

PROJECT INFORMATION DOCUMENT (PID)

CONCEPT STAGE

Report No.: PIDC8264

Project Name	China: Tianjin Urban Transport Improvement Project (P148129)
Region	EAST ASIA AND PACIFIC
Country	China
Sector(s)	Urban Transport (98%), Flood protection (2%)
Theme(s)	City-wide Infrastructure and Service Delivery (98%), Water resource management (2%)
Lending Instrument	Investment Project Financing
Project ID	P148129
Borrower(s)	People's Republic of China
Implementing Agency	Tianjin PMO
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	30-Jun-2014
Date PID Approved/ Disclosed	10-Aug-2014
Estimated Date of Appraisal Completion	06-Mar-2015
Estimated Date of Board Approval	02-Jul-2015
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

1. Over the past three decades, rapid economic development in China, supported by steady urbanization, has lifted more than 500 million people out of poverty. Urbanization created a supportive environment for growth with abundant labor, cheap land and good infrastructure. The urbanized population grew from 30 percent in 1996 to 50 percent in 2010. Such urbanization is anticipated to continue for the next two decades with an expected one billion urban residents in China by 2030.

2. While China has avoided some of the common ills of urbanization, notably slums and urban unemployment, its cities are faced with major environmental challenges and social inequities. China's leadership is well aware of these challenges, and has called for a new model of urbanization to support its development goals and address such emerging challenges. Such new model of urbanization requires a different role for the government, with the government playing a supporting

role while letting the market play a decisive role. How China will manage the next wave of urbanization will be an important determinant of the country's success in meeting its evolving development objectives.

3. A program of six priorities emerged from research undertaken in 2013 by the World Bank and the Development Research Center of the State Council, to lay out a path toward efficient, inclusive and sustainable urbanization in China. This program recommended: (i) reforming land management and institutions for more efficient land use; (ii) reforming the hukou system to create a mobile and versatile labor force with equal access to a common standard of services; (iii) placing urban finances on a more sustainable footing, while creating financial discipline for local governments; (iv) reforming urban planning and design to allow for more diverse cities, well connected at the national level and clustered at the local and regional levels; (v) managing environmental pressure through improved green governance; and (vi) improving governance at a local level, considering the use of metropolitan governance structures where appropriate.

4. Tianjin can play a leading role in applying some of those recommendations, as one of the four Municipalities directly under the Central Government and a core growth area in the Beijing, Tianjin, Hebei economic circle. Tianjin is a renowned historic port-city, experiencing rapid growth and urbanization. By the end of 2012, the municipality spread over a total area of 11,946 km², with a total population of 14.13 million. It is developed around two main urban areas. The original city Central Area is about 281 square kilometers, with a population of 5 million, while the second urban area, located in Binhai, is about 304 square kilometers. Tianjin's GDP reached 1,288 billion RMB (US\$ 211.2 billion equivalent) in 2012, or about 3 times the level in 2006. The shares for the first, second, third industries are about 1.4 percent, 52.4 percent, and 46.2 percent. As one of the advanced cities in China, actions taken by Tianjin are closely monitored and emulated by other cities, and its large program of investments and its institutional capacity increase its likelihood of success in implementing reforms.

Sectoral and Institutional Context

5. Urbanization in China has been accompanied by deep changes in the overall travel patterns of urban residents. Cities rapidly spread out as a result of increased real estate cost, incentives for cities to convert rural land to urban land in peri-urban areas, and improved road infrastructure. This was accompanied by rapid motorization with a 25 percent annual growth in private cars (reaching 93 million in 2012 nationwide), increase in distance travelled and a steady decline in the percentage of biking and walking trips.

6. Tianjin has experienced such changes with an increase in car trips at the expense of other modes. By the end of 2012, private car ownership reached 1.9 million, trebling since 2006, and private motorized trips accounted for 15.6 percent of total trips. The bike mode share in Tianjin dropped from 48 percent in 2006 to 33 percent in 2012, a level that remains high compared with other cities in China. This reflects Tianjin's reputation as the "city of bicycles", a name coming from its hosting several large bicycle manufacturers. Walking remains popular as it accounts for 35 percent of trips. The high mode share of NMT in Tianjin is an opportunity for the city to build upon.

