



1. Project Data

Project ID P127867	Project Name Qinghai Xining Urban Transport Project	
Country China	Practice Area(Lead) Transport	
L/C/TF Number(s) IBRD-83190	Closing Date (Original) 30-Sep-2019	Total Project Cost (USD) 115,551,101.74
Bank Approval Date 27-Dec-2013	Closing Date (Actual) 30-Aug-2021	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	120,000,000.00	0.00
Revised Commitment	115,551,101.74	0.00
Actual	115,551,101.74	0.00

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2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) as articulated in the Loan Agreement (page 4) and the Project Appraisal Document (paragraph 16) was **to enable Xining residents to travel between the city center and the western part of Xining City in a fast, efficient and safe manner, through strategic improvements to Wusixi Road, a major transport and urban development corridor.**

For the purpose of this review, the PDO will be assessed as follows:



PDO 1 - To enable Xining residents to travel between the city center and the western part of Xining City in a **fast and efficient manner**, through strategic improvements to Wusixi Road, a major transport and urban development corridor.

PDO 2 - To enable Xining residents to travel between the city center and the western part of Xining City in a **safe manner**, through strategic improvements to Wusixi Road, a major transport and urban development corridor.

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 consisted of four components:

Component 1. **Urban Roads** (appraisal cost US\$182.98 million; actual cost US\$154.9 million). This component intended to finance construction of three short road sections (in total about 10 km), which were part of the planned integrated public transport corridor and are necessary for the newly developed Xichuan District in the west of the city.

Revised Component: The September 2019 restructuring (see below, Dates) added upgrades of Qiyi Road, Delingha Road, and Bayi Road (that were linked to the main public transport corridor, Wusixi Road, improvement of which is financed by the Project) using Integrated Corridor Management (ICM) principle. Integration of public transport priority measures, pedestrian and bicyclist facilities, and bus stops, and shelters were also included in the upgrade of these roads. Wuyi Road was also added to connect from the project bus corridor (Wusixi Road to Qiyi Road). This connection was to promote non-motorized transport (NMT) and encourage more people to choose public transport.

Component 2. **Public Transport** (appraisal cost US\$53.94 million; actual cost US\$61.8 million). This component was expected to finance improvements to public transport infrastructure, operations, and complementary facilities on the planned integrated public transport corridor on Wusixi Road. Major improvements included: (i) construction of dedicated bus lanes and safe and accessible bus stops and terminals; provision of bus priority signals, safe and accessible pedestrian crossings, pedestrian paths, bicycle lanes and other NMT facilities; (ii) installation and operation of a new bus dispatching system utilizing intelligent transport systems (ITS) and advanced public transport management; (iii) procurement of new clean, safe and user-friendly buses; and (iv) construction of a public transport interchange at the western end of Wusixi Road .

Revised Component: The restructuring added the provision of 73 electric bus charging stations and 1,648 on-board bus units (passenger flow analysis systems). The location of the public transport interchange (PTI) was changed from Yanxiaocun to Wangjiazhai, located at the western end of Wusixi Road (consistent with



the PAD and the Loan Agreement). Two access roads (Guihua 1 Road and Guihua 2 Road) were dropped because they were no longer necessary due to the PTI location change.

Component 3. **Intelligent Traffic Management** (appraisal cost US\$9.63 million; actual cost US\$7.7 million). This component supported the development of an intelligent traffic management system and included investments in installation and operation of: (i) a traffic command center; (ii) an area traffic control (ATC) system; and (iii) equipment for advanced traffic monitoring, enforcement, and information services, such as closed-circuit television (CCTV) monitoring cameras, traffic enforcement cameras, variable message signs, a data collection and analysis system, and the fiber optical network.

Revised Component. The restructuring dropped some traffic enforcement equipment including portable enforcement recorders, and instead added: a video surveillance system, an image forensics system, an intelligent vehicle monitoring system, a camera monitoring system, a traffic signal system upgrade, and analytical activities to connect the two ITS platforms and for signal light improvements

Component 4. **Institutional Capacity Building** (appraisal cost US\$3.81 million; actual cost US\$2.83 million). This component would improve the city's institutional capacity for urban transport planning and management through financing the following activities: (i) strategic studies in support of achieving the PDO and the city's development goals; (ii) training and knowledge exchange for government officials and technical staff involved in urban transport planning, public transport service planning and management, and traffic and safety management; and (iii) project management support including project monitoring and evaluation and technical consultancies for implementation of the ICM approach.

