



I. Project Data

Project ID	Project Name
P127036	China GEF Large-City Congestion Project
Country	Practice Area(Lead)
China	Transport

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
TF-14206	30-Jun-2018	17,612,833.29
Bank Approval Date	Closing Date (Actual)	
29-Mar-2013	31-Dec-2018	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	18,180,000.00	18,180,000.00
Revised Commitment	18,180,000.00	17,612,833.29
Actual	17,612,833.29	17,612,833.29

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2. Project Objectives and Components

a. Objectives



According to the Grant Agreement (GA, schedule 1, page 7), the objectives of the project were "to help the Recipient establish a policy framework to alleviate traffic congestion and reduce greenhouse gas emissions in its large cities, primarily through public transport development and travel demand management, and implement such policy framework in Project Cities so as to demonstrate its local and global benefits". This is identical to the project development objective (PDO) in the Project Appraisal Document (PAD, para 22).

The global environmental objective (GEO) of the project (PAD, para 23) was "to reduce greenhouse gas emissions directly from a business-as-usual scenario through improved bus speeds and modal shifts to public and non-motorized transport in the three pilot cities, and indirectly through replication of the successful pilot actions that would be supported by central policy, strategy and technical guidelines developed under the project."

For the purpose of this review, the PDO as given in the GA will be parsed as follows: (i) to help the Recipient establish a policy framework to alleviate traffic congestion and reduce greenhouse gas emissions in its large cities, primarily through public transport development and travel demand management and (ii) to help the Recipient implement such policy framework in Project Cities so as to demonstrate its local and global benefits. The achievement of the GEO stated in the PAD will be assessed but not rated.

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

No

c. Will a split evaluation be undertaken?

No

d. Components

The project was structured along the following four components:

**Part A: National Level Support** (cost at appraisal US\$13.01 million, actual cost US\$12.52 million). This component had four subcomponents.

(i) Provision of technical advisory services to the Minister of Transport (MOT), with the support of affiliated national institutions, for the development of policy, strategy, and technical guidelines in relation to sustainable urban transport, including (a) the development of policy and technical guidelines for travel demand management (TDM) and transit-oriented development (TOD) implementation, (b) the development of a policy for integrated urban transport and land use planning, (c) the establishment of a policy framework and evaluation system for sustainable urban transport, which includes public transport metropolises (PTM) policies, and a statistical system to monitor and evaluate urban transport energy consumption



and CO<sub>2</sub> emissions, and (d) the preparation of technical guidelines for intelligent transport system (ITS) applications in public transport.

(ii) Institutional strengthening and capacity building through, inter alia, (a) the establishment of a national public transport database, (b) the provision of technical advisory services for TDM, parking management, public transport service improvement, and urban transport CO<sub>2</sub> emission monitoring and evaluation (M&E), and (c) the establishment of a project website and organization of training and workshops.

(iii) M&E of project activities, including (a) the M&E of the project's urban transport CO<sub>2</sub> emissions reductions, (b) the provision of goods and equipment for M&E of urban transport CO<sub>2</sub> emissions reductions, and (c) the M&E of the overall progress of Part A of the project.

(iv) Management of project activities under Part A of the project, and overall project coordination.

**Part B: Pilot Demonstration in Suzhou** (cost at appraisal US\$46.05 million, actual cost US\$52.06 million). This component had four subcomponents.

(i) Improving public transport through, inter alia, (a) the construction of Suzhou's information service system for transit riders, including system design and acquisition of on-board devices, (b) assessment of express bus lines, development of concept design of bus lanes and preparation of environmental management plans as required for the future construction of such lanes, acquisition of clean-energy buses for operation, and carrying out of associated traffic management activities, and (c) the carrying out of TOD studies.

(ii) Improving TDM through, inter alia, (a) the carrying out of TDM studies and parking system planning, (b) the formulation and pilot implementation of differential parking policy, including the acquisition of charging equipment, and (c) the development of a congestion pricing scheme in the ancient city of Suzhou.

(iii) M&E of project activities, including the development of an urban transport monitoring system, and data collection for the urban transport CO<sub>2</sub> emissions database of Suzhou.

(iv) Management of project activities under Part B of the project.

**Part C: Pilot Demonstration in Chengdu** (cost at appraisal US\$26.80 million, actual cost US\$28.83 million). This component had four subcomponents.

(i) Improving public transport through, inter alia, (a) the carrying out of junction channelization in selected areas, and upgrading of their traffic control system, (b) access improvements to bus stops, and (c) carrying out of studies on public transport optimization.



(ii) Improving TDM through, inter alia, the development and implementation of (a) traffic information dissemination and guidance systems using real-time data, (b) a parking policy and measures utilizing differential pricing mechanisms, and (c) congestion alleviation policies.

(iii) M&E of project activities, including the development of an integrated urban transport database, and data collection for the urban transport CO<sub>2</sub> emissions database of Chengdu.

(iv) Management of project activities under Part C of the project.

**Part D: Pilot Demonstration in Harbin** (cost at appraisal US\$28.32 million, actual cost US\$28.33 million). This component had four subcomponents.

(i) Improving public transport through, inter alia, (a) the construction of a bus priority lane, including junction channelization, parking and associated traffic management improvements, and acquisition of clean energy buses, (b) the upgrading of the existing public transport dispatch center, taxi management and data center, and (c) carrying out of selected thematic studies.

(ii) Improving TDM through, inter alia, (a) the carrying out of TDM and traffic impact studies, and (b) pilot implementation of parking management systems in selected areas.

(iii) M&E of project activities through data collection for the urban transport CO<sub>2</sub> emissions database of Harbin.

(iv) Management of project activities under Part D of the project.

The project components were not changed, but the following four activities were added to Part A:

(i) Preparation of a financing strategy for green transport;

(ii) Establishment of and evaluation framework for new energy bus operations;

(iii) Carrying out of a study on connection standards between highways and urban roads; and

(iv) Management and maintenance of knowledge dissemination activities under the TransFORM platform, which is the MOT's transport transformation and innovation knowledge platform established in 2014.

Note: The task team clarified on August 15, 2019 that PTM refers to large cities that have a public transport modal share of 60 percent or above. China has been promoting an increased public transport share in large cities through various policies, which might include funding for infrastructure or subsidies. Initially, China piloted this concept with a number of pilot cities. It has now expanded to about 50 cities. Under this project, PTM policies included the Evaluation Index System for City



Public Transportation Development Performance, the Study of Urban Passenger Transport Statistics Database, and the Urban Transport Energy Consumption Reporting System.

**e. Comments on Project Cost, Financing, Borrower Contribution, and Dates**

**Project Cost**

The total project cost was US\$121.74 million (ICR, page 62), which is seven percent more than the appraisal estimate of US\$114.18 million. According to the task team interviewed on August 15, 2019, this cost overrun was mainly due to the higher price of the buses procured in Suzhou than budgeted and the acquisition of more electronic signs for bus stop than originally envisaged in Chengdu.