7. While private cars have supported socioeconomic development and enhanced mobility at an individual level, they have also brought about a range of adverse economic, environmental and social impacts, including increased traffic congestion, air pollution, fossil fuel consumption, greenhouse gas emissions and road accidents. In Tianjin, congestion has worsened in recent years,

with cars operating at an average speed of 22 kph in 2012 during morning peak hour, a drop of 7 percent compared to 2011. The Beijing-Tianjin-Hebei region experiences heavy pollution with about 66 percent of days with air quality below requisite standards in the second half of 2013 (Ministry of Environmental Protection). Road traffic was responsible for an estimated 16 percent of PM_{2.5} emissions in 2012 and 16 percent of NO_x in 2013, while recent research estimated that the city of Tianjin had a per capita GHG emission comparable to large European cities. Finally, road fatality rates per 10,000 vehicles ranked the highest among advanced Chinese provinces in Tianjin at 5.3, according to the Blue Book of Road Safety in China (2011) compared to 2.1 in Beijing or less than 1 in countries like Australia, Japan, Sweden, Germany or the UK.

8. Urban transport in China faces several challenges: (i) misaligned planning of land use, urban transport and economic development increasing the number of trips required; (ii) uniform urban densities that fail to reflect the availability of mass transit and reduce the use of mass transit; (iii) lack of integration between buses and mass transit reducing the effectiveness of the public transport system; (iv) street space allocated mostly to cars and large intersections discouraging public transport, walking and biking and increasing the risk of accidents; (v) unsafe or inconvenient last mile access for NMT around mass transit systems; and (vi) limited facilities for bike parking deterring their use. Most of these challenges arise from a lack of focus on end users and a lack of coordination across agencies and institutes when formulating policies, planning infrastructure and services, regulating services, developing and maintaining infrastructure and operating urban transport services.

9. Tianjin's public transport development is not matching the pace of its urban development, as shown by its relatively low mode share of 16.9 percent (4.3 million rides per day) across all modes in 2012, compared to Beijing (about 32.3 percent). A survey of users carried out for the project identified the quality of transfers, the limited safe space for bikes or poor transfer and connections between bus and metro stations, as primary causes. Tianjin Bus Company operates more than 390 bus routes in the urban area, with more than 8,000 buses and 6,000 stops, while Binhai District Bus Company only services the Binhai District with 62 routes and 1630 buses. But most buses operate in mixed traffic with a low average speed of only 15 kph. While a number of bus priority lanes with marking have been put in place, in the absence of systematic enforcement, their effectiveness has been only partial. Tianjin four metro lines, with a total length of 130 km, are underutilized. Metro rail daily ridership was only 0.8 million in 2013, only 1/13 of Beijing and 1/10 of Shanghai, while Tianjin metro rail length is between 1/3.5 and 1/4 of that of Beijing or Shanghai. This indicates an opportunity to leverage on past investments by attracting additional ridership.

10. In recent years, the national government and many cities have engaged in a strategic shift in their urban transport investments towards public transport and NMT, two modes which better address the need of lower income groups for affordable mobility and accessibility. To support greener mobility and promote more inclusive development, the China State Council adopted public transport as a national policy priority, through a directive on the Prioritization of Urban Public Transport Development dated December 29, 2012. The directive lays out four broad principles: (i) the provision of convenient services to users; (ii) the provision of integrated and interconnected transport services closely integrated with urban master plans and long term land use; (iii) the pursuit of green development with an emphasis on efficient and high capacity rapid transit systems on major corridors; and (iv) the determination of solutions that are context sensitive and appropriate.

11. Tianjin has elaborated such a shift as part of its 12th Five Year Plan on integrated

transportation and on public transport. Tianjin plans to build an efficient, convenient safe, green and integrated transport system, leveraging a combination of public transport and NMT, as per the best practice in international metropolitan areas. Such plan aims at making transport more efficient, less polluting, safer and more resilient and to improve the ridership and quality of public transport. The 12 FYP plan includes major investment in urban infrastructure with a significant portion to improve public transport. Tianjin invested RMB 113 billion in 2012 in urban infrastructure and transport development in 2012 and total municipal fiscal expenditure in transport was RMB8.7 billion. In 2013, the Tianjin government also approved a detailed Tianjin Congestion Mitigation Plan covering a broad range of measures to pull traffic to public transport and NMT while discouraging the use of cars. The Tianjin government started a car plate restriction policy in December 2013 and launched an on-road car restriction mechanism in March 2014 to ease congestion.