Revised Component. The restructuring dropped "Bus Route Optimization Study", "Transit Metropolis Study", and "Parking Strategy", all of which were underway or already completed with counterpart funding. It added "Evaluation of Xining Bus Metropolis Implementation Progress Study" and "Study on Road Networks Carrying Capacity".

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

Project Cost: The actual project cost was US\$232.9 million (Annex 3) (ICR page 2 reports US\$ 228.4 million), lower than the appraisal cost US\$250.66 million.

Financing: The actual loan amount disbursed was US\$115.55 million, lower than the original amount of US\$120.0 million.

Borrower Contribution: The actual Borrower Contribution was US\$112.83 million, lower than the planned amount of US\$130.66 million.

Dates and Restructuring: The project was approved on December 27, 2013 and made effective on May 21, 2014. The Mid Term Review (MTR) was conducted on November 14, 2016. The original closing date was on September 30, 2019. The project was extended by 23 months to close on August 30, 2021. The project underwent two Level II restructurings:

- As of August 2019, the project had savings of US\$15.5 million due to: competitive bidding; a change in the exchange rate; the financing of some activities by counterpart funding instead of the loan as envisaged at appraisal; and adjustments to activities (ICR paragraph 15). The **September 26, 2019**



restructuring increased the project scope to utilize project savings (see above under components); revise the PDO-level indicators to reflect added project scope and to reflect replicability and best practices to enable precise measurement and effective progress tracking; and extend the closing date by 20 months from September 30, 2019, to May 30, 2021 to allow for completion of the additional works (ICR paragraph 13). Contributory factors to the delay included Xining Municipal Government 's (XMG's) decision to keep the roads open to traffic during implementation, slowing construction progress, and design revisions following a road cave-in accident in January 2020 (ICR paragraph 16).

- The **May 27, 2021** restructuring further extend the closing date by 3 months, from May 30, 2021, to August 30, 2021 to fully use the loan proceeds, taking into account the outbreak of COVID-19 (ICR paragraph 13).

Split rating. Although the results framework, including some indicator targets, were revised, this review will not use the split rating methodology because the target values became more ambitious.

3. Relevance of Objectives

Rationale

Context and Sector Context. In the last thirty years, China has experienced rapid economic growth which has resulted in unprecedented urbanization. However, urbanization has happened disproportionately in different regions of China, with an urbanization ratio of 61 percent in the eastern region, 47 percent in the central region and 43 percent in the western region. (PAD paragraph 1). In 2000, the Government of China (GoC) launched the Western Development Strategy, a policy aimed at promoting the socio-economic development of the western region – understood to be lagging relative to the other regions.

Xining, the capital of Qinghai Province had grown as a compact city with high share of non-motorized transport (NMT, 42.7 percent) and public transport (40.0 percent). The urban footprint of the city was gradually expanding especially toward west to areas so that walking was no longer a viable option, and new multilane roads had been built to serve new communities, coinciding with rapid car ownership increase with 14.7% annual growth over the previous decade. The quality of public transport services had declined due to inadequate investments in institutional capacity (e.g., service planning), bus fleet as well as infrastructure. Increases in traffic congestions deteriorated quality of service of public transport (e.g., speed, on-time performance) due to sharing roads with congested vehicular traffic, further deteriorating bus ridership. The pedestrian environment also worsened due to motorization and weak performance of traffic management, road safety, parking management and law enforcement.

Relevance to Government Strategies. The State Council, the highest governing body of the GoC, had issued Directive 46 (2005) which positioned urban public transport as a national priority and Directive 64 (2012) which set the objectives and policy guidance to improve urban public transport. The project objectives contributed directly to the 12th Five Year Plan (FYP), which emphasized the importance of actions to address urban transport issues - through the development of high quality public transport services, non-motorized transport amenities, and supportive urban planning practices and policies.



At completion, the PDO remains fully consistent with government priorities stated in the most recent 14th FYP for the period 2021-2025, approved in March 2021. The plan highlights high-quality, green development. One of the four main areas of the FYP's objectives is Environment and Climate Change: toward carbon neutrality. The FYP has set targets to reduce energy and carbon intensity by 13.5% for energy and 18% for carbon intensity per unit of GDP, as it promotes low-carbon development with new approaches to transport.