**Financing**

The project was financed through a Global Environment Facility (GEF) trust fund in the amount of US\$17.61 million (ICR, page 2), which is 97 percent of the GEF financing of US\$18.18 million envisaged at appraisal. The task team, in the meeting on August 15, 2019, pointed out that the GEF grant was not fully disbursed because some studies procured cost less than expected and the Study on Green Transport Financing was not carried out. It should be noted that the GEF grant only covered slightly more than 10 percent of the project cost.

**Borrower Contribution**

The actual Borrower contribution was US\$104.13 million (ICR, page 2), which is 8 percent more than the appraisal estimate of US\$96 million.

**Dates and Project Restructurings**

The project was approved on March 29, 2013, became effective on September 2, 2013, and was originally expected to close on June 30, 2018. The project was restructured twice. The first restructuring in 2016 was necessary to use project savings of US\$1.4 million from lower bid prices than anticipated and make minor adjustments. The restructuring (i) added the four activities mentioned under Part A of the project, (ii) reallocated amounts among disbursement categories to reflect the new activities, (iii) changed the institutional arrangements by adding a new project implementation unit (PIU) to enhance knowledge dissemination, and (iv) modified the results framework.



The changes to the results framework included (i) updating the baseline and target value for the PDO indicator 4: Reduction in urban transport-related GHG emissions in pilot cities because the M&E methodology adopted during project implementation was more advanced than the one proposed at appraisal, (ii) modifying the intermediate result indicators for component A to better reflect the activities under it, and (iii) modifying the intermediate results indicators for component C to better reflect the outputs of the project in the pilot city Chengdu.

The second restructuring in 2018 extended the closing date by six months, from June 30 to December 31, 2018. This was necessary to complete (i) the ongoing technical assistance (TA) activities, mostly the ones added with the 2016 restructuring, (ii) install goods in the pilot cities, and (iii) provide time for the pilot cities to endorse the policy frameworks after the completion of the TA on policy frameworks at the pilot city level.

Considering that the changes to the PDO indicator baseline and project end target values enhanced the accuracy of its measurement but did not reduce the level of ambition of the project, a split rating is not warranted.

### 3. Relevance of Objectives

#### Rationale

**The relevance of the objective is considered high.**

At appraisal, China's urban transport sector was a major and fast growing source of greenhouse gas emission with increasing congestion in large cities. The energy-related CO<sub>2</sub> emissions from transport were expected to increase from 337 million tons in 2005 to 1,255 million tons in 2030. The service quality of public transport services declined with growing traffic congestion and this led to a vicious cycle with decreasing public transport ridership and further drops in service quality.

To cope with transport congestion problems, China initially focused on building more roads, which often displaced non-motorized transport (NMT) and encouraged more car use. China then gradually shifted to invest in public transport. However, (i) China lacked a comprehensive approach to public transport management development and TDM, (ii) the national policy guidelines on these two approaches were deficient, and (iii) the cities did not have the capacity to implement such measures effectively to tackle congestion (PAD, paras 6 and 44).

Therefore, to assist China in establishing a policy framework to alleviate traffic congestion and reduce greenhouse gas emissions in its large cities and implement this policy framework in three cities to demonstrate its local and global benefits, was highly relevant.

This relevance was confirmed through China's 2011-2015 12th Five-Year Plan for National Economic and Social Development, which promoted the development of a "resource-saving and environmentally-friendly society" as a broad



direction for actions. It required all sectors, including transport, to establish M&E systems for greenhouse gas emissions and specify their respective targets for reductions. The objective was also fully aligned with the World Bank's FY2013-2016 China Country Partnership Strategy (CPS), which emphasized the importance of actions to address urban transport issues and included "supporting greener growth" as one of its three strategic themes.

At project close, the relevance of the PDO remained high. The task team confirmed that car ownership had continued to increase and congestion and greenhouse gas emissions from transport had remained a major problem in large Chinese cities. However, the measures advocated by this project and implemented in many large cities, had helped to bring the problem under control.

China's 2016-2020 13th Five-Year Plan for National Economic and Social Development includes a chapter on the development of a modern integrated transport systems. This chapter focuses on (i) building a modern and highly efficient intercity and urban transport system, (ii) developing integrated and interconnected multimodal transport gateways/hubs, and (iii) promoting low carbon and intelligent transport services. The ICR (para 12) points out that China's development priority "An Era of Ecological Civilization" required further reductions of greenhouse gas emissions from transport, and that the PDO was fully aligned with China's new growth model, which requires a "modern and integrated transport and logistics system". At the sectoral level, the PDO remained highly relevant to the MOT's 13th Five-Year Plan and the priorities set out in various key policy documents.

The FY2013-2016 CPS was extended and there was no new CPS at project close. The ICR (paras 23 and 24) notes that the PDO remained highly relevant in the light of the Bank's capital increase package, which among others prioritizes the delivery of global goods, such as the reduction of greenhouse gas emissions, and the Bank's transport strategies.

## Rating

High

## 4. Achievement of Objectives (Efficacy)

### OBJECTIVE 1

#### Objective

To help the Recipient establish a policy framework to alleviate traffic congestion and reduce greenhouse gas emissions in its large cities (primarily through public transport development and travel demand management).

#### Rationale



The **theory of change** for the first objective was that (i) the technical advisory services to the MOT and its affiliated institutions at national level on PTM, TDM, TOD, and other sustainable urban transport related topics, (ii) the institutional strengthening and capacity building on these topics, and (iii) M&E of CO<sub>2</sub> emission, among others, would lead to the following outputs: (i) draft policy documents, strategies, and technical guidelines to alleviate traffic congestion and reduce greenhouse gas emissions, (ii) a national public transport database, (iii) a project website for knowledge exchange, (iv) transport official and policy makers with enhanced awareness and capacity, and (v) M&E of greenhouse gas emission and project results. These outputs, in turn, were expected to result in the adoption by the MOT of a national policy framework to alleviate traffic congestion and reduce greenhouse gas emissions in its large cities, primarily through public transport development (PTD) and TDM. This was to happen under the assumption that the project activities helped policy makers understand the critical importance of PTD and TDM and they reacted in a rational way. The logical chain between the input, outputs, outcomes was clear.

