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<td>Kavita Mathur</td>
<td>Elisabeth Goller</td>
<td>Victoria Alexeeva</td>
<td>IEGSD (Unit 4)</td>
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2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) was "to improve infrastructure and service delivery in selected small and medium towns in Shaanxi Province" (Loan Agreement page 6 and PAD para 15).

For this review the PDO is assessed as a whole, namely "to improve infrastructure and service delivery in selected small and medium towns in Shaanxi Province". This is not in line with the approach used in the ICR, which assessed the PDO in two parts of “to improve infrastructure” and “to improve service delivery”. This review uses a different approach because the improved service delivery in this project is a direct
consequence of improved infrastructure and its operation and maintenance, hence both parts of the PDO share the same theory of change, inputs, and outputs.

b. Were the project objectives/key associated outcome targets revised during implementation?
No

c. Will a split evaluation be undertaken?
No

d. Components

The project included two components (the cost figures exclude contingencies). The activities under both subcomponents were to be implemented in nine project Counties/Districts: (i) Yanliang District, (ii) Chengcheng County, (iii) Wugong County, (iv) Chunhua County, (v) Xunyi County, (vi) Chencang District, (vii) Yintai District, (viii) Hanyin County, and (ix) Hantai District.

Component 1. Infrastructure and Services Upgrading (appraisal estimate US$206.3 million; actual cost US$205.3 million). This component included two subcomponents: (i) infrastructure improvement, including new construction and upgrading of urban roads and missing links in project counties/districts; and (ii) infrastructure rehabilitation, including rehabilitation and expansion of water supply source development and distribution networks; wastewater collection networks; storm drainage networks; and associated road pavement improvements.

Revised Component 1. Liquan Town of Liquan County was added to the towns benefitting from the activities under the original component 1. The following activities were added to the project scope: (a) installation and rehabilitation of storm drainage pipelines with associated road pavement in Liquan, Chengcheng, Xunyi, and Hanyin Towns; and (b) construction of two roads with associated drainage and water supply pipelines in Hanyin Town. The construction of one road and the rehabilitation of roads and wastewater and drainage pipelines in Wutun and Guanshan Towns (Yanliang District), Chenglu Town (Yintai District), and Chencang Town (Chencang District) were removed. The cost of this component was increased from US$206.3 million to US$216.8 million (ICR para 17).

Component 2. Town Management Improvement and Implementation Support (appraisal estimate US$3.0 million; actual cost US$3.0 million). This component included three subcomponents: (i) town management improvements in project counties/ districts through introduction of asset management practices such as: improved Operations and Maintenance (O&M) plans and budgets, infrastructure mapping, preparation of asset registers, and provision of training, study tours and office equipment; (ii) carrying out policy advisory studies and provision of advice to Shaanxi Province in order to strengthen institutional policies and planning practices, focusing on balanced development, efficient growth, poverty reduction, sustainable infrastructure service provision, and improved environmental quality in small towns; and (iii) implementation support for project management, design reviews, monitoring, evaluation, and reporting, etc.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates
Project Cost. The actual project cost was US$246.83 million, slightly lower than the appraisal estimate US$256.9 million and the restructuring estimate of US$260.40 million. There is a slight difference in adding up the cost figures of Annex 3 and the ICR datasheet (US$247.21 million) and this is likely due to exchange rate differences.

Financing. The actual IBRD disbursement was US$150.0 million, as planned.

Borrower Contribution. The actual Borrower contribution was US$97.2 million, lower than the appraisal commitment of US$106.9 million and the restructuring estimate of US$110.4 million.

Dates. The project closed on December 31, 2020 as scheduled.

Restructuring. The project underwent a Level 2 restructurings in May 2018. The PDO was not revised, but target values of some PDOs were revised as follows:

- PDO indicator 2: People provided with access to improved sanitation facilities under the project, of which women - the target increased from 194,500 (94,000 women) to 238,200 (114,800 women);
- PDO indicator 3: Area provided with new and improved drainage services - the target was decreased from 165.1 to 29.6 square km because Xunyi County made a mistake in calculating the target, using 137 km instead of 1.37 km2.
- PDO indicator 4: Increase in area with access to newly built or rehabilitated roads - the target was increased to 22.4 square km.

Split Rating. A split rating was not undertaken because the PDO did not change and the level of ambition of the PDO indicator targets increased, except for the target of the PDO indicator 3, which was decreased because of a calculation mistake (ICR para 24).

3. Relevance of Objectives

Rationale

Country, Shaanxi Provincal, and Sectoral Context. At appraisal, China was experiencing rapid urbanization, but most government resources were allocated to highly urbanized cities. Small towns received significantly less resources for development. Therefore, in these towns, public services and utilities were lagging behind those in large cities (PAD, p 1).