Relevance to Bank Strategies. At appraisal, the PDO was in line with Bank's FY2013-16 Country Partnership Strategy for China, which, among others, focused on supporting greener growth as one of its two strategic themes of action, with "the promotion of low carbon urban transport" chosen as a specific outcome to pursue under it.

At completion, the PDO remained in line with engagement area 2. Supporting greener growth of the Bank's FY20-FY25 Country Partnership Framework, which promoted low-carbon transport, among others.

The PDO remains relevant to the World Bank Group Climate Change Action Plan (CCAP) 2021-2025 - Supporting Green, Resilient, and Inclusive Development, which lays out the path forward to align all International Bank for Reconstruction and Development (IBRD) financing to the Paris Agreement by June 1, 2023 and prioritizes transport as a sector for key system transitions.

Previous Sector Experience. The Bank has a long engagement in the urban transport sector in China. An integrated corridor management (ICM) approach was used in Bank's urban transport operations in Liaoning, Wuhan, Anhui, Changzhi and Xiangyang. Through this project, the Bank would expand ICM along the Wusixi Road corridor in Xining. The innovative aspect of this project is the introduction of emerging electric fleet technology in a seasonal low temperature environment.

The relevance of objectives is rated **high**. This rating reflects the PDO's high relevance in the country context and with government's priorities and the full alignment with Bank priorities.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To enable Xining residents to travel between the city center and the western part of Xining City in a fast and efficient manner, through strategic improvements to Wusixi Road, a major transport and urban development corridor.

Rationale



The **theory of change** for Objective 1 was that the **activities** to (i) construct urban roads; (ii) improve public transport corridors, (ii) construct interchanges; (iii) install Intelligent Transport System (ITS); (iv) install an advanced bus management and dispatching system; and (v) prepare urban transport-related studies would have as **outputs** (a) physical improvement in the public transport corridor; (b) interchanges prioritizing public transport; and (c) an advanced public transport system. In terms of **outcomes**, this was to reduce the travel time of public transport users and enable residents to travel faster and efficiently between the city center and the western part of the city.

The main assumptions were that (i) the public transport demand would remain efficient for economic and financial viability; and (ii) the public transport users would continue to be satisfied by the public transport system and would continue using public transport.

Outputs.

- Urban Roads. The targets for construction of urban roads were achieved. The original indicator at appraisal was "Length of urban roads constructed" in kilometers, and the target was 8 km in light of the original scope, Xicheng Avenue, Wusixi Road, and Road No. 5, aggregated. The 2019 restructuring expanded the scope to include: Qiyi Road, Qiyi Road, Delingha Road, Bayi Road, and Wuyi Road. The restructuring also revised the indicator to "Percentage of constructed road quantities", disaggregated by segment and reflecting the updated project scope and timeline. The targets were achieved for all road segments at the project closing (ICR page 45).
- A public transport corridor along Wusixi road (23.4 kilometers, in length) was constructed/upgraded with dedicated bus lanes and a variety of facilities for public transport, non-motorized vehicles, and pedestrians;
- Construction of the Wangjiazhai Public Transport Interchange;
- 53 signalized junctions installed/upgraded, exceeding the revised target of 43; 46 bus priority junctions were implemented, exceeding the revised target of 34.
- Equipment for advanced traffic monitoring, enforcement, and information services was installed. This included (a) 126 image forensic systems for road traffic offenses were installed, exceeding the revised target of 111 (Digital forensic is the specification of the entire processes of crime-related digital evidence data collection, transport and analysis such as videos, photographs, voice files, etc. stored in digital devices. To keep the original data, copies thereof need to be generated and such copies should be proven identical to the originals. And data are accepted by court only when securing admissibility through such a due process); and (b) 93 high definition (HD) video monitoring systems were installed, exceeding the revised target of 70. These are in use and have enabled the law-enforcement to monitor traffic violations of cars driving in the bus priority lanes during the restricted hours to ensure bus operations remain on schedule (ICR paragraph 29).
- 145 units of the electric buses (E-buses) were procured, as targeted and a charging station for electric buses was constructed with total 73 charging points, as targeted.
 - The E-buses improved the riding experience of passengers and provided a better working environment for drivers. As Xining experiences extremely cold weather in winter, the buses are equipped with heating for passengers and drivers (ICR paragraph 36).
 - The E-buses are friendly to vulnerable groups, and included features such as lower steps for women and seniors to climb onto the buses, designated seats for pregnant women, seniors and children, and lower bus handle for women and children.
- A new public bus hub was constructed with the capacity of 10,000 passengers per day.
- 61 bus stops were improved, exceeding the target of 56.