12. Aside from transport, Tianjin is also one of the world's top 10 cities most vulnerable to flooding, in terms of expected average annual losses (AAL), with a projected AAL of USD 2.2 billion by 2050. This is due primarily to its low elevation (2 – 4 meters above sea level) combined with higher-than-average projections of sea level rise. While successful flood control of major rivers is implemented by the central government, Tianjin experiences recurrent urban flooding and water logging due to extreme precipitations that exceed the capacity of its urban drainage system. One such major event occurred on July 26, 2012, when precipitation exceeded 300mm, flooding many downtown streets, paralyzing traffic and causing almost 40 casualties.

13. The institutional structure for transport in Tianjin still follows a semi-traditional structure without a fully integrated municipal transport commission. Although Tianjin has set up the Tianjin Urban-rural Construction and Transport Commission (TURCTC), the responsibility of TURCTC is mainly to build transport facilities. The planning and operation of transport services are still managed by the planning bureau and transport bureau. Such institutional structure increases coordination challenges. This differs from Beijing, Guangzhou and Shanghai, which have formed municipal transport commissions, responsible for transport planning, operation, maintenance and safety.

Relationship to CAS

14. The proposed project is aligned with the 2013-2016 World Bank Group Country Partnership Strategy (CPS) for China, discussed by the Board on November 6, 2012. The 2013-2016 CPS focuses on three main pillars: support greener growth, promote more inclusive development, and advance mutually beneficial relations with the world. The CPS is aligned with China's 12th Five-Year Plan. The proposed project supports the greener growth pillar and in particular outcome 1.3 on Promoting Low Carbon Urban Transport. Specifically, the project will help accelerate the shift to a combination of NMT and public transport, particularly in the central city area, promoting green transport integration and accessibility, and improving transport safety, all stated actions for Outcome 1.3. The project also supports Outcome 1.7 on strengthening mechanisms for managing climate change by promoting access to new technologies to address adaptation challenges. The flood management information system of this project will facilitate the capabilities of Tianjin Municipal Government to better manage water logging in the city and reduce its negative impacts.

15. The project supports the World Bank's goal of enhancing shared prosperity. Based on the Tianjin statistic yearbook, people with an income level below RMB23,259 are in the bottom 40 percent (referred to as the "B40") in Tianjin. Registered low income citizens with an income below US\$103 per month are eligible for a minimum living guarantee, while those with income below US

\$158 per month receive a poor household subsidy (about 3 percent of Hukou registered population fall under these two categories). Over 80 percent of B40 households walk, bike or take the bus for their trips, with over 70 percent of trips below 5 km and 1 hour based on a recent survey by Nankai University. Since the mass transit system covers the core districts in Tianjin, where major hospitals, universities, schools, parks, and job are located, the proposed project will benefit the B40 by providing a cost-efficient solution to move within the city of Tianjin and access jobs and public services, while reducing traffic congestion. It will also reduce traffic-related deaths and injuries, also supporting shared prosperity, considering that accidents is one of the cause of poverty in Tianjin.

16. Tianjin's experiences and lessons in urban transport are valuable to other Chinese cities. A number of transformational ideas will be pursued under the project. Those include using a cost-efficient mass transit system like a BRT in Tianjin, leveraging the existing metro system through better last mile accessibility, improving safety of access roads to the mass transit system, applying transit oriented development and land value capture concepts around selected stations and rolling out pilot public bike sharing (PBS). Such topics have high relevance for many other Chinese cities, and the project will contribute the lessons learned to TransFORM, a collaborative transformation and innovation platform, between the Ministry of Transport and the Bank to make transport safer, clearer and more affordable in China.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

17. The Proposed PDO is to improve safe and affordable access to areas located in the Tianjin main city, in all weather conditions, through an effective combination of mass transit, buses and non-motorized transport, focusing on people in the bottom 60 percent in terms of income level.