## Outputs

The project produced the following main outputs (ICR, paras 27 to 36 and annex 1):

- The following 14 TA studies were carried out, exceeding the target of 13:
  1. Concept Paper for 13th Five-Year Plan of Transport Development, setting out the national policy for the entire transport sector;
  2. Study of Synergy Policies between City's Transport Planning and City's Master Plan, focusing on coordination between transport and city planning;
  3. Integrated Passenger Hub Layout Planning and Function Optimization Guidelines for passenger hub layout planning and function optimization to promote the development of modern sustainable passenger hubs;
  4. Research on Technical Standards on Information Exchange and Service Mechanism for Urban Integrated Passenger Hubs, providing technical standards and guidance on developing and operating the ITS for integrated passenger hubs;
  5. Chinese Urban Transport Demand Management Manual, providing options to city decision makers for TDM, traffic congestion mitigation, and carbon emission reduction;
  6. Evaluation Index System for City Public Transportation Development Performance, which according to the task team established indexes and ratios to assess and compare the performance of public transport systems;
  7. Study of Urban Passenger Transport Statistics Database, which assessed the shortcomings related to transit statistics and optimized data collection and storage structures. According to the task team, this database is owned by the MOT, which in 2016 asked large cities to provide them with their public transport data. The provision of this data is compulsory;
  8. Urban Transport Energy Consumption Reporting System, laying out a system for energy consumption reporting. According to the task team, it is also owned by the MOT, which has the mandate to collect data on energy consumption from public transport, including taxis;





9. Urban Transport Carbon Emissions Monitoring and Evaluation System Study, establishing the first comprehensive model for urban transport carbon emission M&E for China's context. It included a guideline for carbon emission M&E and a copyrighted software application. Several articles on it were published in journals and several presentation were given at conferences;
  10. Urban Transport Carbon Emissions Monitoring and Evaluation System Study for Pilot Cities Assessment, which included testing the urban transport carbon emissions M&E guidance in the pilot cities together with workshops and training;
  11. Research on Guidelines for Urban Intelligent Public Transport System Construction and Application, which defined the framework for intelligent public transport systems, including an intelligent dispatching module, a transit signal priority module, an information service module, a dedicated bus lane management module, a decision support module, and the definition of the roles played by the public and private sectors;
  12. Study on Connection Standards between Highways and Urban Roads, providing a technical solution on physical and operational integration and a coordination mechanism for planning and technical and service standard harmonization;
  13. New Energy Bus Operation Evaluation Framework Study, consisting of a comprehensive diagnostic on the development of the bus industry using new energy sources;
  14. Study on the Transport Development Strategy under the New Urbanization Model 2018-2035, which looked into the development trends for new types of urbanization in China and forecast the transport demand and requirements;
- National urban passenger transport statistics database developed and operationalized, as planned;
  - 31 cities with their public transport data available in the national urban passenger transport statistics database, which largely exceeds the target of 3 cities;
  - 39 workshops carried out, which exceeds the target of 30;
  - 2,277 government officials and technical staff received training, which significantly exceeds the target of 700; and
  - 201 case studies updated in the TransFORM platform, achieving the target of 200. In one year, these case studies were viewed online 25,000 times (ICR, para 27, footnote 9).

All project activities expected to lead to the achievement of this objective were carried out, and the related intermediate results were achieved or exceeded.

## Outcomes

The ICR (para 28) points out that the 14 TA studies helped shape the frontier of urban transport development in China. It also notes (paras 35 and 36) that the institutional and technical capacity was improved at national and local levels as a result of the project activities and that extensive knowledge sharing and dissemination activities took place. However, the ICR does not provide any evidence.



According to the PAD (para 41), "the national policy framework to be adopted by MOT" had to include (i) integrated transport and urban planning, (ii) TOD, (iii) PTM, and (iv) urban transport energy consumption statistics. In the absence of a definition of "policy frameworks" in the PAD, in this review it is understood as a set of national strategies and policy documents, plans, legal documents, technical requirements, and standards on the four topics identified in the PAD.

Using this interpretation, it seems reasonable to conclude that the national policy framework was adopted by MOT and other policy makers as shown below, and that the respective outcome indicator was fully achieved.

The MOT, the National Development and Reform Commission (NDRC), and the State Council used TA studies 1, 2, and 3 above as critical inputs for the 2015 13th Five-Year Plan of the Modern Comprehensive Transport Development.

The Plan constitutes the national blueprint for the entire transport sector, covering the period from 2016-2020. It specifies targets for (i) improving the public transport service coverage in urban areas, (ii) building modern integrated high-quality passenger hubs, (iii) reducing carbon emissions from the transport sector by seven percent, (iv) improving the coverage and usage rates of ITS, and (v) enhancing the coordination between the city's master plan and the transport plan. According to the task team, it also includes recommendations, among others, on urban and transport planning integration, fare and physical integration of public transport systems, and the integration of ITS at citywide level. It is mandatory for all local governments to act on the targets and recommendations of the Plan (ICR, para 30).

In addition, the national government directly converted several TA studies into the following national standards, industry standards, and technical requirements:

#### Related to PTM

- 2017 National standard GB/T 35654-2017 on the Evaluation Index System for City Public Transportation Development and Performance (TA study 6 above). According to the ICR (para 31), the MOT was using the standard to assess the public transport development level and performance of all cities, identify issues, and set national subsidies;
- 2015 MOT's Urban Passenger Transport Reporting Regulation (TA study 7 above). It institutionalized data collection and reporting responsibilities of cities and set the procedures to regularly report statistics to the MOT and the State Statistics Bureau;
- 2015 MOT's (i) Technical Requirements on ITS Applications Installed on Bus Fleet, (ii) Technical Standards on the Data Communication Protocol of Data-Bus-Interface on Bus Fleet, and (iii) Technical Requirements on the Data Communication Protocol between the ITS Applications Installed on the Bus Fleet and the Dispatching Center (TA study 11 above);

#### Related to TDM

- 2017 MOT's industry standards on Integrated Passenger Hub Intelligent System Information Exchange Technical Specification (JT/T 1117-2017) (TA study 4 above); and

#### Related to urban transport energy consumption statistics



- 2014 MOT's revised Transport Sector Energy Consumption Statistic Reporting Regulation (TA study 8 above). This regulation institutionalized and operationalized energy consumption data collection from public transport operators, including taxis, nationwide.

The national government also issued the following regulations, plans, and requirements, which were based on the results of the project's TA studies:

#### TDM, transport and city planning integration, and TOD

- 2015 MOT Regulation on Investment Subsidy for Integrated Passenger Hubs, detailing the incentive packages and associated criteria for integrated passenger hub investment. The Regulation adopted principles of mode interchange and several evaluation criteria and associated technical parameters from the TA study 3 above;
- MOT's 13th Five-Year Plan for Integrated Passenger Hub Development Plan, which guides overall nationwide planning and investments in integrated passenger hubs. The Plan adopted recommendations on service quality, maximizing multimodal connectivity and integration and customer coverage, and coordination mechanisms to operationalize the integrated planning and construction across modes and entities from the TA study 3 above;
- 2015 MOT's Integrated Passenger Hub Intelligent System Construction General Technical Requirements (JT/T 980-2015), using outputs of TA study 4 above;
- 2006 MOT's 13th Five-Year Plan for Urban Public Transport Development, which adopted recommendations on non-motorized transport (NMT), TOD, traffic calming, traffic impact evaluation of construction projects, and congestion reduction from the TA study 2 above.
- 2015 MOT's and NDRC's Comprehensive Transport Network Plan 2014-2020 for Urban Areas, which adopted principles of integrated land use and transport planning, cross-agency coordination, and plan enforcement enhancement from the TA study 2 above; The task team pointed out that local authorities need to comply with this Plan and compliance is monitored at national level.
- National Urban and Town System Plan, which is adopting recommendations on enhancing transport and urban planning coordination from the TA study 2 above. This Plan was under development by the MOT and the Ministry of Housing and Construction at the time of ICR preparation. The task team clarified that the urban and rural planning law requires cities to follow this Plan when preparing their master plans, which have to be approved at provincial or national level.