- Development of an area traffic control (ATC) system, with advanced traffic monitoring and management facilities and equipment; the system was developed with total 267 units of facilities and equipment procured under the project; and 6 types of traffic management computer applications and vehicles were developed and procured;
- An intelligent public transport management system was developed and used for the whole Xining;
- An advanced public transport system was developed (bus dispatching and management system, electronic signs and surveillance cameras at the bus stops), as targeted;
- In total, 5 technical studies were completed, as targeted. However, there were some changes. Three original studies (i) bus route optimization, (ii) transit metropolis study, and (ii) parking strategy and planning study; were dropped to avoid duplication of the studies because these were either underway or already completed with counterpart funding. Two studies (a) evaluation of Xining bus metropolis implementation progress study, and (b) study on road networks carrying capacity; were added during the restructuring. These studies were completed along with the original transit oriented (TOD) study which analyzed suitable TOD modalities and a management information system development study (ICR paragraph 66).
 - The TOD study was applied to the Wuyi Road design and implementation.
 - The Evaluation of Xining Bus Metropolis Implementation Progress study helped the city attain the honorary title of “Transit Metropolis” conferred by the Ministry of Transport in July 2021.
 - The study on Road Network Capacity and Future Traffic Improvement Strategies proposed the optimized strategies to improve Xining Road network capacity based on the data collection and simulation model. This study laid the foundation for city-wide road network optimization to enable citizens to travel from western areas of the city to opportunities and services in the city center.
 - The Management Information System (MIS) study helped the client on daily project management. Xining Urban Construction Company replicated this system in other infrastructure project management.
- 979 officials and technical staff were trained, exceeding the original target of 250. Government officials and technical staff participated in workshops, trainings, visits on urban transport planning, public transport service planning, road safety, and traffic management. The PMO staff went on study tours to Japan, Germany, Hong Kong, and Macao. The ICR reports (paragraph 45) that the exposure to global best practices in these locations has enabled reflection on the current practice and improvements are being made along other urban corridors in the city in an integrated manner.

Outcomes.

The project introduced ICM, a transformative concept in urban transport sector for the city: (i) bus priority has been provided on the project corridor, including dedicated bus lanes, bus priority signals and bus priority signs; (ii) an advanced bus management and dispatching system has been implemented; (iii) clean, safe and user-friendly buses has been procured; (iv) a public transport interchange has been constructed; (v) bike lanes and sidewalks have been improved in project corridor, enabling pedestrian friendly walking environment; and (vi) Intelligent traffic management has been put into operation to allow for better traffic flow during rush hours.

The project enabled Xining residents to use public transport to travel in a faster manner along the along the Wusixi road. The project invested in urban road features that give buses priority. The ICR notes (para 26) that by separating buses from other traffic such as private cars and bikes, buses were able to travel faster.



- The average travel time of public transport users during the morning peak period on weekdays on the project corridor at project completion (August 2021) was 32.77 minutes, almost achieving the target of 33 minutes. Baseline was 35.23 minutes.
- Average travel time between Haihu road to Changjiang road along Wusixi road at project was reduced from 19.2 minutes (baseline) to 17.95 minutes at completion (August 2021) - almost achieving the target of 18 minutes.
- Average travel time between Changjiang road Jianguo street along Wusixi road was reduced from 16.03 minutes (baseline) to 14.82 minutes at completion (August 2021) - almost achieving the target of 15 minutes.

The project enabled Xining residents to travel between the city center and the western part of Xining City in an efficient manner.