About half of Shaanxi’s population was living in cities and towns. The small cities and towns in GuanTian (GT) Corridor (considered as the engine of economic growth and urbanization in the Shaanxi Province development strategy) were constrained by urban infrastructure deficiencies and service levels both in existing built-up areas and urban expansion areas, weak finances, and limited city management capacity. The average per capita investment for basic urban infrastructure in Shaanxi’s small cities and towns at appraisal was only 68% of the national level. The percentage of population with access to water supply, the road space per resident, and the length of drainage pipelines per square km of built-up area were also substantially lower than at the national level (89 percent, 74 percent, and 67 percent, respectively). There was minimal maintenance of infrastructure (PAD, p 2).
Alignment with the Country and Shaanxi Strategy. The development of infrastructure for basic urban services was highlighted in China's 12th Five Year plan (2011-2015).

The Shaanxi Province development strategy gave high priority to promoting the development of cities that constitute county seats and selected key towns at provincial level in the GT Corridor. This included relaxing hukou restrictions, i.e., the restrictions of the household registration system that categorizes citizens based on both their place of residence (living in urban/rural areas) and eligibility for certain socioeconomic benefits, improving access, and supporting urban infrastructure investments.

The State Council’s National Plan on New Urbanization (2014 - 2020) highlighted the need to improve the quality of urbanization and equal basic urban service provision to all residents in existing towns rather than developing land for the construction of new cities. The Plan, recognizing the role of small towns in linking the cities and rural areas - gave priority to the coordinated development of small cities and towns (PAD, p 2).

The PDO is also consistent with the New Urbanization and Integrated Urban-Rural Development Plan issued by the National Development and Reform Commission (NDRC) in 2020, which prioritizes the improvement of infrastructure and public services in towns that serve rural areas around them, and towns becoming driving forces in local economic development.

Alignment with the World Bank Strategy. At appraisal, the project was aligned with the two strategic themes of the Country Partnership Strategy (CPS) for the period 2013-16 “supporting greener growth" and "promoting more inclusive development". The project was to contribute to CPF Objectives 1.2 “enhancing urban environmental services”, specifically through the construction of wastewater infrastructure with strong environmental benefits. The project was also expected to improve infrastructure, enhance opportunities in small towns, and improve transport connectivity for a more balanced regional development.

At completion, the PDO remained relevant to the second engagement area of the World Bank Country Partnership Framework (CPF) for FY20–FY25 “Promoting Greener Growth”. The project contributes to the objective 2.2 (to reduce air, soil, water, and marine plastics pollution) by improving water supply, sanitation, and drainage services. The PDO is also aligned with the third engagement area “Sharing the Benefits of Growth”. Under this engagement area, the World Bank was to support the reduction in inequality in small towns and urban areas through the improvement in infrastructure and service delivery.

Previous World Bank Experience. The project is part of a series of urban development projects in China, focusing on small towns. These include Sichuan Small Towns Development Project; Chongqing Small Cities Project; Jiangxi Small Towns Infrastructure Development Demonstration Project; and Gansu Qingyang Urban Infrastructure Improvement. By aiming at improving infrastructure services, including road accessibility and access to water supply, wastewater management and treatment in respective provinces, the PDOs of these operations and of this project are similar. The project draws on the recommendations of the Bank’s 2014 urbanization study “Urban China: Toward Efficient, Inclusive and Sustainable Urbanization” (see section 8a “Quality at entry”).

The PDO was realistic. Although this was the first World Bank project in the Shaanxi province, the PDO was not challenging for a province in China because the expected outcomes of improved infrastructure and service delivery were closer to the output than the outcome level in the results chain.
Although the PDO fitted well into the country context and was in line with country and Bank strategies, its largely output-focused nature makes it little challenging for a China province. Therefore, on balance, the relevance of objectives is rated **substantial**.