With respect to transport and land use planning integration, the ICR (para 81) mentions that the TA on Integrating the City Master Plan and Transport Plan recommended that the national government changed the approval procedure to make this integration a mandatory requirement. This change has not yet taken place. However, a very recent reform gives the Ministry of Natural Resources the overall coordination and oversight role for all types of planning documents. On May 28, 2019, the Ministry of Natural Resource issued a directive rolling out "multi-to-one plan", which means that from now on all urban plans submitted for approval need to include all aspects (ICR, para 81, footnote 37). The task team clarified that based on this directive, cities now have to prepare one integrated plan, which includes all elements of the previously separate master, land-use and transport plan. The task team noted that this development cannot be attributed to the project. However, the MOT was



consulted in the preparation process of the directive and the technical aspects of the TA on Integrating the City Master Plan and Transport Plan will be useful to guide the "multi-to-one plan" preparation.

## Rating

High

## OBJECTIVE 2

### Objective

To help the Recipient implement such policy framework in Project Cities so as to demonstrate its local and global benefits.

### Rationale

The **theory of change** for the second objective for Suzhou was that (i) the national policy framework to alleviate traffic congestion and reduce greenhouse gas emissions, (ii) the project's TA in Suzhou, among others, on Bus Rapid Transit (BRT) lanes, bus routing and integration, TOD, TDM, and emission monitoring being carried out, and (iii) the pilot demonstration activities in Suzhou, including the acquisition and installation of ITS equipment, systems for transit riders, and for differential parking, would lead to (i) local policies, strategies, plans, studies, and the design of PTM and TDM, (ii) the implementation of a passenger information service system, and (iii) the implementation of a pilot on differential parking. This, in turn, showcased the implementation of the national policy framework and was expected to demonstrate its local and global benefits.

For Chengdu, the theory of change was that (i) the national policy framework to alleviate traffic congestion and reduce greenhouse gas emissions, (ii) the project TA a city level, among others, on public transport priority, TOD, and TDM, and (iii) the pilot demonstration activities in Chengdu, including bus stop improvements and the acquisition and installation of ITS systems, would lead to (i) local policies, strategies, plans, studies, and the design of PTM and TDM being carried out, (ii) an upgraded traffic control and information dissemination and guidance system, and (iii) an integrated urban transport database. This, in turn, showcased the implementation of the national policy framework in Chengdu and was expected to demonstrate its local and global benefits.

For Harbin, the theory of change was that (i) the national policy framework to alleviate traffic congestion and reduce greenhouse gas emissions, (ii) the project TA a city level, among others, on road transport channelization and traffic management, TDM, and transport impacts assessment, and (iii) the pilot demonstration activities in Harbin, including civil works for a bus priority lane, the purchase of clean buses, and ITS for buses and taxis, would lead to (i) thematic studies on PTM and TDM carried out, (ii) a bus priority lane operated by clean energy buses, (iii) an upgraded bus dispatch center, (iv) a taxi management and data center, and (v) a parking pilot. This, in turn, showcased the implementation of the national policy framework and was expected to demonstrate its local and global benefits.



For all three cities, the logical chain was clear and the results were to happen under the assumptions that the national policy had a strong top-down effect and the pilots would be implemented successfully.

## Outputs

The project produced the following main outputs (ICR, paras 40 to 45, 48, 49, 52, 53, and pages 52 to 59):

### City of Suzhou

- 12 TA studies completed, which is twice as much as the target of six. These TA studies included the following:
  - o Study to assessment BRT lanes, planning/design for two dedicated BRT lanes, and detailed planning for two additional BRT lanes. The City of Suzhou implemented three BRT lanes suggested in study with their own funds;
  - o Implementation plan for the urban arterial bus route network, which contributed to the addition of 112 new bus routes and the optimization of 218 existing ones;
  - o Study on integration of urban rail and conventional bus, which contributed to the adjustment and optimization of 87 bus routes to serve the newly opened urban rail. This provided 100 percent bus service coverage around rail stations;
  - o Suzhou TOD study, which developed cross-sectoral strategies that contributed to the refinement of the existing Suzhou Urban Plan and the Suzhou Urban Comprehensive Transport System Plan;
  - o Suzhou TDM study and parking system planning, including the implementation of advisory services for a park and ride (P&R) policy. The City of Suzhou implement 24 P&R parking lots with their own funds, which were used by more than 60,000 people daily;
  - o Congestion pricing scheme for the historical city area of Suzhou developed, including analysis of implementation conditions and the study of supporting policies;
  - o TA on urban transport evaluation and performance indicators and provision of traffic data collection equipment, which contributed to the enhancement of traffic management and enforcement;
  - o TAs on comprehensive public transport information service system and on traffic demand analysis based on intelligent cards data;
- For the BRT lanes, 50 buses purchased and traffic management measures, sidewalks, and bus stop improvements carried out as planned;
- 280 clean energy buses purchased as planned. The Recipient noted in its ICR contribution that the early adoption of a large clean energy bus fleet helped Suzhou build know-how and confidence. By project closure, 80 percent of Suzhou's bus fleet used clean energy (CNG, hybrid, e-buses) and the historical city center was only served by clean energy buses (ICR, para 41);
- Equipment for transport carbon emission monitoring purchased and technical assistance for carbon emission data collection and workshops. The City of Suzhou used the equipment and the knowledge acquired to collect data on carbon missions on a monthly basis for four consecutive years from 2014 to 2017. During the interview on August 15,



- 2019, the task team clarified that after 2017, the city only collected carbon emission data from public transport, including taxis. To collect data from private vehicle, the city needs additional support, which stopped in 2017;
- Parking charging equipment purchased and differential parking policy implemented on a pilot basis, with 6,000 parking spaces adopting a differential parking policy. This is significantly above the project end target of 2,000 parking spaces. The ICR (annex 1) points out that the differentiated parking greatly reduced the number of cars entering into the city center. The ICR does not provide quantitative data to back up this statement. The task team noted during the interview on August 15, 2019 that Suzhou still applies the differential parking policy in the old town and has plan to extend it to the whole city; and
  - 4,400 bus on-board information service devices and bus ridership data acquisition equipment purchased, achieving the target. This, and the TA on the public transport information service system and traffic demand analysis based on intelligent cards data, contributed to Suzhou's information service system for transit riders and transport agencies, which includes (i) an advanced traffic control center, (ii) a public transport dispatch center, (iii) an operation management platform, and (iv) a passenger travel information platform.