- At project completion, 461,724 beneficiaries were using public transport on the segment Haihu Road to Changjiang Road along Wusixi corridor, exceeding the target of 460,000 beneficiaries (baseline 440,000).
- At project completion, 208,044 beneficiaries were using public transport on the segment Changjiang Road to Jianguo Road along Wusixi corridor, exceeding the target of 180,000 beneficiaries (baseline 169,000).
- 85.3 percent of the public transport users were satisfied with the project corridor experience compared to the baseline of 39.86 percent), achieving the target.
- Deploying 145 Electric Buses reduced air pollution emissions from the city's bus fleet and improved the ridership experience (this was not measured).
- Bus service quality has improved as bus users are served by real time bus arrival information at 109 bus stops and mobile apps, which increased user satisfaction and punctuality.
- The outcome indicator "percentage of jobs accessible within a 45 minute commute using non-private transport (PT and walking) after the improvement of the project corridor" was achieved. At project closing, 83.6 percent of jobs along Wusixi Road were accessible by public transport, achieving the target of 82.7 percent.
- The integrated improvements to the Wusixi corridor and the public transport infrastructure and services supported the development of the Xichuan new area.

Rating

Substantial

OBJECTIVE 2

Objective

To enable Xining residents to travel between the city center and the western part of Xining City in a safe manner, through strategic improvements to Wusixi Road, a major transport and urban development corridor.

Rationale

The **theory of change** for Objective 2 was that the activities related to physical improvements on the public transport corridor such as (i) construction of dedicated bus lanes, (ii) providing safe and accessible bus stops



and terminals, (iii) installing bus priority signals, (iv) providing safe and accessible pedestrian crossings, pedestrian paths, bicycle lanes and other non-motorized transport facilities along the Wusixi Roads corridor would have as outputs (i) better traffic management; and (ii) improved traffic monitoring and enforcement. In terms of outcomes, this was to improve traffic safety along the center-west corridor. The key assumption was that better traffic management not only reduces transport accidents but also injuries and fatalities.

Outputs.

The outputs are the same as the ones for objectives 1.

As mentioned under objective 1, the project improved the road traffic safety environment for pedestrians and cyclists with safe and accessible bike lanes, crosswalks, bus stops, and other non-motorized facilities, which protect the vulnerable on the road.

The project also improved enforcement of traffic rules and regulations through intelligent traffic management, including an intelligent vehicle monitoring system, a traffic signal system upgrade, among other measures that promoted safe driving and discourage dangerous driving behaviors such as speeding and illegal stopping/parking.

The ICR reports (paragraph 51) that safety campaigns, education, and the training of citizens was carried out. It does not provide any figures.

Outcomes.

China Road Assessment Programme (ChinaRAP) rating of road safety risks on project roads was 4 or 5, exceeding the target of 3. The ICR notes (paragraph 50), however, that while demonstrating that the project realized the intended road safety improvements needed for achieving the PDO, the ChinaRAP also pointed to possible improvements that could further better safety performance for pedestrians and bicyclists.

Road fatalities or the number of people seriously injured on Wusixi Road (Xining Road to Tonghai Road) decreased from 4 at baseline to 1 at completion, exceeding the target of 3.

Rating

Substantial

OVERALL EFFICACY

Rationale

The project achieved its objective of enabling Xining residents to travel between the city center and the western part of Xining City in a fast, efficient and safe manner, through strategic improvements to Wusixi Road, a major transport and urban development corridor.



Overall Efficacy Rating

Substantial

5. Efficiency

Economic Analysis.

At appraisal, a cost-benefit analysis was conducted for the physical investment components whose direct economic benefits could be quantified (i.e., component 1 (urban roads) and component 2 (public transport)). These two components accounted for 94% of the total investment. The costs included the cost of construction, and operation and maintenance over the assumed project life of 25 years (PAD paragraph 35). Benefits included: (i) passenger travel time savings; (ii) vehicle operating cost savings; and (iii) reduction of traffic accident costs. A 12 percent discount rate was used. The overall economic internal rate of return (EIRR) of the project was estimated to be 16.1 percent and the net present value (NPV) was estimated to be US\$ 67.90 million. A sensitivity analysis was conducted, assuming 10 percent higher costs and 10 percent lower benefits, yielded an EIRR of 12.7 percent and NPV of US\$12.55 million.

The ex-post calculation used the appraisal methodology as well as the actual annual investment costs; annual routine operation and maintenance (O&M) costs; a period of 30 years (2014–2043) (which included eight years for project implementation and 22 years for project operation, including overlaps of construction and operation periods); a 12 percent discount rate; and actual traffic data on the project roads.

