed on urbanisation and smart city research. From the delegation's perspective, the meeting highlighted the common challenges facing planners in China and Australia. The problems and solutions concerning urban and regional development facing both had many common themes, albeit that in China everything is on a much larger scale.
- 2.32 Present at the meeting were Yan Fengtian (Executive Vice Chairman and Secretary General CCDA; Executive President, Planning and Research institute, International Cooperation Centre, NDRC), Liu Guili (Chief

Engineer CCDA; Vice President, Urban and Regional Planning Institute; Vice President, Planning and Research institute, International Cooperation Centre, NDRC), Zhao Xiaosong (Vice Dean, City and Regional Planning Institute CCDA), Shi Yan (Assistant to the President CCDA), Luo Dezhong (Deputy Director, Cooperation Department CCDA), Song Zhihui (Director, Office of City and Regional Planning CCDA), Wang Yuhao (Deputy Director, General office, Planning and Research institute, International Cooperation Centre, NDRC), and Xu Yuxian (Secretary, General Office CCDA).

Figure 2.3 Meeting with the CCDA



The delegation with staff of the China City Development Agency

2.33 In discussions with the delegation, Yan Fengtian, the head of the CCDA, explained the role of the CCDA in the national planning system in China. The CCDA was the national research institution looking at the planning, design and construction of cities and regions, and the gateway institution for the real estate industry in China. The CCDA had 700 technical personal and 120 technicians. The CCDA was originally formed to advise the central government and remained the foremost planning and development think

tank in China. It was responsible for much planning work, with a focus on the sustainable and integrated development of cities and regions. The CCDA was also involved in regional planning, such as the master plan for the Greater Bay Area, encompassing the cities and hinterland of the Pearl River Delta. Liu Guili noted that the CCDA provided services for the central and local governments, and private enterprise, and had an early involvement in projects, providing guidance and design.

- 2.34 Yan Fengtian noted that there had been a mix of success and failures in the development of China's cities and regions. Hard lessons had been learned. He noted, however, that Chinese researchers and planners were able to access knowledge and technology from other parts of the world and that the current generation of planners was now able to focus on modern technology and practice. The CCDA had established the 'gold standard' in research and planning in China. He highlighted the importance of international experience—for example, lessons learned from development successes and failures in Japan. The CCDA was part of the International Economic Exchanges Centre, which provided opportunities for exchange of ideas and methods. Yan Fengtian indicated that the CCDA was keen to attract international expertise to assist in China's development.
- 2.35 Liu Guili discussed trends in regional development including building a cohort of small townships whose development would be focused on local characteristics and industries; reforming rural areas; and making rural areas more attractive to city dwellers—all issues familiar in the Australian context. She also highlighted the development of the Xiong'an New Area, to the southwest of Beijing, which will involve the development of a model city based on modern design principles and smart technology, including the development of smart agriculture.
- 2.36 Luo Dezhong highlighted the importance of technology to the development of China, with an increasing emphasis on smart cities and secure technology based on indigenous and imported technology. The Belt and Road Initiative, China's major global trade initiative centred on the revival of the Silk Road and maritime trade routes, involved the export of mature technology and the export of entire projects and methodologies. It also created a platform for 'Global Thinking'—drawing in global experience and expertise.
- 2.37 Discussion turned to the concept of Mega City Disease—the problems inherent in the development of mega cities. Yan Fengtian noted that Mega City Disease was an acute issue affecting Chinese society, and that many of China's cities were 'ill'. Beijing's population exceeded 35 million, although

Beijing had only 40% of the GDP of Tokyo. Investment had attracted population, but there had been a substantial lag in the development of infrastructure. Fixing the infrastructure deficit was a key to future development. A new airport at Daxing was under construction, and a major expansion of the city Metro was planned—more than doubling the length of track. Under the 13th Five Year Plan, the central government was developing the Xiong'an New Area. The Beijing City Government was looking at moving people out of the city and greening the city centre. Manufacturing had been moved out of the city and tertiary industries were now 80% of the city's domestic product. The increasing importance of domestic consumption and private investment was highlighted; as was the focus on regional solutions. Zhao Xiaosong emphasised the importance of rejuvenating rural areas—creating 'beautiful villages' and stimulating ecotourism. It was important to play to the strengths of localities including improving infrastructure, greening regions, and creating industries to attract population. Yan Fengtian expressed the view that Beijing's traffic problems were complex and required government action at a range of levels to resolve.