#### City of Chengdou

- Nine TA studies completed, exceeding the target of five. These TA studies included the following:
  - o Studies on urban public transport priority, including (i) optimization of the public transport network in the city center and in medium capacity corridors, (ii) public transport priority at road junctions, (iii) bus stop optimization, (iv) public transport priority in the Tianfu New Zone, and (v) public transport priority at Tianfu International Airport, which together with the deployed ITS supported citywide bus network optimization and planning;
  - o TA to develop congestion alleviation policies, covering (i) land use and transport integration, including TOD, (ii) public transport and non-motorized transport priorities, (iii) TDM including parking and HOV, low carbon zone, advanced road space pricing, (iv) traffic management, (v) ITS, (vi) promotion of green commute, (vii) behavior changes, and (viii) institutional enhancement. The city implement the following measures based on the TA recommendations: (i) setting up a steering committee for traffic alleviation at the top level of the Chengdu government and at each district government level, (ii) differentiated parking policy covering 597 km<sup>2</sup> (12 times more than the original targets), (iii) promotion of TOD principles and investment in TOD projects, (iv) 2016 technical guideline on promoting small blocks in urban areas, (v) piloting of high occupancy vehicle (HOV) lanes in 2017, which according to the task team is still operational, (vi) investments in urban railway construction and interchanges, (vii) optimization of the citywide bus network and improvement of service quality, (viii) optimization of bus dedicated lanes network, (iv) promotion and investment in NMT, (x) citywide improvement of traffic signaling control at ramps in 2014, (xi) citywide junction channelization, (xii) introduction of two urban public transport express corridors, (xiii) operationalization of the urban traffic index system, and (xiv) improved traffic management around construction sites;
- Urban Transport Integrated Database and Comprehensive Transport Model developed as planned. They are used to monitor the development of public transit, evaluate policy effects of urban transport improvements, and support transport planning, traffic impact analysis, public transit optimization and prediction, and decision making;



- Public Transport Network Optimization Decision-Making Aiding System developed as planned;
- Traffic signal controllers and communication system purchased and installed as planned, which enable to provide priority to buses at junctions;
- 476 video traffic counting devices deployed to collect and process traffic volume information and other basic data and 79 ramp metering system installed on the 2nd ring road to give drivers clear guidance of road congestion condition, as planned;
- Traffic and passenger flow simulation software VISSIM and ARCPort procured;
- Traffic information dissemination and guidance system using real-time data, designed and implemented, with 102 variable message video management system (VMS) signs installed to display traffic performance and provide real-time traffic guidance, as planned;
- 55 junctions upgraded as planned. In the interview on August 15, 2019, the task team explained that this did not include physical works, but upgrades with traffic signal controllers. The achievement significantly exceeded the target of 2; and
- 702 electronic signs at bus stops installed, which provides real-time information to passengers on bus arrivals, exceeding the target of 500.

#### City of Harbin

- Five TA studies completed, achieving the target. These TA studies included the following:
  - o TA on road transport channelization, used by the police for the design of Lesong Plaza Junction, which increased in capacity from 9,000 vehicles per hour to 12,000 vehicles per hour;
  - o TA to design a traffic management program;
  - o TDM study including parking management strategy and policy, procurement of bus station parking management system, and implementation of parking management in selected areas to enforce illegal parking at bus stops;
  - o Transport impact assessment study for two large developments. The recommendations of the assessment were submitted to the developers, but the transport agency has not powers to ensure compliance;
- Six km of bus priority lanes constructed, including junction channelization, accessibility improvements and procurement of clean energy buses, achieving the target of six km. The bus priority lanes increased bus speeds from 12 km per hour to 40 km per hour (the project had not target for bus speeds);
- 300 compressed natural gas (CNG) buses purchased, as planned;
- Public transport network optimization taken place and public transport infrastructure improvements carried out, as planned;
- Existing public transport dispatch center and the taxi management system and data center upgraded, as planned, through (i) the construction of an intelligent transport data center and the data integration project, (ii) the procurement of ITS hardware, (iii) the development of a regular taxi service management system, (iv) the development of a software application for Harbin ITS-Taxis, and (v) the procurement of a Taxi Service Management Information System hardware.





The project activities expected to lead to the achievement of this objective were carried out, and the related outputs were achieved or exceeded.

## Outcomes

The outcome indicator related to this objective of "endorsing the policy framework by at least 3 large cities" was achieved. According to the PAD (para 42) "endorsing" means to put the policy framework into practice during project implementation.

Suzhou, Chengdu, and Harbin provided official endorsement letters through which they acknowledged the national level TA and policy studies as key inputs to formulate and implement the local level transport strategy and policy. As examples, Suzhou, Chengdu, and Harbin (i) adopted recommendations from the national level TA Study on Synergy Policies between City's Transport Planning and City's Master Plan in new master plans under development to improve the integration of land use and transport planning, (ii) applied the recommendations of the national TA on Integrated Passenger Hub Layout Planning and Function Optimization Guidelines to the Suzhou railway station, the Suzhou North railway station, the Chengdu Jinsha bus terminal, the Chengdu East passenger hub, the Chengdu North passenger hub, local passenger hubs in Harbin, and the Harbin municipal-level integrated transport hub development plan, and (iii) used the Technical Standard on Information Exchange and Service Mechanism for Urban Integrated Passenger Hubs in constructing the Haxi Passenger Hub in Harbin (ICR, para 38).

In addition, many of the project activities in the three cities contributed to larger and more comprehensive interventions. For instance, the studies on BRT lanes in Suzhou led to the implementation and operation by the city of three BRT lanes and the study on public transport priority in Chengdu led to a citywide public transport network optimization. Several of these interventions reduced local and greenhouse gas emissions, such as the public transport system improvements, P&R parking lots, or cleaner bus fleets. Other activities have the potential to do so in the future, like the master plans aligned with good principles of land use and transport planning integration.

In Suzhou, the project contributed to an increase in the bus ridership in the city center area from 170,000 passengers per hour to 255,863 passengers per hour, which is 116 percent of the project end target of 220,000 passengers per hour. It also contributed to an increase in bus speeds during peak periods in the city center from 22.1 to 25.3 km per hour, which exceeds the project end target of 24 km per hour by six percent. Finally, it contributed to a reduction of 1.02 million tons of urban transport related CO<sub>2</sub> emission in 2017 compared to the business as usual scenario, which is 248 percent of the project end target of 410,000 tons.

In Chengdu, the project contributed to an increase in the bus ridership in the project affected area from 20,000 passengers per hour to 33,300 passengers per hour, which is 111 percent of the project end target of 30,000 passengers per hour. It also contributed to an increase in bus speeds during peak periods in the project affected area from 13 to 18 km per hour, which exceeds the project end target of 16 km per hour by 13 percent. Finally, it contributed to a reduction of 1.33 million tons of urban transport related CO<sub>2</sub> emission in 2017, which is 211 percent of the project end target of 630,000 tons. The ICR (para 47, footnote 19) notes that the air quality index in Chengdu improved from 4.69 to 4.21, but it is not known how much can be attributed to the project.