**Rating**
Substantial

### 4. Achievement of Objectives (Efficacy)

**OBJECTIVE 1**

**Objective**
To improve infrastructure and service delivery in selected small and medium towns in Shaanxi Province.

**Rationale**

**Theory of change.** The causal links between the project activities, outputs and outcomes were logical. The project included activities such as constructing and upgrading urban roads, including traffic management and road safety measures, constructing water supply wells, installing water supply transmission mains and distribution pipelines, rehabilitating and expanding water distribution, stormwater, and sewerage collection pipelines, building capacity for local government staff, and strengthening institutions in township management. These activities were expected to result in outputs such as improved urban roads with enhanced traffic management and road safety features, a water treatment plant, new drainage, sewer and wastewater pipelines, trained local government staff in urban management, asset registries and management systems, infrastructure maps, O&M plans, and a small-township development strategy. As outcomes, this was expected to lead to enhanced institutional capacity, new or improved infrastructure that is well-designed, managed, and maintained because of this enhanced additional institutional capacity, and improved services, thereby achieving the objective to “improve infrastructure and service delivery in selected small towns in Shaanxi Province”. In the long term, this was to help reduce infrastructure deficiencies, contribute to the equitable provision of basic urban services between rural and urban areas, and facilitate growth and job creation. The critical assumptions were: (i) the project investments reflected the needs of the beneficiaries, (ii) adequate funding for the O&M of the constructed assets and infrastructure is available, and (iii) the improved infrastructure and services would promote agglomeration economies for small towns and bring socio-economic benefits to localities.

**Outputs**

**Roads infrastructure.**

- 29 km of urban roads were constructed, achieving the revised target of 29 km but underachieving the original target of 40 km.
• 52.2 km of non-rural roads were rehabilitated, exceeding both the revised target of 45 km and the original target of 34 km.

**Water and wastewater infrastructure.**

• A total of 58.04 km water supply pipelines were laid in eleven towns across nine counties/districts, exceeding the original target of 45.5 km.

• A new water treatment plant in Wugong Town was constructed, with a capacity of 3,000 m3 per day.

• 182 km of wastewater sewers and storm drains, slightly more than the original target of 168 and the revised target of 169.

• 31.1 km² of urban area provided with new and improved drainage services, more than the revised target of 29.6 km. As mentioned in section 2, the original target of 165.2 km² was erroneously calculated.

**Institutional strengthening and capacity building.**

• An asset management system was established in seven counties/districts.

• Asset registries were introduced in 7 counties, exceeding the revised target of 6 but below the original target of 9 counties/districts.

• 7 Counties/Districts were implementing improved O&M plans with recommended budget allocations, exceeding the revised target of 6, but underachieving the original target of 9.

• 7 Counties/Districts completed infrastructure mapping exceeding the revised target of 6, but underachieving the original target of 9.

• Publication of a handbook on "Exploration and Practice of Asset Management for Small Towns in China".

• A study on Shaanxi Small Town Development Strategy was conducted. The recommendations and key findings Shaanxi Small Town Development Strategy on institutional policies, balanced development, efficient growth, poverty reduction, and sustainable development in small towns were incorporated in the province’s urban policy under the provincial and local 14th FYP (ICR para 35).

• In September 2020, more than 100 local government officials from project towns benefited from a week-long intensive training sessions designed by the Zhejiang University on sustainable town development.

• 1,422 local government officials were trained, for instance, in asset and project management.

**Outcomes**
The project provided O&M related tools and training to enhance the towns capacity to manage and maintain the improved infrastructure and services. The ICR points out (para 49) that through the urban infrastructure mapping, asset registries, improved O&M plans with budgets, and trainings the counties/districts gained a clear understanding of the asset values, their locations and condition, O&M needs and costs, and the departments responsible and timelines for O&M. The ICR also reports (para 34) that these improvements facilitated cross-agency cooperation due to the systems’ ability to share data among local urban development departments and municipal asset-related departments. The ICR points out (para 48) that the feedback on the Zhejiang University training on sustainable town development showed that it was useful, indicating that the exposure to domestic and international best practices in small-town development would be likely to enable participants to apply lessons learned in future development projects. The ICR notes (para 49) that officials from project towns recognized that the improved O&M plans helped the county governments mainstream O&M budgets into asset management plans to sustain service delivery, prolong asset life, and defer further capital investments.

The project improved roads infrastructure and increased access. It might also have had positive impacts on reducing traffic accidents and increasing incomes, but the attribution to the project is not clear. The area with “increased access to newly built or rehabilitated roads” increased from 0 to 22.9 square km, exceeding both the original and increased targets (21.7 square km and 22.4 square km respectively). The area of with “increased access to newly built or rehabilitated roads” does not include 11 km Hongyao road, which was financed with an alternative funding source and dropped from the project (ICR page 33).

With the construction and rehabilitation of urban roads, connectivity between the densely populated old city center areas and its expanded areas improved, and the accessibility of residents to markets, business centers, schools, hospitals, and public services improved. The ICR reports (para 30) that according to the 2021 beneficiary survey, interviewing 949 people, travel time from outskirts to towns was reduced from an average of 30 to 40 minutes to 10 to 20 minutes because the improved roads provide shorter links.