- 2.38 Liu Guili discussed the NDRC's regional development plan. The plan had three priorities—industry, environment and transportation. The plan puts Beijing within the context of its region. It proposed to lift the region out of poverty while curing Beijing's problems. The plan involved moving CBD functions out of the city centre and creating a second city centre. No further land was to be made available for development in Beijing. Ten satellite cities were planned, linked to the capital by rail or metro. Small towns in Hebei province would be developed. The satellites would be linked by HSR or metro. The overall plan represented a systematic approach to the different development needs of different localities. The redevelopment of Hebei would involve road and rail connectivity, new airports, the development of factories, logistics and services. Hebei had land for development and significant development needs.
- 2.39 Yan Fengtian highlighted the importance of technological innovation in the thinking of the central government. The Made in China 2015 initiative promoted advanced manufacturing industries which were essential to China's development. He noted that China was still developing technologically.
- 2.40 Shi Yan highlighted the Standards for Piloting Smart Cities project which in 2012–15 involved 290 smart city pilots using a common evaluation process,

although this was found to advantage larger cities over smaller cities.

Twenty five central government agencies were involved in the joint working group. In 2015, a new Smart Cities Program was launched with 100 pilot programs focussed on different city sizes—big, middle and small. Central government investment was provided for 62% of projects, the rest coming from other sources, including private enterprise. The CCDA invited Australian participation.

- 2.41 Yan Fengtian observed the economic and developmental disparities that remained in China. The Pearl River Delta (Guangzhou, Shenzhen, Hong Kong etc.) and the Yangtze River Delta (Shanghai etc.) had advanced economies while many rural and regional areas were still quite backward. Managing this disparity required a coordinated response—it was not just a city or region problem. The central government was anxious to lift living standards in the regions. Experience had taught valuable lessons: private funding follows central government investment; policy mistakes were costly; and the system of policies is more important than individual policies. Development was not the only priority in planning—the aim was systematic planning directed at improving livelihoods.

3. Beijing and Tianjin, Tuesday, 3 July 2018

Outline of the day

- 3.1 The delegation travelled to the New Beijing Airport site at Daxing for a briefing and site visit, before returning to Beijing to meet the HSR to Tianjin. The Committee travelled the 170km between Beijing and Yujiapu (Tianjin) in just over an hour. It then travelled to the headquarters of Tianjin Port for a briefing on the development and operations of the port, before conducting a site visit at East Port. The delegation then travelled to Tianjin airport where it caught a flight to Chengdu.

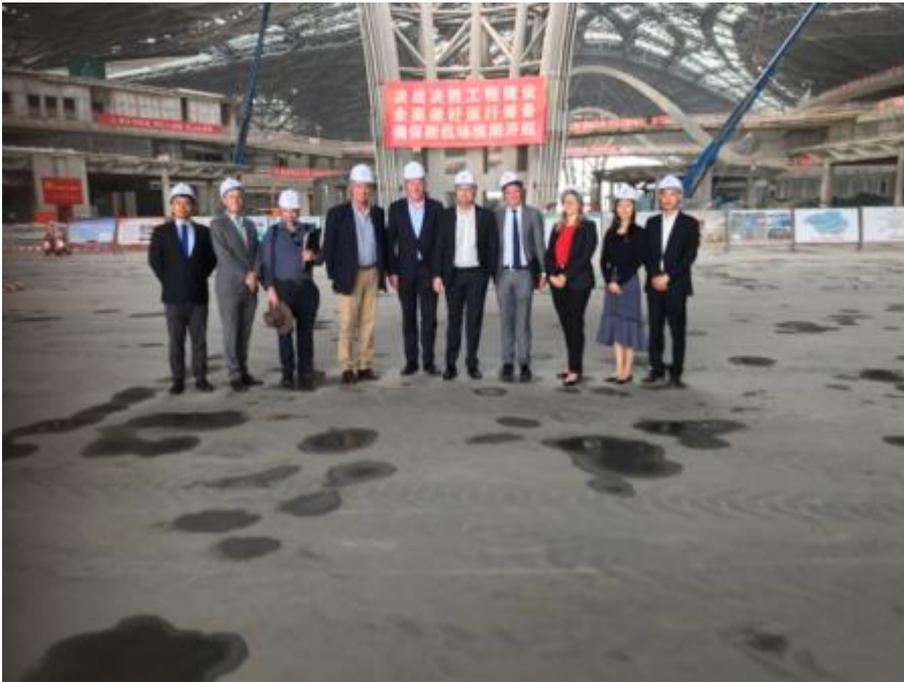
Beijing New Airport, Daxing

- 3.2 The delegation met with staff of the New Beijing Airport Construction Headquarters, led by Mr Wang Qiang of the airport's planning and design department, before visiting the new airport site. Mr Wang delivered a comprehensive overview of the development and its significance to the region.
- 3.3 The new airport is being developed as a new gateway to China. It is the largest integrated transportation project to date. With six runways and serviced by four expressways as well as HSR and Metro connections, it is designed to service 100 million passengers per annum. In addition, the new

airport economic area will allow for intensive development of the airport precinct.