In Harbin, the project contributed to an increase in the bus ridership in the project affected area from 64,000 passengers per hour to 94,000 passengers per hour, nearly achieving the target of 96,000 passengers per hour. It also contributed to an increase in bus speeds during peak periods in the project affected area from 18 to 23 km per hour, which exceeds the project end target of 22 km per hour by 5 percent. Finally, it contributed to a reduction of 480,000 tons of urban transport related CO<sub>2</sub> emission in 2017, which is 120 percent of the project end target of 400,000 tons.

Finally, the task team clarified that in Harbin, the ridership and bus speed measurements were taken on the corridor implemented under the project, hence the results are fully attributable to the project. In Chengdu, they are at a corridor-level and in Suzhou at the level of the historical city. In these two cities, on the one hand, not everything that contributed to the ridership and speed improvements was part of the project. On the other hand, several project interventions, especially the ITS applications, had a citywide application in both cities. Therefore, although the results in the locations where the measurements were taken might not be 100 percent attributable to the project, the project might have had wider impacts that were not measured because of the difficulties to do so.

The task team also clarified that for the greenhouse gas emission reductions, the measurements were taken at the citywide level in all three cities, and hence the results are not fully attributable to the project. Originally, the Bank task team had envisaged a methodology that looked at the area of the project interventions only, but in discussions with the GEF before their approval of the project, it was agreed to measure the greenhouse gas emission reductions at the citywide level.

Rating  
High

## OBJECTIVE 3

### Objective

GEF Objective: To reduce greenhouse gas emissions directly from a business-as-usual scenario through improved bus speeds and modal shifts to public and non-motorized transport in the three pilot cities, and indirectly through replication of the successful pilot actions that would be supported by central policy, strategy and technical guidelines developed under the project.

### Rationale

The **theory of change** for the GEF objective was that the activities and outputs described in the theories of change of objectives 1 and 2 above would lead to (i) the adoption by the MOT of a national policy framework to alleviate traffic congestion and reduce greenhouse gas emissions and (ii) the implementation of this framework in the three project cities through PTD and TDM measures. These measures were to increase public transport speeds and improve its quality. They were also to make car driving more onerous and improve NMT. This, in turn, was to cause a switch from cars to public transport and NMT and reduce congestion. In addition, traffic management measures were also expected to directly reduce congestion. Less car travel and congestion were expected to reduce greenhouse gas emissions. In addition, under the assumption that the national policy



framework had a strong top-down effect also on other Chinese cities and that the pilot interventions in the three project cities were successful and had a strong demonstration effect, these other cities would also carry out similar sustainable urban transport improvements, which, in turn, would further reduce greenhouse gas emissions.

## Outputs

The main project outputs are the same as mentioned under objective 2 above.

## Outcomes

As shown under objective 2 above, the project contributed to enhance public transport speeds and ridership. The respective project end outcome indicator targets were exceeded in all three cities, except for the public ridership in Harbin, which reached 98 percent of its target. The outcome indicator targets for annual greenhouse gas emissions reductions in the three pilot cities were substantially exceeded.

The interventions under the project or carried out by the three cities themselves during the project period contributed to greenhouse gas emission reductions of 56.64 million tons over the estimated interventions' life of 20 years. This does not include the indirect impacts of the project in terms of greenhouse gas emission reductions in other Chinese cities. The ICR (annex 6) estimates that these indirect reductions could be as much as 264.46 million tons.

Therefore, although, as previously mentioned, not all emission reductions can directly be attributed to the project, it is likely to have significant indirect impacts, which have not been accounted for.

## Rating

Not Rated/Not Applicable

## OVERALL EFFICACY

### Rationale

The technical advisory services and studies at national level, the institutional strengthening and capacity building and the M&E activities directly influenced and shaped the Chinese policy framework to alleviate traffic congestion and reduce greenhouse gas



emissions. This policy framework was endorsed in the three pilot cities, which implemented PTD and TDM measures with the support of the project and on their own. These measures resulted in improvements in the public transport system, increased ridership, and higher speeds, and eventually led to greenhouse gas emission reductions that significantly exceeded the project outcome targets.

### Overall Efficacy Rating

High

## 5. Efficiency

### Economic Efficiency

Because of the nature of the policy and technology-related nature of most project interventions, the PAD does not include a cost benefit analysis (CBA), but it has an assessment of the environmental benefits of the project interventions (annex 6). This assessment showed that the greenhouse gas emission reductions of the project over its lifetime of 20 year would be 32.12 million tons. The greenhouse gas emission reduction calculation was revised for the 2016 restructuring using a refined and more precise methodology. This showed an emission reduction potential over the project's lifetime of 29 million tons (2016 RP).

At project closing, the greenhouse gas emission reduction calculation was repeated. In addition, (i) a cost effectiveness analysis of the GEF grant to reduce CO<sub>2</sub> emissions and (ii) an ex-post CBA of selected interventions in the pilot cities were carried out.

The greenhouse gas emission calculations applied the same methodology used for the 2016 restructuring (ICR, annex 6). This methodology is in line with what is normally used to calculate emissions from transport interventions. It compares a business as usual scenario with a scenario that considers the project interventions (GEF scenario). The project interventions included public transport improvements and travel demand and parking management measures. The assumptions used in the calculation, such as for the increase of annual passenger volumes per person and the treatment of trips originating from within and outside the city, were reasonable. The calculations showed total emission reductions over the lifetime of the project of 56.63 million tons. This is 95 percent more than the estimate of the 2016 restructuring of 29 million tons.

In terms of cost effectiveness of the GEF grant to reduce CO<sub>2</sub> emissions, in the ICR (annex 4) the GEF grant amount of US\$17.61 million was divided by the total amount of emissions reduced over the lifetime of the project. This yielded a GEF unit cost of US\$0.31 per ton of CO<sub>2</sub> reduced. In the ICR, this calculation was repeated for the total project cost of US\$121.74 million, which yielded a unit cost of US\$2.2 per ton of CO<sub>2</sub> reduced. The GEF unit cost per ton of CO<sub>2</sub> reduced by the project was compared with the GEF unit cost of four other GEF projects in China, India, and Latin America. The GEF unit cost of these projects ranged between US\$4.14 and 24.5 per ton of CO<sub>2</sub> reduced, hence this project was the most cost effective one in terms of GEF unit cost per ton of CO<sub>2</sub> reduced.



The ICR also points out that the estimate for this project is conservative because the emission reductions from the impact of the national policy framework on other cities and the demonstration effect of the interventions in the pilot cities were not considered.

The ex-post CBA (ICR, annex 4) was carried out for the following two interventions:

- The dedicated 6 km bus lane in Harbin, for which the improvements can largely be attributed to the project since it was financed with counterpart funds for a total cost of about US\$11 million, and
- The entire pilot in Suzhou, which consisted of a holistic city-wide improvement for an estimated cost of US\$46.05 million.