The EIRR at completion was 15.85 percent, slightly lower than that at appraisal estimate of 16.1 percent due to longer implementation period and lower traffic levels in recent years of operation due to the Covid-19 extended pandemic (ICR paragraph 57). The sensitivity analysis showed that with a 20 percent increase in operations and maintenance costs and a 20 percent benefit reduction, the EIRR would be 12.05 percent.

Administrative efficiency.

The project saved approximately US\$15.5 million (due to: competitive bidding; a change in the exchange rate; the financing of some activities by counterpart funding instead of the loan as envisaged at appraisal; and adjustments to activities (ICR paragraph 15). The September 26, 2019 restructuring increased the project scope to utilize project savings and extended the project by 20 months to complete these additional activities. The project completion date was further extended by 3 months to accommodate for unforeseen works delays due to the COVID-19 pandemic.

Overall, efficiency was **substantial**.

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	✓	16.10	94.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	15.85	93.00 <input type="checkbox"/> Not Applicable

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

6. Outcome

The relevance of objectives is rated High. The efficacy of the project to achieve its objective is rated Substantial, and its efficiency is also rated Substantial. The outcome of the project is rated Satisfactory.

a. Outcome Rating

Satisfactory

7. Risk to Development Outcome

Institutional support risk. This risk is assessed as low because the Xining Municipality Government has implemented the same ICM concept along other corridors of the city: Kunlun Road West Segment, Xiguan Dajie, Haiyan Road, and Binhe Road.

Technical risk. While the electric bus fleet is operational, there is a modest risk that the innovative technologies may not achieve the designed economic life. The performance of technologies for the project financed electric bus fleet is still emerging and financial viability especially in challenging operational environment such as in Xining (e.g., low temperature) is still being assessed.

Operation and Maintenance (O&M) risk. The assets developed through the project have been handed over to the authorities responsible for the respective components, for instance the electric bus fleet and related equipment to the Xining Bus Company, and ITS related systems and equipment such as traffic monitoring system to the traffic police. There is low risk of inadequate O&M as the authorities would be funding O&M through their regular budgeting processes.

COVID-19 Pandemic. In China the MoT set a “no more than 50% passenger load” rule during the outbreak. With the continuing COVID-19 pandemic, there is a moderate concern that people will not return to public transport at the old levels of demand due to fear of contracting COVID and because of the transition to remote work (ICR paragraph 37).

8. Assessment of Bank Performance



a. Quality-at-Entry

The task team benefited from experience in supporting many transport projects in China. The project design was based on lessons from urban transport projects' implemented in China, including Liaoning, Wuhan, Anhui, Changzhi and Xiangyang. Key lessons incorporated in the design were (a) measures to address the needs for effective coordination among different agencies involved, (b) strong support from the traffic police, (c) coordinated procurement schedules for various civil works, goods and consultancy activities, and (d) active communication with the general public on the ICM approach (PAD paragraph 25). As part of project preparation, a 10-day urban design workshop was carried out to explore specific strategies to adapt Transit Oriented Development (TOD) to local context and discuss it with local officials. Pilots to demonstrate street designs of TOD and the pedestrian environments improvement were incorporated into the integrated corridor component.

The task team rated the overall project risk as moderate and mainly flagged risks related to lack of familiarity with Bank's fiduciary and safeguards policies as the PMO was new to the Bank projects; difficulties in coordination among the various municipal agencies, and lack of knowledge regarding the 'soft' elements of the project such as the ICM, ITS, TOD and travel demand management concepts; and the lack of capacity to implement them with high quality. Mitigation measures were adequate. The (ICR paragraph 98) reports that the PMO benefitted from extensive trainings and workshops to build capacity, on critical areas such as procurement and financial management.

The original design of the results framework was adequate even if it could have been improved (for details see section 9). The Bank thoroughly assessed the environmental and social safeguards aspects of the project.

The project's quality at entry is rated **satisfactory**.

Quality-at-Entry Rating

Satisfactory

b. Quality of supervision

The task team provided satisfactory support to the PMO during the selection of technological solutions. For example, the PMO proposed procuring an electric fleet (e-buses) which was an emerging technology with limited operational experiences in challenging operational environment of Xining in terms of low temperatures. The Bank provided technical support to ensure the bidding documents and other steps would reflect considerations to mitigate technological risks.