- 3.4 The design of the new airport focusses on innovation. It is shock insulated—a protection from both earthquakes and the seismic impacts of the underground rail network. It has seamless connectivity—with a particular focus on readiness for the 2022 Winter Olympics. It is designed to be smart, green and ‘sponge’. Its goal is to be a 100% green building. It also sits on the largest single concrete slab in China.
- 3.5 The airport is also designed to integrate with the existing Beijing airport as part of a multi airport system servicing a region with a population of 170 million. It is positioned to be a regional hub, and its multi-direction runways are synchronised with the existing airport. Certain airlines will be based at the new airport while others continue to operate through the existing airport. The new airport has a six pier form (six-pointed star), with five piers servicing aircraft from 79 contact stands. The design of the airport ensures that despite its size everything is within a 600m walking distance. Road access will be via a double-deck kerbside, while the airport will be connected to five rail and metro lines.

Figure 3.1 New Beijing Airport, Daxing



The delegation at the centre of the New Beijing Airport terminal.

- 3.6 The new airport project is following an ambitious timetable: terminal and runways complete by December 2018 and first flights in late 2019. Stage One—70 million passengers, 2 million tonnes of cargo and four operational runways—is due by 2025. The ultimate goal is 100 million passengers and 4 million tonnes of cargo through 180 000 air movements on six runways.
- 3.7 The delegation was impressed with the scale of the vision and design of the new airport and the speed with which the development of the airport was being brought into operation. It demonstrated an understanding of the infrastructure and development needs of the region by the Chinese Government, and a capacity and will to implement plans to meet agreed goals.

Figure 3.2 Welcome to Tianjin



The delegation arrives at Tianjin Port HQ

Tianjin Port

- 3.8 The delegation met with staff of the Tianjin Port, led by Mr Yu Houxin, Director of Planning and Construction Development, before visiting the port site. Mr Yu delivered a comprehensive overview of the development of the port and its significance to the region.
- 3.9 The Tianjin port is located in the Tianjin-Binhai New Area, a special economic development zone. It forms the entry point for seaborne cargo to the China-Mongolia-Russia economic passage. It is the world's largest artificial port, and in 2016 had the 5th largest throughput in terms of tonnage (550 million tons) and the 10th largest for containers (14.5 Million teu). It has 176 berths, is capable of taking vessels of up to 300 000 tons, and has a capacity to handle a complete range of cargoes, including containers, coal, oil, iron ore, bulk grain, steel and vehicles, as well as cruise ships. It has relations with 500 international ports in over 180 countries and regions, and services some 52% of China. It forms part of the Tianjin Pilot Free Trade Zone (one of four free trade zones located in coastal China, the others being Shanghai, Fujian and Guangdong; others have subsequently been established in Liaoning, Zhejiang, Henan, Hubei, Shaanxi, Chongqing and Sichuan provinces) and the Belt and Road Initiative. It is the port for the Beijing-Tianjin-Hebei city cluster. It is one of 3 port clusters—Tianjin, Yangtze River and Pearl River clusters. It is envisaged that by 2020, Tianjin Port will reach a container throughput of 17 million teu and a passenger volume exceeding one million. It is expected to become a leading international port providing smart, green and safe services, contributing to the economic development of Tianjin and the surrounding region.
- 3.10 The port is a state owned enterprise operating under the auspices of the local government in Tianjin. It has revenues of some ¥2 billion, assets of ¥120 billion, and provides a profitable environment and services to private companies. It also has social and environmental responsibilities under government policies. Tianjin Port manages twenty-five inland dry ports which are part of the distribution network for goods—providing a platform for one-stop services for businesses inland. The port is a major export outlet for vehicles (1 million units), construction machinery, heavy machinery and steel.

Figure 3.3 Visit to Tianjin Port

Delegation members receiving an on-site briefing at Tianjin Port

- 3.11 The delegation visited East Port within the China (Tianjin) Free Trade Zone, which includes a terminal operation zone (operating 23 cranes with a capacity for 4 million teu), logistics and processing zone, and comprehensive service zone. It also contains a residential area with marina and artificial beach. The East Port is a joint venture with a Singapore company worth ¥6.6 billion, and operates as a concessional foreign-trade only port. It is principally serviced by road transport, but government environmental requirements have directed a modal shift to rail.
- 3.12 The delegation was impressed by the size, capacity and apparent efficiency of the port, as well as the breadth of vision of the concepts underpinning its development and operation.

4. Chengdu, Wednesday & Thursday, 4-5 July 2018

Outline of the days

- 4.1 On 4 July, the delegation travelled to the Qingbaijiang Railway Port for a briefing and site visit. This was followed by an inspection of the Chengdu metro and a meeting with the Chengdu Rail Transport Group. The delegation then met with the Chengdu Urban Planning Bureau. The day concluded with a dinner with Chengdu-based Australian business representatives.
- 4.2 On 5 July, the delegation met with representatives of the Sichuan Provincial People's Congress, before flying to Hong Kong.