For the Harbin bus lane, the analysis period for the bus lanes was 20 years and for the buses it was eight years. The discount rate was seven percent. The benefits only considered travel time savings of users because this is the main benefit and the necessary data was available. The assumptions used were simplistic but reasonable. The analysis yielded an economic internal rate of return (EIRR) of 47 percent and a net present value (NPV) of US\$44.91 million. The sensitivity analysis showed EIRRs between 34 and 46 percent for all scenarios tested.

For the interventions in Suzhou, the same benefits, analysis period, discount rate, and assumptions were used. The CBA yielded an EIRR of 26 percent and a NPV of US\$134.71 million. The sensitivity analysis showed EIRRs between 11 and 26 percent for all scenarios tested. However, in Suzhou substantial investments beyond the project took place, hence this rate of return is not fully attributable to the project.

Note: The rate of return of 30.05 percent shown in the table below is the weighted average of the EIRRs of the two project interventions.

## **Administrative Efficiency**

The actual project cost was six percent higher than the appraisal estimate. However, during the 2016 restructuring additional activities were added because several biddings had resulted in lower prices than expected. The project was implemented in slightly more than five years, which is reasonable for a project involving a large number of biddings, including civil works, and the national government and three cities. The six-month extension was necessary mainly to complete the new activities introduced with the 2016 restructuring. The ICR (annex 4, para 22) also highlights that the staff time and cost spent on this project was efficient because it had the lowest ratio of staff time and cost to the total grant amount among similar GEF transport projects in China, India, and Latin America.

## **Efficiency Rating**

Substantial



a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate	<input type="checkbox"/>	30.05	47.00 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## 6. Outcome

The project fully achieved its PDO, which was highly relevant at appraisal and at project close. Achievement of both objectives was rated high, and the efficiency of the project was rated substantial. Therefore, the overall project outcome is rated highly satisfactory.

a. **Outcome Rating**  
Highly Satisfactory

## 7. Risk to Development Outcome

The risk to development outcome is considered modest for the following reasons:

- **Government ownership and commitment.** There is a negligible risk that the policy framework already enacted will be reversed since these measures are in line with the highest national and city priorities. The implementation of the policy framework has taken place in the three pilot cities, which enhanced their capacity and were successful in increasing public transport ridership. Therefore, they are likely to continue with sustainable urban transport policies. In addition, the TransFORM platform constitutes a sustainable basis for knowledge sharing on project outputs and results, which are likely to encourage other Chinese cities to implement similar measures.
- **Technical.** Many of the interventions under the project involved technical and ITS applications, which have the potential of becoming obsolete quickly, and hence might have to be upgraded.
- **Financial.** The Recipient financed nearly 90 percent of the project cost. In addition, the national government manages the nationwide PTM program, which provides specific funding for public transport infrastructure development and service improvement in large cities.



- **Social.** Some of the TDM measures analyzed under the project, such as congestion pricing, are difficult to implement because of stakeholder opposition. The ICR (para 101) that the cities are applying a ladder approach by breaking down TDM measures into a series of incremental steps, each of which is politically acceptable and would build awareness and acceptance for stronger steps in the future.

## 8. Assessment of Bank Performance

### a. Quality-at-Entry

**Quality at entry is rated satisfactory.** The Bank team ensured that the project design built on the government's development priorities and was closely aligned with the Bank's engagement strategy. The Bank team supported the Recipient in project design and implementation. According to the ICR (para 71), extensive awareness raising events and TA during project preparation helped fill knowledge gaps and gain buy-in from national and pilot cities to implement unconventional and politically sensitive measures. These measures needed mindset changes, such as integrating land use and transport planning, differentiated parking pricing, integrating ITS with PTD and TDM, and greenhouse gas emission monitoring.

The Bank team mobilized its global network to provide extensive TA to prepare the terms of reference for the studies and TA activities at national level. The Bank team reflected lessons from past projects in the project design by limiting the number of pilot cities to reduce the project's complexity and through the review and guidance in shaping the project concept (ICR, para 71).

The project had a logical results chain and the M&E system design was adequate. The institutional arrangements were sound. The Bank team adequately handled the safeguard and fiduciary requirements. Risks were adequately identified, and mitigation measures were mostly sound. Although procurement risks were identified and partially mitigated through enhanced support from the national project management office (PMO) to the cities and from the Bank, the efforts needed to manage the large number of contracts were underestimated. Efficiency gains could also have been obtained by packaging individual consultants contracts into firm contracts.

The ICR (para 95) notes that the client spoke highly of the design of the project, which truly brought added value to the national and local governments.

### Quality-at-Entry Rating

Satisfactory



## b. Quality of supervision

The Bank team supported project implementation by focusing on technical aspects and project management. It provided timely and adequate support to the Recipient to progress towards achieving the PDO. The task team carried out two regular supervision missions per year and technical missions and meetings as needed to support the Recipient in addressing issues and ensure the quality of the TA activities. Bank supervision benefited from the presence of the TTLs and key members in Beijing, which facilitated the day-to-day implementation support.

The Bank team mobilized global knowledge throughout project implementation and strongly supported the procurement activities. The Bank team satisfactorily handled safeguard and financial management issues. However, the Bank task team did not insist with the Recipient on collecting public transport ridership data in gender disaggregated manner nor did it revise the M&E system to capture gender impacts as envisaged in the PAD (para 52).

According to the ICR (para 97), the Bank team's strong technical involvement in the implementation of studies and TA activities created a platform for the Bank to bring international experience in the formulation of future policies for the transport sector in China. It cites the example of high-level round tables and workshops organized for the client on global experiences of congestion reductions, which gathered the top decision makers from large metropolitans around the world.

The ICR (para 35, footnote 11) points out that, based on the interviews, the counterpart appreciated the technical innovation and hands-on learning from working with the Bank team and external international consultants funded through the project because it would not have been easy to mobilize this expertise without the project.

The ICR (para 98) also notes that the Bank team's engagement at the national level and in the pilot cities was instrumental in providing the Bank "a place at the table" to shape urban transport policy and technical directions in China. In this context, the Bank contributed to China's paradigm shift in PTD and the advance in TDM to alleviate traffic congestion and reduce greenhouse gas emissions.

### Quality of Supervision Rating

Satisfactory

### Overall Bank Performance Rating

Satisfactory

## 9. M&E Design, Implementation, & Utilization

### a. M&E Design



The M&E system was reasonably well designed. The results framework included five outcome indicators, which were causally linked to the PDO, and were adequate to measure the project achievements. The PAD (paras 39 to 44) also included a section with descriptions and guidance to measure the project outcomes. Some terms in the outcome indicators, such as "policy framework" and "endorsement" would have benefited from more clarity on their meaning. The project had several intermediate results indicators that helped track the project implementation progress.

All indicators had baselines and realistic project end targets. The data sources and data collection responsibilities were defined. Measuring greenhouse gas emission reduction was identified as a challenge at appraisal and the project set aside resources for technical assistance to develop a methodology and collect the necessary data.