Traffic accidents in Hanyin Town fell by 15 percent in 2019, compared to 2014. The ICR (para 44) attributes it to the traffic management measures under the project (improved intersection design, separation of motor vehicles from non-motorized vehicles, and streetlights), but does not provide clear evidence on such attribution, such as the 2014 or 2019 figures are not outliers and that there were no other factors at play that reduced traffic accidents.

The ICR also mentions that the income for local farmers and enterprises increased due to more efficient transportation of goods and better connectivity under the project. For instance, the ICR reports (para 45) that according to an external social monitoring report the per capita net income of the sampled rural population in project towns/districts increased from CNY 11,465 (US$1,753) in 2016, slightly below the national average of CNY 12,363 (US$1,890), to CNY 17,042 (US$2,605) in 2019, which was 38 percent above the provincial average and 18 percent above the national average, respectively. The ICR does not specify how the study controlled for external factors that could also have contributed to a rise in income.

The project improved water infrastructure and the delivery of water services in terms of accessibility, reliability, and quality. The new water treatment plant in Wugong Town provided 168,800 people with access to improved water sources by project end (from Guanshan Town, Wutun Town, Chencang Town, Wugong Town, and Hanyin Town), of which 80,100 were women, exceeding the original target of 151,000 people (of which 72,200 were women). According to the project team, because of the construction of the water treatment plant and the installation of distribution pipelines, the households in the project towns have now in-house tap water provision. The reliability improved as the local residents had 24-hour access to safe
drinking water that met the national drinking water standards. The ICR (para 31) points out that, in compliance with a legal covenant under the project, Wugong County terminated the use of untreated groundwater as a drinking source and shifted water users from self-supply wells to the newly built water supply system through regulations and incentives.

According to the Bank project team, water supply is adequate in terms of water demand and quality. In the design of the water supply system in the project towns, population and industry growth was considered and the national standards of the Urban Water Supply Code (GB 50282-2016) was strictly followed, which required water provision (consumption) between 110-210 liter/person day.

The project provided improved sewage and wastewater infrastructure, increased access to sanitation facilities, and the sanitation likely contributed to better water quality. According to the ICR (para 32), at appraisal, some of the towns included in this project were not connected to wastewater treatment plants and industrial wastewater and domestic sewage were directly discharged in surface drains. In addition, the stormwater and sewage pipelines in the project towns were not separated, therefore on rainy days wastewater leaked into the ground and creeks, causing pollution of underground waters and rivers. The project-financed infrastructure that separated stormwater from wastewater and increased the coverage of wastewater collection networks and centralized wastewater treatment. As a result, 265,700 people obtained access to improved sanitation facilities, including 128,400 of women, exceeding both the revised and original targets (revised: 238,200 people, including 114,800 women; original: 194,500 people, including 94,000 women). The ICR also points out that the improved sanitation infrastructure likely contributed to better water quality in the wider region but did not provide evidence.

The project improved road, water, and sanitation infrastructure, and provided tools and training to enhance the capacity to manage and maintain this infrastructure. The project also enhanced the accessibility, quality, and reliability of water services and improved road and sanitation access. This has likely led to a more equitable basic service provision for project beneficiaries. Although most output targets were met and exceeded and the beneficiary targets were exceeded, the quality of evidence on project outcomes in terms of improve services had shortcomings. Therefore, on balance, the project’s efficacy is rated substantial.

Rating
Substantial

OVERALL EFFICACY

Rationale
The project improved road, water, and sanitation infrastructure, provided tools and training to enhance the capacity to manage and maintain this infrastructure, enhanced the accessibility, quality, and reliability of water services and improved access and quality of sanitation services. This has likely led to a more equitable basic service provision for project beneficiaries. Although most output targets were met and exceeded and the beneficiary targets were exceeded, the quality of evidence on project outcomes had shortcomings and it is
mostly based on statements by the Bank project team. Therefore, on balance, the project’s efficacy is rated substantial.

Overall Efficacy Rating
Substantial

5. Efficiency
Economic Efficiency.

At appraisal, the project investments were categorized by sectors: road construction and rehabilitation, water supply, and wastewater collection and treatment. A mix of cost-benefit and cost-effectiveness analyses was carried out.

A cost-benefit analysis was used for (a) road construction and rehabilitation (including investments in associated water supply and wastewater pipelines along the roads as it is difficult to separate these costs from road construction costs) in nine counties/districts; and (b) water supply in four counties/districts.

(a) The economic rate of return (ERR) for road investments ranged from 12.0 percent to 16.5 percent and the net present value (NPV) ranged from RMB 17.75 to RMB 194.0 million. The time horizon for the analysis included three years of construction and 20 years of operation. The discount rate used was eight percent (PAD pages 46 to 48).

