



## 1. Project Data

<b>Project ID</b> P149485	<b>Project Name</b> Ningbo Sustainable Urbanization Project	
<b>Country</b> China	<b>Practice Area(Lead)</b> Urban, Resilience and Land	
<b>L/C/TF Number(s)</b> IBRD-86220	<b>Closing Date (Original)</b> 30-Nov-2021	<b>Total Project Cost (USD)</b> 136,314,531.87
<b>Bank Approval Date</b> 15-Jul-2016	<b>Closing Date (Actual)</b> 30-Sep-2023	
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment	150,000,000.00	0.00
Revised Commitment	136,314,531.87	0.00
Actual	136,314,531.87	0.00

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## 2. Project Objectives and Components

### a. Objectives

According to the Loan Agreement (LA, p 5) and the Project Appraisal Document (PAD, paragraph 13), the Project Development Objective (PDO) of this Ningbo Sustainable Urbanization Project was "to improve the use of urban public space, improve urban mobility, and reduce flood risk in the project Counties" in Ningbo Province.

This review will assess project performance against this objective parsed into three:



- To improve the use of urban public space in the project Counties
- To improve urban mobility in the project Counties
- To reduce flood risk in the project Counties

**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?**

Yes

**d. Components**

1: **Urban Regeneration** (US\$185.5 million, of which US\$49 million was from the World Bank at appraisal, restructuring reduced this to US\$73.9 million consisting of US\$39.3 million from the World Bank, actual was US\$77.4 million, with US\$32.1 million from the World Bank), Urban regeneration refers to a comprehensive package of investments in public infrastructure and service delivery in existing urban areas. Activities that provide lower-income households, migrant workers, and women with affordable transport options to travel to job centers, offer the elderly and the youth safe access to medical and educational institutions, and/or contribute to the preservation of cultural identity and improvements of social inclusion in local communities would be prioritized. This component was to finance the upgrading of public space along main transport corridors and commercial streets; the installation of modern utilities (water supply, drainage system, sewage treatment and solid waste collection, lighting, and parking) and open spaces; and the design of crossings and intersections for traffic management efficiency, separating motorized (MT) from non-motorized transport (NMT, e.g., bicycle lanes and dedicated cycle paths), using information and communication technology (ICT) and other electronic devices.

2: **Urban Transport** (US\$132.1 million, of which US\$67.8 million was from the World Bank at appraisal, restructuring reduced this to US\$76.3 million, with reduced World Bank contribution of US\$60.7 million, and actual cost was US\$ 82.5 million with World Bank actual cost at US\$57.1 million). This component was to finance the completion of the urban road network; improve bus terminal and depots; rehabilitate and construct bus stops, terminals, depots, and facilities; and upgrade and modernize the bus fleet by acquiring electric buses. Typically, the public transport network had low ridership. Missing links for the urban road network needed to be enhanced to improve the capacity, reliability, and service quality of the bus system. These investments were linked to Component 1 above for a more sustainable urban transport system. The overall network efficiency and service quality within the city would be improved by integrating nonmotorized systems at the neighborhood level with the public bus systems for longer-distance trips within the county. Activities that provide lower-income households, migrant workers, and women with affordable transport options to travel to job centers, offer the elderly and the youth safe access to medical and educational institutions, and contribute to the preservation of cultural identity and improvements in social inclusion in local communities would be prioritized.

3: **Flood Risk Management** (US\$72.3 million, of which US\$28.3 million was from the World Bank at appraisal, restructuring increased this to US\$84.8 million, with US\$44.4 million from the World Bank; actual



cost reached US\$66.6 million with World Bank contributions at US\$42.5 million actual) This component was to finance structural and nonstructural investments to reduce vulnerability to flood risk and protect assets and vulnerable people from the impacts of floods. The structural investments included: (i) the renovation and upgrading of existing rain grits, inlets, outlets, and drainage pipes, (ii) the restoration of natural storm water drainage systems, (iii) the construction of pumping stations at critical locations, (iv) the construction of low-impact-development (LID) demonstrations in suitable public areas. The non-structural investments included: (i) the establishment of pre-warning systems; (ii) the preparation of emergency preparedness plans; (iii) the updating of land-use plans; and (iv) the introduction and improvement of the flood insurance system.