The PMO was in charge of the overall M&E, with inputs from the local PMOs. Resources from the GEF grant were allocated for M&E.

## b. M&E Implementation

The national and local PMOs regularly reported the M&E data to the Bank in the required format. In addition to the data for the outcome and intermediate indicators, they tracked the impact of the TA activities and provided evidence on the adoption and use of plans, policies, or strategies through official endorsement letters. The M&E data collected was adequate to assess the achievement of the PDO and the project progress. The task team pointed out on August 15, 2019 that each year there were delays in reporting the values for the indicator on greenhouse gas emission reductions. Consequently, the M&E rating was moderately satisfactory during most of the project implementation period.

During the 2016 restructuring, some of the indicator targets were revised slightly to reflect a greater ambition and the availability of a more accurate methodology to assess the greenhouse gas emission reductions developed under the project.

## c. M&E Utilization

The ICR (para 86) notes that the M&E data was proactively used to deal with identified issues and support the MOT and the Bank in making decisions on project implementation. The task team specified on August 15, 2019 that they used this data mainly to track the implementation progress from one reporting period to the other. It was also used for project restructuring.

## M&E Quality Rating

Substantial

## 10. Other Issues





### a. Safeguards

The project was classified as category B for environmental assessment purposes because the potential impacts of the project were expected to be mainly construction-related, small, and site-specific. They were expected to be readily avoided and mitigated with good management practices for construction and operation.

All project activities were limited to the right of way of existing urban streets, with no need for land acquisition or resettlement. Therefore, only OP4.01 Environmental Assessment was triggered. Due to the minor environmental impacts which could be avoided, minimized, and mitigated with good design and construction management, an Environmental Management Plan (EMP) was developed by Chengdu and Harbin. The EMPs included a screening of the potential environmental impacts and standard environmental codes of practice. These codes formed part of the construction contracts to mitigate potential environmental and social impacts. In Suzhou, an Environmental Management Framework (EMF) was prepared to guide the environmental assessment during the feasibility study of the bus lanes. The EMPs and EMF were disclosed.

The ICR (para 91) notes that the implementation of the EMPs was satisfactory during project implementation and no legacy environmental issues were identified in any of the three cities. It also notes (para 90) that no land acquisition or resettlement took place. The safeguards implementation performance at project close was rated satisfactory.

### b. Fiduciary Compliance

**Procurement.** The ICR (para 92) notes that the project complied with the Bank procurement rules and procedures and the project's procurement performance was satisfactory. The project had delays in the selection of large TA contracts because the Recipient was not familiar with Bank procurement rules and procedures. This unfamiliarity was addressed through additional support from the national PMO and the Bank team and through individual procurement experts or procurement agents hired at national and city level.

The ICR (para 91) notes that the government auditor identified sporadic cases of irregularities by consulting firms mostly associated with the authenticity of information provided in the proposals and contract administration. The task team clarified that the irregularities consisted of not allocating the key staff mentioned in the proposals to the studies. It happened in two or three cases. The PMO followed up on this matter and took prompt remedial actions. The procurement performance at project close was rated satisfactory.

**Financial management.** The ICR (para 92) points out that the project complied with all applicable financial management policies. Although some project interim financial reports were submitted to the Bank with slight delays, they were of sound quality and were acceptable to the Bank. All audit reports had unqualified opinions, and no



significant financial management related control weaknesses were highlighted. The transfer of the designated account from the Ministry of Finance to the MOT ordered by the former caused project implementation delays. The financial management performance at project close was rated satisfactory.

c. Unintended impacts (Positive or Negative)

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d. Other

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## 11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Highly Satisfactory	Highly Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

## 12. Lessons

The following are lessons from the ISR with some modification in language from IEG:

- **Leveraging existing knowledge sharing and dissemination channels may enhance the demonstration effect of the project.** In this case, project the TransFORM platform was used to effectively engage a wider network and broader audiences in China on project issues at a much lower cost. This enabled to scale up the demonstration effects of national and local activities, which is reflected in the much larger number of people trained than originally envisaged.
- **Projects focusing on policy development, which involve both the national and local governments, may help the Bank strengthen its convening power in the sector.** The Bank team provided international experience and involved policy makers and leaders in the MOT, the project implementation units, pilot cities, and academia during the preparation and implementation of several studies. This created a platform through which the Bank deepened the engagement with the national government and strengthened its convening power in the transport sector. The Bank increased its role in influencing policy development in the MOT.



It provided the MOT leadership with key inputs to deliberate on policy development, including to prepare the 13th Five-Year Plan and several key policy documents.

- **Involving national and local governments through upstream and downstream interventions may improve PTD and TDM approaches.** The influencing power of national policy on cities can encourage local governments to take action. This is more cost-effective compared to dealing with individual cities on an individual basis. The demonstrations activities in the pilot cities created a feedback loop to shape national policies because the national government and major think tanks involved the pilot cities in consultations during policy formulation.
- **An incremental approach to TDM may enhance the chances of its success.** Implementing TDM measures is challenging because of the resistance of the affected people. Under this project, the pilot cities, with the support of the national government, were able to avoid resistance by using an incremental TDM approach. This approach modulated the menu of pricing policies, restrictions, and interventions to the political and economic realities of each city. It started with a gradual implementation of the measures with the least resistance, such as the parking policies.

### 13. Assessment Recommended?

Yes

Please Explain

This is a project that helped set up a national policy framework for sustainable urban transport and highly successfully piloted several measures at local level. Therefore, a better understanding, obtained through a PPAR, of the underlying factors of success and the potential for replication in different contexts would be valuable for many Bank client countries.

### 14. Comments on Quality of ICR

This is a comprehensive, rich, well-written, and structured ICR. It cites studies and literature to support the narrative, such as the IEG evaluation on urban transport and the Bank's transport strategy and capital increase requirements.

The ICR sets out a clear causal chain for the project and follows it when presenting the outcomes in a results-oriented ways. For instance, the ICR assesses how the outputs of the different TA activities were used. It discusses the attribution to the project and provides additional evidence to support project achievements, such as the increase in public transport modal share in cities, the number of views of case studies online, and public transport satisfaction surveys. However, sometimes the richness of information, not all directly relevant to support the results, is overwhelming and gets the reader slightly off focus.



The efficiency assessment and the greenhouse gas emission reduction calculations are sound. The safeguard and fiduciary sections are concise and contain all necessary information. The ICR also contains several detailed and useful annexes.

However, the ICR seems not sufficiently critical. It largely focuses on the project's successes, with limited attention to areas of improvement. The ICR also contains several affirmations that are not supported by evidence. For instance, in para 55, the ICR mentions that "the project has been successful in indirectly reducing greenhouse gas emissions through the replication of the pilot actions", but it does not provide information on the replication of pilot actions in other cities. Similarly, in para 82, the ICR notes that the indicator "targets were ambitious" without giving the basis for this affirmation.

**a. Quality of ICR Rating**

Substantial