Qingbaijiang Railway Port

- 4.3 The delegation held a site visit at the Qingbaijiang Railway Port, followed by a meeting with representatives of the Qingbaijiang District People's Congress, led by Zhang Li, Chairwoman of the Qingbaijiang District People's Congress, and Liu Wendao, Deputy Party Secretary.
- 4.4 The Qingbaijiang Railway Port is an important component of the Belt and Road initiative. Chengdu is the intersection of three of the principal trade routes being developed as part of the initiative—the New Silk Road Economic Belt, the Southern Silk Road Economic Belt and the Yangtze River

Economic Belt (connecting to the 21st Century Maritime Silk Road). It is also an important component of the comprehensive vision for the development of Chengdu, which will grow into the economic centre for western China, becoming a hub for integrated transport, trade and culture. The government is looking to integrate road, air and sea transport into the network, creating a seamless international system, including Australia. Qingbaijiang Railway Port is not competing with other major ports, but is part of an integrated network. Chengdu's size is important to the viability of the rail port—providing a critical mass of consumption and investment potential.

Figure 4.1 Qingbaijiang Rail Port



The delegation being briefed on the development of the Qingbaijiang Rail Port, Chengdu.

4.5 Commencing construction in 2008, the Railway Port was officially approved as an international port in 2015. The first China-Europe block train arrived in Poland in 2016, and the free trade zone surrounding the railway port was officially listed in 2017. The facility provides a world-class international multimodal transportation hub, a cooperation centre for international production, an exhibition centre for international trade and an international supply chain management centre. As well as a container terminal, the port has facilities for the handling of vehicles, meat and grain, and a bonded logistics centre for bonded warehousing, e-commerce, value-added processing and customs clearance.

- 4.6 With streamlined signalling and customs clearances, the Block Trains cover the 9826km journey to Lodz in Poland in 12 days, with six trains travelling from Chengdu every week and five returning, travelling at one-third the time of sea transport and one-eighth of the cost of air transport. The railway port is part of the China (Sichuan) Pilot Free Trade Zone Chengdu Qingbaijiang Railway Port Area.
- 4.7 To date, the cumulative throughput of the railway port has been some 170 000 teu—2.25 million tons of cargo worth some ¥50 billion. Chengdu is the top ranking railway port in China. 2000 block trains have been dispatched so far, carrying forty-one containers each. The port plans to exceed one million teu by 2020 and four million teu by 2030. There are three principle lines operating to the west, Chengdu-Lodz, Chengdu-Moscow and Chengdu-Istanbul, with a range of destinations further afield. Chengdu is also link to maritime trade routes through China's ports in the east.
- 4.8 The Free Trade Zone in Chengdu rail port is operating as a direct analogy to the free trade zones operating in sea ports. Operations are organised internationally across the network to make them seamless. This assists in the financial arrangements around the goods as well. There is collaboration with banks and businesses to make the system run smoothly. The free trade zone is vital to the operation.
- 4.9 The facility includes a cluster of national exhibition halls where countries can display goods. Currently three are in place—France, Italy and the Netherlands—with five more under negotiation. The exhibition halls are not just about enterprises—they are also about promoting countries and cultural exchange. The representatives of the Qingbaijiang District People's Congress expressed a desire for Australia to become involved too.
- 4.10 E-commerce is an increasingly important part of trade and the work of the railway port. There is both direct supplier-consumer trade and purchases from warehouses operating within the bonded zone. E-commerce corporation Alibaba operates from the bonded zone.
- 4.11 At the end of the meeting, Mr Alexander thanked the representatives of the Qingbaijiang District People's Congress for their time. He expressed the delegation's high regard for the planning and design of infrastructure in Chengdu, and China's aspirations to promote trade across the globe.

Chengdu Rail Transport Group

4.12 The delegation visited a construction site for the Chengdu metro, after which the Committee travelled on the metro system to meet with representatives of the Chengdu Rail Transport Group, which is responsible for the design, construction and operation of the metro system in Chengdu. Present at the meeting were, Gou Mingzhong (Deputy Chief Engineer), Zhou Junfeng (Deputy Director, Project Construction Centre, Construction Company), and Sun Qiong (Deputy Director, Passenger Transport Management Division, Operation Company).

Figure 4.2 Building the metro, Chengu



The delegation visiting a construction site for the Chengdu metro.

4.13 Mr Gou introduced the organisation and aspirations of the Chengdu Rail Transport Group. He noted that the Group, which consisted of an operating company and a construction company, was developing a first class comprehensive operation covering transit, construction, logistics and

investment. Its goals are achieving comprehensive operations in 2 years and self-sufficiency in 5 years, operating as a profit-based company.