Benefits included: savings in travel time and transport costs, increases in the value of land and properties close to the roads constructed or rehabilitated by the project, and improvements of road accessibility to public services (e.g. shopping, medical care and education) and amenities of local residents. The costs included capital investments and O&M costs (PAD page 45).

(b) The ERR for water investments ranged from 11.0 percent to 14.1 percent and the NPV ranged from RMB 3.93 to RMB 44.4 million. The time horizon and the discount rate were the same as for the roads infrastructure. The benefits from improving water supply are health and living standard improvements for local residents, measured through the willingness to pay, and increased productivity of industrial and tertiary sectors, measured through the productivity change approach. The costs included capital investments and O&M costs (PAD pages 48 to 50).

The cost-effectiveness approach was used for the investments in wastewater collection networks. This included the (i) installation of 12 km sewer trunk to transport wastewater generated in Run town to the treatment plant in Chunhua County, (ii) rehabilitation of wastewater and drainage pipelines in Chencang District, and (iii) rehabilitation and installation of wastewater and sewers/drainage pipelines in Wugong County. For Chunhua County, two alternative solutions were identified: (i) construction of a small sewage treatment plant in Run town with total construction, land acquisition and resettlement costs of RMB 16.53 million, and (ii) construction of trunk sewers to transport sewage from Run town to Chunhua County seat for treatment with the construction cost of RMB 12.51 million. The second and less expensive alternative was selected (PAD, pages 50 and 51). The same approach was used for the other two investments in wastewater collection. The PAD (para 35)
explains that the cost-effectiveness approach was used due to the difficulties to quantify and monetize the health benefits of treating wastewater.

**At completion**, the appraisal methodology was used for conducting the ex-post cost benefit analyses. The relevant assumptions and parameters used at appraisal were adjusted based on data availability. For the roads investments, the ERRs ranged from 10.2 percent to 14.3 percent. The ICR provided the NPV only for one county. The ICR provided the NPV only for one county. The ex-post ERRs were lower than the appraisal estimates because of an increase in the total road investment and lower environmental benefits that estimated (ICR, para 15).

For water supply investments the ERR by project end ranged from 10.2 percent to 14.9 percent. This is slightly lower than the appraisal estimate. Again, the ICR provided the NPV only for one district. For the wastewater collection networks, according to the ICR (para 29), the costs at completion were lower than the least cost estimate at appraisal: Chunhua County’s actual cost was CNY 2,106 million, the appraisal estimate was CNY 2,266 million; Chencang County’s actual cost was CNY 5,578 million, the appraisal estimate was CNY 7,326 million; and Wugong County’s actual cost was CNY 6,294 million, the appraisal estimate was CNY 8,815 million. However, the cost figures for Chunhua County in the PAD and the ICR do not match (for the other counties the comparison of ex-ante and ex-post cost figures is not given in the ICR).

**Administrative and Operational Efficiency.**

The project was implemented efficiently. There was a low turnover of World Bank staff and Project Management Office (PMO) staff. Even with additional project activities (which were added at restructuring), the project closed on December 31, 2020 as scheduled. The actual project cost was slightly lower than the appraisal estimate. The operational efficiency of the project also came from the promotion of joint constructing and sharing of urban infrastructure, for instance, through the water pipelines that connected Guanshan Town in Yanliang to the Shuibei water supply plant or the sewage pipeline in Runzhen Town in Chunhua that connected to the centralized wastewater treatment plant (ICR, para 44).

On balance, despite lower ERRs at completion for most road and water investments, the project was implemented efficiently, and is rated **substantial**.

**Note:** The ERR for the project as a whole is not available.

**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:

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6. Outcome

The relevance of objectives, project efficacy, and efficiency are rated substantial. Therefore, the outcome is rated satisfactory.

a. Outcome Rating
   Satisfactory

7. Risk to Development Outcome

The institutional risk is low as the project’s capacity-building activities supported O&M of infrastructure built by the project. Systems and training were provided to staff in local governments to build up their capacity in managing and maintaining the assets. The project also developed life cycle O&M action plans with proposed budget allocations to cover the O&M needs, and these plans were implemented by the operators.

The exposure to natural disasters is moderate. Most project towns are located upstream of the Wei River or midstream of the Han River and are vulnerable to flooding. The engineering design of project investments considered these potential natural disasters and climate change events and the investments in storm drainage increased the resilience of project towns. However, continued monitoring of patterns of natural disasters and their impact on local infrastructure will be necessary.