**4: Technical Assistance and Capacity Building** (US\$4.6 million at appraisal, all from the World Bank, US\$4.3 million actual) This component was to assist local governments in reviewing, updating policies, codes, and capital investment plans to integrate transport, housing, and economic development; finance technical support to counties to develop information and tools for full-cycle management of infrastructure assets, including asset inventory, valuation, planning and budgeting, and to develop capital investment plans. This component was also to finance technical support to develop innovative financing mechanisms to improve public financing systems. This component was to finance project management and supervision, including strengthening the institutional capacity of the Project Management Office (PMO) and Project Implementation Units (PIUs), monitoring and evaluation (M&E) activities, training and study tours, and consulting services. The component was also to finance the independent external monitoring of the World Bank's safeguard measures, including Land Resettlement Action Plans (RAPs) and the Environmental Management Plans (EMP).

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

**Project Cost:** The total project cost was US\$150.0 million including a front-end fee of US\$0.38 million. The project disbursed US\$136.3 million at closing. The balance was cancelled.

**Financing:** The International Bank for Reconstruction and Development financed this loan.

**Borrower Contribution:** The government originally committed to contribute US\$167.5 million. Restructuring revised this commitment to US\$103.28 million because of local governments' budgetary limitations while making sure the third batch of subprojects was fully financed and completed. The 2020 restructuring (see below) increased the disbursement percentage for civil works from 65 to 100 percent, allowing for the full use of the IBRD loan and reducing the burden on using government counterpart funds. The government disbursed US\$94.51 million.

**Dates:** The loan was approved on July 15, 2016. The project was made effective on December 28, 2016. The Mid Term Review (MTR) was conducted on October 14, 2019. The project was originally set to close on November 30, 2021. The following restructurings extended the closing date by 23 months to close on September 30, 2023:

- On April 13, 2020 to revise the cost allocations of the components. Subproject costings were appraised in three batches following a framework approach (see Section Bank Performance, Quality of Design and Efficiency below). Costs were reallocated among components because subprojects were dropped and replaced by new ones depending on their readiness to implement, alignment with



local government development priorities at the time of appraisal and based on available funding. The target outcome indicators in the results framework were adjusted accordingly:

- Reduced the target for the outcome indicator “number of direct beneficiaries” from 569,284 to 365,665, of which 49.36 percent was the target share of female beneficiaries.
- Replaced the outcome indicator “Percent increase of pedestrian and bicycle flows and stationary activities in urban regenerated areas” by “The rate of satisfaction expressed by pedestrians, users of bicycle flows, and participants to stationary activities in urban regenerated areas” as a better measure to capture the outcome of improving access to and use of urban public space.
- Replaced the outcome indicator “Area provided with new and improved drainage services, with an original target of 9,036 ha” with “Reduced flooded area within 24 hours after a major - 1 in 10 years- rain event with an original target of 409.7 ha” This was originally an intermediate indicator.
- On November 23, 2021 to extend the loan closing date and amend the indicators in the results framework.
  - The target for the outcome indicator indicating the share of females direct beneficiaries was reduced from 49.36 to 48 percent. This reduction was informed by the new 7th China National Population census because of fewer women in Xiangshan, Ninghai, and Fenghua.
  - The outcome indicator “Increase in the number of public transport users in urban areas, with an original target of 27 percent” was replaced by “The average speed of buses traveling on project-supported transport corridors during peak hours, with a target of 20 km/hour.”
  - The target for the outcome indicator “Reduced flooded area within 24 hours after a major - 1 in 10 years- rain event” was reduced from 409.7 ha to 217.6 ha.

**Split Rating:** A split rating of the outcome will apply. The PDO remained unchanged throughout the project period. However, in the 2020 restructuring, PDO indicators targets were revised after completing the final appraisal of investments following the three batches of a framework approach. A split rating is applied to determine the project outcome rating.