- 4.14 The plan for the metro system involved the continuing development of a city network based on a system of lines serving two city centres integrated with rail and bus transport. The network will consist of a series of circles and spokes creating a 30-minute city. The first line opened in 2010. There are six lines in operation with 151 stations covering 197km. In addition to the lines already in operation, there are ten lines under construction, extending the network by 350km and employing 50 000 workers. Government regulations support this intensive work program, and regular coordination meetings are held to facilitate works.
- 4.15 Prior to 2011, the network was fully funded by government. Since 2011, alternative funding mechanism have been put in place. Three of the metro lines are PPPs. The network has a throughput of 3.83 million passenger movements per day, comprising fifty per cent of the transport workload.
- 4.16 The Group's future focus is transit oriented development (TOD) with an emphasis on property development and integrating the development of stations with the areas surrounding them.

Chengdu Urban Planning Bureau

- 4.17 The delegation met with staff of the Chengdu Urban Planning Bureau, led by Mr Zheng Zhi, Chief Engineer.
- 4.18 The delegation was introduced to the Chengdu Plan, the goal is to create a sustainable world-class city by 2035. The plan places Chengdu into its historical and geographical context within Sichuan Province, with a focus on preserving heritage as well as achieving modernisation. The plan has six measures or goals:
- Create a city based on its two mountains, two rivers, two ecosystems and six districts.
 - Develop the Longquan Mountain forest garden and develop three green axes in the city.
 - Create a beautiful, liveable garden city, including exploiting the natural features of the extensive waterfront, and developing cultural and sporting precincts.
 - Creating an open city with access to the world. Critical to this is the development of the second airport, logistical capacity and international destinations and rail routes, opening access to global trade.

- Developing better internal transport—creating a 30 minute city—particularly through the development and integration of rail and metro networks.
- Creating a more comfortable and caring city through better public infrastructure.

Figure 4.3 Chengdu Urban Planning Bureau



The delegation receives a briefing on the urban development of Chengdu.

- 4.19 In discussion with the delegation, Mr Zheng noted the common issues facing cities in Australia and China, including legacy issues from past planning practices, infrastructure deficits, housing costs, congestion, the need for integrated transport and infrastructure development, and densification. He highlighted the challenges of geography and population in Chengdu—a population of 23 million sandwiched between two mountains. The solution was to go around the mountains and create a polycentric network of cities in connection with Chongqing to the east—‘progress the east, preserve the west’—in a pattern of development that would also stop compromising ecology. The connections with Chongqing would be through HSR, rapid rail and road. It was possible to travel between Chengdu and Chongqing in one hour by HSR.
- 4.20 Mr Zheng also emphasised the increasing openness to the outside world of Chinese society, at the instigation of the central government, and highlighted the potential contribution of Australia in things like innovation

and openness, advanced manufacturing, services and culture, and collaboration in the development of garden cities.

- 4.21 His colleague Ms Lai had been to Melbourne and been impressed by the gardens and environmental protections in place, and saw the benefits of learning from Melbourne's best practice. Chengdu was focussed on the garden city concept and saw opportunities for collaboration with Australia. Chengdu was aiming to be a people centric city focussing on quality of life. The delegation highlighted the importance of the sister state relationship between Sichuan and Victoria in promoting collaboration.
- 4.22 Mr Zheng agreed with the delegation that there were also opportunities for pursuing sporting contacts with Australia. He observed that implementing the 'cultural city' concept included sports matches. The Olympic sports city project would integrate sport, tourism, culture and business and would include building sporting venues.
- 4.23 Mr Alexander closed by thanking the representatives of the Chengdu urban planning Bureau for their time with the delegation, emphasising the importance of the relationship between Australia and China and the opportunities to build our countries together.

Sichuan Provincial People's Congress

- 4.24 The delegation met with representatives of the Sichuan Provincial People's Congress, led by Hou Xiaochun, Vice Chairman of the Standing Committee, Sichuan Provincial People's Congress.
- 4.25 Mr Hou welcomed the delegation to Sichuan, noting that it was famous as the birthplace of Deng Xiaoping.
- 4.26 Mr Alexander thanked Mr Hou, noting that while it was a long way to travel, the visit had been very worthwhile. He observed that the delegation was impressed by the progress China had made in infrastructure and city building, which was the purpose of the delegation's visit. He observed that the visit was also a celebration of Australia's relationship with China, which was ready to go to another level, and that Australia had much to learn from China in terms of building cities and infrastructure. Other members of the delegation observed their various personal links to China, including the sister state relationship between Sichuan Province and Victoria.
- 4.27 Mr Alexander observed the challenges facing both Australia and China in terms of managing the problems of urbanisation, including 'megacity

disease', the retrofitting of infrastructure, planning and densification, and strategic decentralisation.