8. Assessment of Bank Performance

a. Quality-at-Entry
   The project design was based on the recommendations of the Bank’s comprehensive urbanization AAA - “Urban China: Toward Efficient, Inclusive and Sustainable Urbanization”. These included, among others, promoting coordination among city clusters and improving infrastructure in smaller towns, and improving local government management by introducing asset management practices (PAD, p 4). The project was proposed at a time when China was conducting a retrospective review of the successes and weaknesses of its urban development policies and approaches adopted during the past two decades. However, as mentioned in section 3, the objective was not sufficiently outcome oriented and hence challenging for a Chinese province.

   The project was prepared in 15 months, 5 months earlier than the average preparation time in China. The overall risk rating at appraisal was substantial because of: (i) inclusion of a large number of counties/districts with weak technical capacity and no experience in implementing World Bank-financed
projects; and (ii) the fiduciary and procurement risks due to unfamiliarity with the World Bank procedures. Adequate mitigation measures were included such as frequent procurement reviews by the Bank; hiring of consultant services for detailed design and bid document review, construction supervision, and monitoring. In addition, 20% of detailed designs and bid documents were planned to be ready by loan negotiations (PAD page 7). This led to timely implementation and commencement after loan effectiveness.

The safeguards identification was satisfactory. The fiduciary and institutional management risk was appropriately assessed as substantial. Although, the PPMO had experience in managing Bank funded projects, all participating counties lacked this experience and were not familiar with Bank’s fiduciary and safeguards requirements. To mitigate this risk, project management consultants were engaged to provide support to the PPMO and the project counties/districts on project management, including design review, training, monitoring and evaluation. The M&E design had shortcomings (section 9).

Quality-at-Entry Rating  
Satisfactory

b. Quality of supervision
Supervision missions were carried out regularly, on average two missions per year. During COVID-19, one virtual mission was carried out. The ICR reports (para 74) that the ISRs were candid and presented a comprehensive review of project performance. There was consistency in the project team with the same task team leader during preparation and implementation. The core project team was located in Beijing, which allowed close interaction with the Provincial Project Management Office (PPMO) and County Project Management Office (CPMO).

The ICR reports (para 74) that the team composition was adequate for project supervision. Fiduciary, environmental, and social safeguards specialists were part of the supervision missions. In additions, international experts were mobilized to advise the client on town development. The project team provided hands-on training and organized experience-sharing workshops to strengthen the PPMO’s and CPMOs’ technical and operational capacities. The ratings in the ISRs reflected the satisfactory project implementation.

However, the Bank could have focused more on the project’s development impacts by revising the PDO or at least some key indicators to better monitor the development outcomes of the project. On balance, however, quality of supervision is satisfactory.

Quality of Supervision Rating  
Satisfactory

Overall Bank Performance Rating  
Satisfactory
9. M&E Design, Implementation, & Utilization

a. M&E Design

The theory of change was sound in documenting how the key activities and outputs were causally linked to the expected results. However, as mentioned previously, the latter were framed more in terms of output than outcomes. The M&E design included both intermediate and PDO indicators. The PDO indicators were:

(i) people provided with access to improved water sources under the project;
(ii) people provided with access to improved sanitation facilities under the project;
(iii) area provided with new and improved drainage services; and
(iv) increase in area with access to newly built or rehabilitated roads. These are all output-focused indicators and do not adequately measure service improvements.

More outcome-oriented indicators for road infrastructure service improvements could have included travel time and fatality reduction (both reported in the ICR, the latter not sufficiently rigorously measured because of the lack of counterfactual). For water-related improvements, indicators could have measured the number of people who switched from wells to piped water or the different dimensions of water service delivery, such as water quality, affordability, adequacy of access, and reliability (again, some of them reported in the ICR but not rigorously measured). For the sewage-related infrastructure, the project could have measured the wastewater quality or the land pollution levels.

The intermediate indicators captured physical outputs such as roads constructed or roads rehabilitated, wastewater sewers and storm drains constructed / rehabilitated, and length of water supply pipes laid. These are adequate to track project activities.

Baselines and targets were provided in the PAD. The Provincial Project Management Office (PPMO) was assigned the responsibility to consolidate information and data.

Indicators were neither dropped nor revised during project implementation. However, several PDO indicator targets were revised.

b. M&E Implementation

The ICR reports (para 61) that the PPMO and each PMO at the county/district level – regularly collected and reported data in the semiannual progress reports. These reports were submitted to the World Bank in a timely manner and were of good quality. M&E consultants carried out on-site verifications as planned.