18. By leveraging the Tianjin mass transit and public transport system, the project will relieve congestion. By focusing on a combination of NMT and public transport access, the project will ensure a strong focus on the B40, and build on global best practices. By combining transit oriented development with some of the public transport stations, the project will facilitate walkability. By supporting a flood information system, the project will provide early warning and decision support system for city managers, transport providers and the public to enhance urban traffic operation and management capability during period of heavy rains or flooding.

Key Results (From PCN)

19. The achievement of the PDO will be measured through the following Key Performance Indicators:

- (a) Safety improvement: Increase in IRAP's road safety assessment scores for the access roads (to metro stations) upgraded under the project;
- (b) Affordability: Increase affordable access within the Tianjin main city;
- (c) Improved Access: Reduction in travel time along the new BRT corridor supported by the project and ridership level on this corridor;
- (d) Improved Access: Growth in ridership of Tianjin metro system;
- (e) Improved Access: Increase in catchment areas of metro by public and private bikes
- (f) Improved Access: Implementation of Transit Oriented Development at a selected site.
- (g) Improved flood management: availability of real time notification and response system in

case of flooding; and

(h) Core Indicator: Road rehabilitated (km)

III. Preliminary Description

Concept Description

20. The proposed project consists of the following three components:

21. Component 1: Street Network Improvement (US\$245 million, 96% of cost) :

- (i) Construction of Bus Priority Corridors to complement the existing metro network;
- (ii) Access improvement to the mass transit system, including selected intersection improvements, interconnection facilities (bike parking, bus connection, park and ride) and street improvements for NMT access at about 10 metro stations. This subcomponent would increase the catchment area of these metro stations and leverage past investments in the mass transit system;
- (iii) Street improvement for about 8 urban roads experiencing congestion and playing microcirculation functions, focused on NMT friendly environment and connection with other transport facilities;
- (iv) Pilot a PBS system with about 12,260 bicycles and 446 stations to support last mile accessibility; and
- (v) Construction of about 8 bus stations including six bus terminals and two integrated hubs to improve the quality of bus service, and to ease transfers between different modes.

22. Component 2: Flood Management Information System (US\$6 million, 2.3% of costs): This component includes investment in a geospatial information system that links flood hazard/water logging modelling with: (a) meteorological forecasts, (b) real-time flood levels, and (c) transport management systems, to provide an early warning and decision support system for city managers, transport providers and the public.

23. Component 3: Technical Assistance (US\$4 million, 1.6% of costs): The proposed topics for technical assistance include:

- (i) Flood hazard assessment and performance assessment of existing and planned urban drainage systems, with particular focus on the catchment area of the mass transit system;
- (ii) Sustainable green urban transport development strategic study for the Tianjin Central Area;
- (iii) Tianjin strategy to control motor vehicle ownership and use (including parking, congestion charges), combined with GHG emission inventory and emission reduction strategy (potentially together with GIZ);
- (iv) Decision making supporting system to enhance the Tianjin Central Area bus network and develop a dynamic network improvement plan;
- (v) Diversified financing mechanisms for urban transport sustainable improvement, including PPP options for bus terminals, public bike sharing system or BRT;
- (vi) Public bicycle management development and operation mechanism, and sustainable development, considering the complementary role of private bikes and public bikes; and
- (vii) Comprehensive urban transport improvement and awareness rising for innovative approaches.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04			x
Forests OP/BP 4.36		x	
Pest Management OP 4.09		x	
Physical Cultural Resources OP/BP 4.11			x
Indigenous Peoples OP/BP 4.10		x	
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50		x	
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	260.00	Total Bank Financing:	100.00
Financing Gap:	0.00		
Financing Source		Amount	
Borrower		160.00	
International Bank for Reconstruction and Development		100.00	
Total		260.00	

VI. Contact point

World Bank

Contact: Gerald Paul Ollivier
 Title: Senior Infrastructure Specialist
 Tel: 5788+7680 /
 Email: gollivier@worldbank.org

Borrower/Client/Recipient

Name: People's Republic of China
 Contact: Mr. Wang Hai
 Title: International Department, MOF
 Tel: 86-10-68553216
 Email: wanghai@mof.gov.cn

Implementing Agencies

Name: Tianjin PMO
 Contact: Qi Wenjie
 Title: Director
 Tel: 8622-231915601805
 Email: tjpmo@public.tpt.tj.cn

VII. For more information contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: <http://www.worldbank.org/infoshop>