- 4.28 Mr Hou observed that these questions were quite forward looking and that they were matters that the government in Sichuan was thinking about. He acknowledged that they still had a lot of catching up to do. He highlighted the One Big Tree concept, with Chengdu as a megacity, but incorporating the development of small and medium cities. He noted that Chengdu was the central city in Sichuan, but that there were seven other cities which must be developed. He highlighted the importance of the road and rail connections with Chongqing and the Yangtze via the HSR and the expressway; and the development of air access through Chengdu's second international airport, creating a regional comprehensive aviation hub for more than 50 million people. He noted that Sichuan had thirty airports. He identified the importance of developing aviation and combined multi-modal transportation. He observed that all these efforts were for the benefit of the people. He considered that more discussion with colleagues and closer relations with Australia were important, suggesting more exchanges and discussions with parliaments and delegations. He wished delegation members best wishes for the next election.
- 4.29 In response, Mr Alexander suggested that Mr Hou come to Australia. He reinforced the strong impressions made of Chengdu's ongoing development, with the second airport, the metro system and HSR. He expressed admiration at China's ability to make decisions, commence work and move forward in a positive way. One valuable lesson in particular was the ability of China to learn from its mistakes and move forward.
- 4.30 Mr Alexander also observed that the establishment of the Australian Consulate in Chengdu was strategically important, building on a foundation of strong and good relations. Mr Hou agreed.

5. Hong Kong, Friday, 6 July 2018

Outline of the day

- 5.1 The delegation met with Dr Raymond So, Undersecretary for the Transport and Housing Bureau in the Hong Kong Government, before meeting with representatives of the Energising Kowloon East Office (EKEO) and the Hong Kong Smart Cities Consortium in East Kowloon. This was followed by a roundtable discussion and lunch with representatives of AustCham Hong Kong and Macau. In the afternoon, the delegation met with MTR before departing for home ports.

Transport and Housing Bureau

- 5.2 The delegation met with Dr Raymond So, Under Secretary for Transport and Housing, and Mr Mark Fu, Political Assistant to the Secretary for Transport and Housing.
- 5.3 The discussion highlighted the importance of infrastructure investment, the importance of integrated planning and the role of government in economic development. It also highlighted the importance of technological innovation and the challenges of retrofitting new technology in developed urban environments.
- 5.4 Dr So advised the delegation that Hong Kong was facing a number of challenges in the provision of infrastructure. The cost of infrastructure was rising rapidly and there were problems with cost overruns. Project exceeding HK\$100 billion were increasingly common. Nonetheless, the

Hong Kong Government has sufficient capital available to directly fund projects without borrowing. The high speed rail lines connecting Hong Kong with the mainland were wholly government funded. On the other hand, the Hong Kong metro (MTR) was financed wholly out of commercial returns on property rights connected to the metro system. MTR, while largely still government owned, operates as a private company and requires a commercial return on investment.

- 5.5 Mr Fu explained that in Hong Kong up to ninety percent of commuters use public transport, with fifty percent travelling on the metro and forty percent using buses. He noted that there were plenty of options, including taxis and minibuses, and that the government actively encouraged the use of public transport. Timetables were tightly controlled and there was a high level of consultation with public transport users. The metro was the backbone of the public transport system. Dr So explained that there was a transport hierarchy in Hong Kong. The metro comes first and everything else conforms to that.
- 5.6 Mr Fu advised the delegation that the new Hong Kong airport was a wholly government-owned operation, but that the investment in the expansion of the airport (HK\$140 billion) was being funded by a mixture of commercial dividends, private sector investment and surcharges, which was a new model of investment for Hong Kong.
- 5.7 Dr So advised that there was considerable new investment in technology to capture transport related data and develop integrated transport applications. He noted, however, that the development of new applications was time consuming and retrofitting technology to infrastructure was difficult and expensive—it had taken three years to develop a single pedestrian access app. Mr Fu also advised that there were difficulties around access to data owned by private companies. Dr So observed that Hong Kong is actively investigating smart city technology, including integrating apps and developing smart lampposts, but these were still in the pilot stage and that the rollout would take time.
- 5.8 Mr Fu noted that there were different apps for different users and that the system was quite complicated. There were more sensors on roads facilitating route selection. Another initiative was smart traffic lights, with the capacity to sense pedestrians. Dr So explained that the aim was to achieve more walkability, so infrastructure, such as footbridges, was being developed to enhance walkability.

- 5.9 In discussion, Dr So highlighted the importance to Hong Kong of the Greater Bay Area development, and the transport links that were being developed between Hong Kong, Macau and the mainland. These included the HSR connection and express road link with the mainland and the Hong Kong-Zhuhai-Macau bridge, which will facilitate commercial traffic between Hong Kong and cities on the other side of the Pearl River Delta.
- 5.10 Dr So and Mr Fu also explained the value capture system used by MTR. The land used by MTR for the metro network is government owned. The government draws revenue from the sale of the development rights in the first instance and, as the major shareholder in MTR, from dividends from MTR's revenue thereafter. Mr Fu explained that changing land use in Hong Kong requires the payment of a premium—that 'land premium' constituted value capture. The delegation notes that other aspects of the value capture system used in the development of the Hong Kong metro were discussed later with MTR (see below).
- 5.11 At the conclusion of the meeting Mr Alexander thanked Dr So and Mr Fu for their time, highlighting the complementarity between Australia and Hong Kong.