The asset register and infrastructure mapping developed under the project, further strengthened project monitoring. The integrated management information system (MIS) (developed under the project) streamlined data collection and information sharing (as the project was implemented in various project towns).

A beneficiary survey was conducted from January 3 to 11, 2021 to measure user satisfaction with different types of services. In total, 949 individual beneficiaries were interviewed in nine project counties/districts. A total of 79 percent of the individual beneficiary interviewees were aged between 30 and 60 years and 21 percent of the interviewees were either below 30 years or above 60 years. A total of 61 percent of the interviewees were male and 39 percent were female. Considering the lack of outcome indicators, conducting a beneficiary survey was good. A beneficiary survey provides a before and after snapshot. However, it has limitation such as there are no counterfactual (like in an impact evaluation),
comparisons cannot be made regionally or with other provinces. The beneficiary survey does not provide a trend.

c. M&E Utilization
The ICR reports (para 63) that the M&E data enabled the World Bank task team, PPMO and the PMO to monitor implementation progress and achievements. The PPMO used the semiannual progress reports to communicate its needs from the Provincial Project Leading Group (PPLG) on issues such as implementation delays, considerable savings, and progress of land acquisition and resettlement relocation. This informed and facilitated project restructuring.

M&E Quality Rating
Substantial

10. Other Issues

a. Safeguards
The project was classified as Environmental Category "B" and three safeguards policies were triggered: Environmental Assessment OP/BP 4.01; Physical Cultural Resources OP/BP 4.11; and Involuntary Resettlement OP/BP 4.12.

Environmental Safeguards. The PAD (para 56) reports that an Environmental Impact Assessment (EIA) was carried out and an Environmental Management Plan (EMP) was prepared to determine and lay out the mitigation measures, environmental monitoring program and necessary institutional arrangement as well as capacity building development. The EIA and EMP were disclosed locally and in the World Bank's InfoShop on February 26, 2014, and an updated version was disclosed on April 15, 2014.

The ICR reports (para 66) that the project complied with the environmental safeguards policies. The independent environmental consultant monitored the implementation of EMP and confirmed that the EMP was implemented adequately. There were no occupational health and safety issues during implementation.

Physical Cultural Resources OP/BP 4.11. The Environmental Assessment screening found three cultural relics - Chenghuang Temple (classified in 1992 as a provincial level protected relic) in Wugong Town; Taita Pagoda (classified in 2001 as a national level relic) in Chengguan Town of Xunyi County; and Lianfeng Mosque in Puzhen Town of Hantai District. Mitigation measures were developed in line with the World Bank's policy and the national regulatory and legal framework concerning cultural heritage (PAD para 46).

The independent environmental consultant monitored the implementation of the measures concerning cultural heritage, which were incorporated into the tendering documents and contracts of civil works – and confirmed that they were well implemented (ICR para 66). In addition, local cultural heritage departments were actively involved in the supervision of construction sites. There were no “chance finds” during implementation.
Social Safeguards.

Involuntary Resettlement OP/BP 4.12. The PAD stated (para 51) that the project would require permanent acquisition of 94.3 hectares of land, including 84.2 hectares of cultivated land and 10.1 hectares of housing lots. In addition, the project would require 76,278 square meters of structures, including 62,452 square meters of concrete and brick houses, 6,805 square meters of brick and wood houses, 4,206 square meters of muddy and wood houses, and 2,815 simple houses. As the result, the project would impact 1,008 families, including 649 families with 2,487 persons by land acquisition and 359 families with 1,337 persons by housing demolition. A Resettlement Action Plan (RAP) was prepared.

The ICR reports (para 67) that the project complied with the social safeguards policies. The independent social monitoring reports confirmed that the resettlement activities were carried out in accordance with the RAP. Due to the changes made at restructuring, in actual the project required the acquisition of 41.5 hectares of land and 42,219 square meters of housing demolition, affecting 629 households and 2,361 persons - a lower impact than planned.

In three counties/districts (Yanliang, Chencang, and Yintai), there were challenges in land acquisition and resettlement, which took longer than expected due to the master plan revision and land use plan adjustment (which were beyond the control of local governments), resulting in delayed implementation of the road investments in the initial two years. After the midterm review in 2018 and through restructuring, some of the delayed activities were cancelled and replaced with activities that were designed to minimize land acquisition and resettlement. Other measures were adopted, these included: selection of experienced design institutions; ensuring timely counterpart funds for resettlement, consultations with and advanced notification to affected communities, and preparation of action plans for land acquisition before bidding (ICR para 56).