The task team conducted the mid-term review in November 2016, just two years into implementation when the TTL changed. The MTR recognized savings from earlier biddings and initiated discussions on new activities to strengthen the achievements of the PDO. The MTR also reviewed the M&E framework and acknowledged the need to update it to align with best practices. The team restructured the project in 2019 and increased the project scope to utilize project savings and revised the PDO-level indicators to reflect added project scope and to reflect replicability and best practices to enable precise measurement and effective progress tracking.



The ICR notes (paragraph 110) that Social Network Services (SNS) Mobile Apps enabled frequent communication, dramatically improving efficiency of transmitting project related data and files such as texts, audios, videos, documents edited on mobile phones, and geocoded data for Geographic Information System-based technologies, even in contexts where computers and broad band internet are not available.

Throughout the project implementation, there were minimal changes to the FM, procurement, and safeguards members of the task team, which enabled satisfactory project supervision. The ICR reports (paragraph 102) that the Bank monitored the project's fiduciary compliance on a continuous basis.

In summary, the Bank task team adequately supported the implementation of this complex project. Bank performance in supervision is rated **satisfactory**.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The project design included four PDO indicators with baseline data and target values: (a) Reduced travel time of public transport users during the peak hour on the project corridor; (b) Increased daily public transport users on the project corridor; (c) Higher satisfaction rating by public transport users (by gender) on the project corridor; and (d) Reduced annual number of transport related fatalities and injuries on the project corridor. These indicators were moderately adequate for measuring the achievement of the PDO. The main shortcomings as pointed out in the ICR (paragraph 79) were: (i) that instead of including the direction of change in the indicator names, the targets could have reflected the directions of change (e.g., "reduced travel time", and "higher satisfaction rating"); (ii) the data sources and methodologies were ambiguous, leaving the possibility of inability to track progress due to definition changes in the source data (e.g., "traffic police statistics for fatal traffic accidents", the definition of which changed in 2014).

b. M&E Implementation

The 2019 restructuring revised the PDO indicators and the following changes were made:

- PDO indicator 1: Reduced travel time of public transport users during the morning peak period on weekdays on the project corridor - was revised to disaggregate into sub indicators by segment: Haihu Road to Changjiang Road (original scope) and Changjiang Road to Jianguo Street (added scope).
- PDO indicator 2: Increased daily public transport users on project corridor - was revised to disaggregate into sub-indicators by segment: Haihu Road to Changjiang Road (original scope) and Changjiang Road to Jianguo Street (added scope).



- PDO indicator 3: Public transport users satisfied on the project corridor - was revised from satisfaction rating score to percentage of public transport users satisfied.
- PDO indicator 4: Reduced annual number of transport related fatalities and injuries on the project corridor was revised as the definition of persons killed in a crash in government statistics changed while a new incentive program to report crashes improved reliability of the reported statistics. The death toll was limited to those within seven days after the crash, as reported in traffic police record. The unit for the original target was number per km, and for the revised target was number of people.
- New PDO indicator: Percentage of jobs accessible within a 45-minute commute using non-private transport (public transport & walking) after the improvement of the project corridor. This was an intermediate indicator and the 2019 restructuring changed it to a PDO indicator. This indicator was revised from the number of jobs accessible along the corridor to the percentage of jobs accessible within 45 minutes using the non-private transport model. The unit for the original target at appraisal was the number of jobs, and for the revised target after the restructuring was the percentage of jobs.

IEG concurs with these changes in the indicators, as these changes improved measurement (by clearly defining the methodology), disaggregating by corridor – provided data for each corridor. The increase in targets reflected the additional scope.

The PMO employed a consulting firm to supplement its capacity to collect data for reporting to the Bank. For some indicators, however, the stakeholders were responsible – for example, the public bus company had to report the person-trip statistics for the PDO indicator 2.

c. M&E Utilization

The ICR reports (paragraph 83) that the project monitoring informed project management and decision making. The M&E discussions of the Bank and the PMO involved all the direct stakeholders of the project including the bus company and the Traffic Police, which benefitted these entities in preparing for anticipated activities.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was classified at appraisal as Environmental category “B” (requiring a Partial Assessment) because of the type, scale, nature, and magnitude of its potential environmental impacts (PAD, paragraphs 55 and 56). The project triggered the World Bank’s safeguards policies on Environmental Assessment (OP 4.01), Physical Cultural Resources (OP 4.11) and Involuntary Resettlement (OP 4.12).