Kowloon East Smart City Pilot Area

- 5.12 The delegation visited Kowloon East Smart City Pilot Area and met with representatives of the Energising Kowloon East Office and the Hong Kong Smart Cities Consortium, led by Ms Brenda Au, Head of EKEO.
- 5.13 The Kowloon East Smart City Pilot Area is a redevelopment of the old international airport site and surrounding area, focused on creating a second core business district for Hong Kong—CBD2—incorporating commercial, residential, cultural and green space into a revitalised precinct. The purpose of the redevelopment is to create a connected, sustainable, liveable and diverse precinct with five main focuses:
- walkability and mobility
 - a green CBD
 - a smart city
 - socio-economic vibrancy
 - a spirit of creation.
- 5.14 A range of proof of concept trials for the precinct is underway or planned, including:

- Smart crowd management systems (including use of CCTV, video analytics, real time information to command centre, and real time information to apps and on-site signage)
- Walkability trial (including apps that provide information on sheltered routes, barrier free routes, easy walking, personalised tours, and using government map data on apps)
- Energy efficiency (including obtaining real-time household energy data in an 80 household pilot, and developing behavioural change solutions and energy savings programs)
- Traffic management (including monitoring kerbside loading using visual analytics, reducing illegal parking and dumping of goods)
- Developing multi-purpose lampposts (including IoT capabilities, universal power connections and modular design. Features include lighting, weather sensors, air quality sensors, CCTV, solar panels, electric vehicle charging, Wi-Fi, information displays and spare sensor slots.) 400 smart lampposts are being installed by the Hong Kong Government.
- Smart waste bin systems (using fill sensors on forty bins)
- Real time roadworks information
- Other issues such as double parking and footpath parking.

5.15 Ms Au noted that we need smart technology to create smarter solutions, making cities greener, more liveable and sustainable.

AustCham Roundtable

5.16 The delegation met representatives of the with Australian Chamber of Commerce Hong Kong and Macau (AustCham Hong Kong and Macau) for a lunchtime roundtable discussing issues relevant to relations between China, Hong Kong and Australia.

5.17 Much of the discussion centred on the evolution of the relationship between Hong Kong and mainland China—the opportunities and obstacles in the way of Hong Kong using its unique position in relation to the Chinese mainland. There was concern about cultural obstacles to Hong Kong effectively exploiting its proximity to the mainland—that Hong Kong was struggling to comes to terms with the transition from British to Chinese rule both politically and economically—and that Hong Kong was falling behind the mainland in terms of technological innovation. The lack of alignment in systems was highlighted as a serious and growing problem.

- 5.18 It was observed that the Central Government in Beijing created ‘decisiveness’ — that ‘build it and they will come’ actually worked in China. The significance of the Greater Bay Area concept and massive planned investment in Shenzhen was highlighted.
- 5.19 The success of MTR in developing the Hong Kong metro was also noted — as was MTR’s potential to contribute to the development of public transport in Australia.
- 5.20 It was suggested that as an advanced and sophisticated country, Australia should seize the opportunity to become involved in the Belt and Road Initiative.

Figure 5.1 Victoria Peak, Hong Hong



Delegation members with Ms Wendy Hayden, Trade Commissioner Investment, at the Peak

MTR

- 5.21 In the afternoon, the delegation met with representatives of MTR for a discussion about how MTR operates and the lessons from that for Australia.

Present at the meeting were, Mr Lincoln Leong (MTR's CEO), Dr Jacob Kam (Managing Director, Operations and Mainland Business), Mr David Tang, (Property Director), Ms Margaret Chu, (General Manager, Station Retail) and Mr David Yam, (General Manager, Business Development).