Grievance redress mechanisms were established as planned in each county/district to respond to concerns or complaints. However, no complaints were received (ICR para 69).

b. Fiduciary Compliance

Financial Management (FM). The ICR notes (para 71) that the project complied with the World Bank’s FM policies and procedures. The project audit reports for the fiscal years from 2015 to 2019 were submitted to the World Bank in a timely manner, were of acceptable quality and included unqualifies (clean) audit opinions. The interim financial reports were also regularly submitted to the World Bank and were of acceptable quality. Some minor FM performance deficiencies such as: the delayed establishment of project accounting, shortage of financial staff in the early stage of project implementation, and delayed counterpart funds contribution, were addressed by the Project Management Office (PMO) promptly.

Procurement. The ICR notes (para 70) that the project complied with the World Bank’s procurement procedures and guidelines. There was sufficient procurement staff and the World Bank provided training in ethics and identifying red flags of fraud, corruption, and collusion. The ICR does not report any procurement problems under the project.
c. Unintended impacts (Positive or Negative)  
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d. Other  
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### 11. Ratings

<table>
<thead>
<tr>
<th>Ratings</th>
<th>ICR</th>
<th>IEG</th>
<th>Reason for Disagreements/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Highly Satisfactory</td>
<td>Satisfactory</td>
<td>Substantial relevance of objective because of limited outcome orientation in the PDO; and substantial efficacy because of minor shortcomings in the quality of evidence on outcomes.</td>
</tr>
<tr>
<td>Bank Performance</td>
<td>Highly Satisfactory</td>
<td>Satisfactory</td>
<td>Because of a limited focus on outcomes in the PDO and in M&amp;E</td>
</tr>
<tr>
<td>Quality of M&amp;E</td>
<td>High</td>
<td>Substantial</td>
<td>Weaknesses in M&amp;E design and lack of revision of the results framework</td>
</tr>
<tr>
<td>Quality of ICR</td>
<td>---</td>
<td>Substantial</td>
<td></td>
</tr>
</tbody>
</table>

### 12. Lessons

The following lessons in the ICR stood out as important and relevant to other projects and are presented here with some revisions in editing:

- **A competitive approach to selecting counties/districts for investments can create a positive implementation dynamic among participating counties/districts.** The traditional approach in China is that each county/district receives a fixed amount for infrastructure investments. The project took an innovative approach to counties/districts selection based on predefined criteria that emphasized alignment with national and local development strategies, strong ownership and commitment from townships, disparity in infrastructure service in urban and peri-urban areas, demands for addressing infrastructure deficit and insufficient services, and adequate institutional arrangements/readiness for becoming a pilot model for sustainable small-town development (ICR para 9). The selection of investments was also strategic to ensure efficiency and technical soundness by focusing on investments with a reasonable scale of resettlement impacts, technical soundness, and quality of services in built-up areas (ICR para 53). This competitive approach generated incentives among the counties/districts to submit well-designed proposals, which proved effective because these well-designed interventions secured the county/district government’s commitment and strong support from the start.
• Complementing investment activities with capacity strengthening for O&M can lead from reactive to proactive maintenance. Before the project, local authorities placed high priority on building new infrastructure over O&M of existing infrastructure, resulting in inefficient use of public resources. This project introduced systematic asset management systems to support the long-term success and sustainability of public infrastructure investments and service delivery. This included, among others, public utility registrations, infrastructure mappings, and approval process of maintaining municipal assets. This led to a change from reactive to proactive maintenance of infrastructure, such as the timely clearing blockages in sewers and carrying out repairs.

• Innovative approaches for community outreach can help enable inclusive public participation to build ownership and facilitate implementation. Engagement with communities and beneficiaries in selecting project sites and designing the services is critical for communities to understand project outcomes and impacts. The project introduced innovative methods for community outreach, including the use of social media and digital tools complemented with conventional public participation methods. This allowed a wide range of citizens to be engaged throughout project preparation and implementation. The project used TV news, WeChat, and TikTok platforms to facilitate broader community discussions aimed at developing consensus on the level and type of investments to maximize the benefits for local communities. These innovative approaches provided timely and transparent information to affected people, created social support from affected communities, and improved the quality and effectiveness of construction works incorporating the feedback loops.

13. Assessment Recommended?
No

14. Comments on Quality of ICR

The ICR is generally well-written, provides a comprehensive overview on the project, and complies with the Bank guidelines for ICR preparation. The ICR is largely results-oriented and presented relevant evidence to assess project achievements, but the quality of the evidence on outcomes has minor shortcomings and the presentation of the results of the economic analyses is not easy to follow. The lessons are based on project experience. Overall, the quality of ICR is substantial.

a. Quality of ICR Rating
Substantial