Environmental Safeguards: During preparation, an Environmental Management Plan (EMP) was prepared, which included mitigation measures. During implementation, the ICR reports (paragraph 87) that



the external environmental monitoring consultant conducted frequent site inspections and ensured the environmental requirements were enforced. The supervision team also conducted site visits and observed generally good environmental performance throughout the project construction and overall environmental safeguards implementation was satisfactory.

Social Safeguards: A Resettlement Action Plan (RAP) and a Resettlement Policy Framework (RPF) were prepared at appraisal (PAD, paragraph 48). Before project approval, the resettlement of 760 households had already taken place during 2010-2012, in accordance with the Chinese land law as well as provincial and local regulations. The ICR notes (paragraph 88) that the restoration of living conditions for the affected population was in compliance with the substantive aspects of the Bank's involuntary resettlement policy.

The project's urban roads and public transport investments involved displacing 121 households (527 individuals). The project had a grievance redress mechanism (GRM) to address complaints from displaced families. Village committee played an important role in collecting complaints from displaced families and reporting to the relevant agencies. All resettlement sites were completed prior to the closing of the Bank loan and each family received at least two sets of the apartments.

The relocation of individual family tombs was carried out in accordance with OP 4.12 Involuntary Resettlement and not OP 4.11 Physical Cultural Resources. There were well-established national/local regulations on consultation, relocation and compensation that had been incorporated into the RAP process compliant with OP 4.12.

With respect to Occupational Health and Safety (OHS), the ICR reports (paragraph 91) that the construction sites were generally well managed in terms of occupational health and safety, and no major issues were observed.

b. Fiduciary Compliance

Financial Management (FM): At appraisal, FM risk was rated as "moderate" due to lack of knowledge and experience in implementing the World Bank projects. Mitigation measures included: provision of substantial training by the World Bank staff, workshops by Xining Municipal Finance Bureau who had experience with Bank financed operations; and development and implementation of a Financial Management Manual to standardize FM procedures.

During implementation, FM was adequate - the project accounting and financial reports were in line with the World Bank's guidelines (ICR paragraph 95). The interim unaudited financial reports were submitted to the Bank on time, except for 2019 report which was delayed due to COVID-19 pandemic. Qinghai Provincial Audit Office conducted the annual audits. The audited annual financial reports were "unqualified" (ICR paragraph 95).

Procurement: During the early years of implementation, a few procurement management problems occurred due to lack of capacity. Procurement improved with training and close frequent supervision by the World Bank team. The project complied with the Bank's procurement policies (ICR paragraph 93) and no contract management issues were reported (ICR paragraph 95).



c. Unintended impacts (Positive or Negative)

d. Other

11. Ratings

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

12. Lessons

The following lessons are drawn from the ICR (paragraphs 108 – 110), with some adaptation:

- **Close collaboration with stakeholders is critical for introducing innovative solutions such as integrated corridor management, intelligent transport system, and electric public transport fleet.** The Xining Municipal Government (XMG) and the PMO had no prior experience with the new technology. The Bank team closely collaborated with the client in helping the selection of the right technologies and approaches through workshops and effective preparation and implementation support, so that the PMO could more easily adopt the new technologies.
- **Using Social Network Services (SNS) based communications for official document repository and Grievance Redress Mechanism (GRM) can improve efficiency and accountability of the World Bank and its clients.** In this project SNS Mobile Apps were used for frequent communication and improved the efficiency of transmitting project related data and files such as texts, audios, videos, documents edited on mobile phones, and geocoded data for Geographic Information System-based technologies, even in contexts where computers and broad band internet were not available. Supervision of this project especially toward the project closing, including the preparation of the ICR, utilized SNS extensively in communicating and transmitting data with the PMO and among team members.

13. Assessment Recommended?



No

14. Comments on Quality of ICR

The ICR is well-written, thorough and is sufficiently outcome driven and appropriately critical of implementation shortcomings. The theory of change presented in the text is logical and shows clear links between project activities, outputs and outcomes. The ICR is mostly internally consistent; the logical linking and integration of the various parts of the report is adequate. It included some useful lessons learned. The ICR effectively uses photographs to show the project activities. However, the ICR is too long - at 39 pages, it is twice the recommended length.

Overall, the quality of ICR is rated **substantial**.

a. Quality of ICR Rating

Substantial