- 5.22 MTR is important to Australia on several levels. It has experience of successfully operating mass transit systems internationally, including in Australia. In its home market it has developed an operating model which allows it to make a commercial return on investments without government subsidies (it actually provides a return on investment to government). It has developed the 'rail and property' model of investment that employs value capture to fund the development and operation of the Hong Kong metro network.
- 5.23 MTR began life as a department of the Hong Kong Government. In 2000, an initial public offering saw 23% of MTR become privately owned, and in 2007, MTR took over operation of the Kowloon-Canton Railway Corporation network, establishing control of the entire railway network in Hong Kong. The network caters for 5.76 million passenger journeys per day. MTR has a high level of profitability (HK\$8.6 billion in 2017; underlying profit of 82%; net profit HK\$500 million after depreciation). Earnings are derived from property and assets (32%), property development (18%), station commercial earnings (37%), international business (9%), and transport operations (4%). This is a key element of the MTR model—operation of the network is only a small part of revenue; most is derived from property development and management and related commercial sources.
- 5.24 The MTR system is an example of transit orientated development (TOD). The 'rail and property' model focusses on high density development around commutable distances—a 500m radius from stations. The rail and property model originated as a funding model focused on the need for capital investment throughout the life of the project. It is a model in which recurrent income pays for ongoing capital expenditure. This enables low fares without resort to government subsidies. It optimises use of valuable land through the use of airspace.
- 5.25 Under the rail and property model, rail projects are assessed in terms of their capital and operating costs over the life of the line. Revenue is estimated and the gap between the two identified. An assessment of development right is then used to fill the funding gap, with a land premium going to the government to pay for this development right. In conjunction with private developers, MTR invests in property development in and above the station

- precinct, creating an ongoing profit stream. The benefits to government include a free transport service, the land premium from lease of land, and an ongoing dividend from MTR's profit (HK\$4 billion per annum).
- 5.26 The rail and property projects are implemented together in a coordinated way creating multiple uses of the same land, with station areas including offices, shopping and residential within the airspace covering the station footprint. This model has generated 13 million square meters of commercial and residential space in about half of MTR's 90 metro stations. MTR has HK\$77 billion of property on its books. MTR derives HK\$6 billion in revenue from commercial assets—property rental and management.
- 5.27 The commercial return on the station and rail infrastructure is significant. It includes revenue from rent of commercial space within station precincts; telecommunications access through rail infrastructure, including tunnels; and advertising—over 46 000 units, including interactive advertising.
- 5.28 In discussions with the delegation, MTR noted that the purpose of their model is revenue, but it is also about the customer experience. The customer base is their most important asset. Communicating with the customer base is also important. They use digital technology to communicate with passengers about optimal timings, routes and interactions with retail assets, including through mobile apps providing real time information.
- 5.29 MTR also emphasised that its operations were not just about railways—MTR builds cities. An example is the rail connections to the new airport, which includes an express line to the airport, and a metro line to the new residential and commercial development at Tung Chung (near the airport). This had allowed for extensive urban redevelopment along the line, including the extension of the CBD, creating new uses for old areas. It is regarded as critical that the airport line has multiple uses. MTR observed that their model is not just about high rise development, but emphasised that some form of development needs to take place in conjunction with transport infrastructure.
- 5.30 MTR noted that it also operates buses, the cable car, intercity rail and heavy rail in addition to the metro network, and is building the HSR link to mainland China. MTR's capabilities includes fully integrated planning, design and build; financing; and operations and maintenance of infrastructure.
- 5.31 MTR outlined its international operations, which includes using the PPP model for the development and operation of the Sydney metro north-west

and the line to mainland China; and operations and maintenance contracts for metro operations in London (the Cross Rail and the Elizabeth Line), Melbourne and Sweden (Stockholm metro). It also manages lines in four major Chinese mainland cities, including employing value capture methods in Shenzhen (just over the border in mainland China).

- 5.32 In conclusion, Mr Leong stressed the importance of the relationship with Australia, of value capture in its various forms, and Australia as a market for MTR.

John Alexander OAM MP

Delegation Leader

13 September 2018

A. Delegation program

Sunday 1 July

- Depart Australia for Beijing

Monday 2 July

- Briefing by HE Jan Adams AO PSM, Australia's Ambassador to the People's Republic of China
- Meeting with the National People's Congress Financial and Economic Affairs Committee
- Meeting with Didi Chuxing
- Smart and Sustainable Cities lunch hosted by Ms Elizabeth Peak, Acting Deputy Ambassador
- Meeting with the China City Development Academy
- Reception hosted by HE Jan Adams AO PSM, Australia's Ambassador to the People's Republic of China

Tuesday 3 July

- Briefing and site visit at the New Beijing Airport site at Daxing
- HSR rail journey between Beijing and Yujiapu (Tianjin)
- Briefing and site visit at Tianjin Port
- Flight to Chengdu

Wednesday 4 July

- Briefing and site visit at the Qingbaijiang Railway Port
- Site visit to the Chengdu metro
- Meeting with the Chengdu Rail Transport Group
- Meeting with the Chengdu Urban Planning Bureau
- Dinner with Chengdu based Australian business representatives

Thursday 5 July

- Meeting with the Sichuan Provincial People's Congress
- Flight to Hong Kong.

Friday 6 July

- Breakfast briefing with Mr Sam Guthrie, A/g Consul General
- Meeting with Hong Kong Transport and Housing Bureau
- Meeting with the Energising Kowloon East Office and the Hong Kong Smart Cities Consortium in East Kowloon
- Lunch with representatives of AustCham
- Meeting with MTR
- Depart Hong Kong for Australia