### 3. Relevance of Objectives

#### Rationale

**Context:** From 2000 to 2010, 200 million people migrated to urban areas in China. By 2014, about 57 percent of the total population were estimated to be living in cities. Ningbo Municipality in the northeastern part of Zhejiang Province, received an influx of migrant workers. Extreme weather events due to climate change caused frequent floods. Ningbo was originally orienting its spatial expansion using motorized transport (MT). This strategy was seen to contribute to the fragmentation of the urban core and to hamper the delivery of quality basic urban services. The Xiangshan and Ninghai counties and Fenghua district, the project areas in Ningbo municipality, had an annual per capita GDP estimated to be less than a third of the US\$30,000 equivalent annual per capita gross domestic product (GDP) in the main Ningbo municipal urban areas in 2013. Flooding and urban mobility also affected these two counties and district. As part of the national plan, the State Council selected Ningbo as one of the 62 cities to pilot a new urbanization approach.



**Country and Provincial Plans:** The Government of China launched a “New Urbanization Plan” (NUP) in 2014 to promote urbanization as an engine of the country’s economic growth. The NUP emphasized quality urbanization and equitable access to basic urban services for all residents, including the poor, women, and migrants. The plan prioritized cities and towns at the lower tiers of the urban hierarchy, recognizing their role in linking major cities and rural areas, as well as their potential to accommodate rural-urban migration. The PDO contributes to China’s medium- and long-term development plans and contributes to the goal of building high-quality cities outlined in China’s 14th Five-Year Plan (FYP for 2021–2025). For example, investing in 30 new electric buses would reduce greenhouse gas (GHG) emission and contribute to the “dual carbon goals” proposed by the FYP - carbon emissions to peak by 2030 and achieve carbon neutrality by 2060. The PDO was also highly relevant to China’s New Urbanization Implementation Plan (2021–2025), contributing to the development of towns at lower tiers of urban hierarchy, enhancing their roles and capacities in accommodating rural-urban integration.

The PDO was also relevant to Ningbo’s 14th FYP for Urban and Rural Development. The PDO demonstrated Ningbo’s contribution to achieving high quality sustainable urbanization, focusing on inclusivity and on low-income people, vulnerable groups, and migrant workers; enhancing both urban and rural aesthetics; and fostering environmental improvements. Additionally, the PDO contributed to Ningbo’s Urban Regeneration Special Plan (2022-2035), issued in June 2023 by revitalizing important public urban spaces and historic districts, serving to regenerate and improve the quality of public space.

**World Bank Country Partnership Framework:** At closing, the PDO remained highly relevant to the World Bank Group’s China Country Partnership Framework (CPF) for 2020-2025. The PDO supported three of the five objectives under CPF Engagement Area 2: Promoting Greener Development, namely: (i) Objective 2.2: Reducing Air Pollution, by modernizing the bus fleet with electric vehicles, enabling a shift to nonmotorized transport (NMT) by including bicycle lanes, foot paths, and separation of motorized from nonmotorized transport (MT and NMT), and improving the traffic flow through computer based state of the art intelligent traffic management and signaling in the project counties; (ii) Objective 2.4: Strengthening Natural Resources Management through the provision of greater flood risk protection of urban areas; and (iii) Objective 2.5: Promoting Low-Carbon Transport.

The PDO also contributed to achieving the objectives of the World Bank Group China Country Climate and Development Report (CCDR), which called for integrating the country’s efforts to achieve high-quality development by reducing emission and promoting climate resilience. The PDO was relevant to two of the six key policy options in the China CCDR – (i) decarbonizing key energy demand sectors, particularly transport, and (ii) enhancing climate resilience in rural landscape and urban areas. Aside from reducing carbon emissions through its investment in public transportation, the PDO was to be achieved by improving the bus system, cycling facilities, and use of electric buses. The PDO was also to be achieved by upgrading rivers and drainage systems to reduce flood risks, again highly relevant to the CCDR's objectives and recommendations.

**World Bank experience in the sector, municipality, and in the country:** The World Bank has had a long engagement with China in urban development and engaged in a few municipalities and towns in various provinces of China, including Chongqing, Sichuan, Tianjin, Shaanxi, and Anhui. The World Bank and the Development and Research Center of the State Council on China’s urbanization jointly prepared the “Urban China: Toward Efficient Inclusive and Sustainable Urbanization” report. The PDO was highly relevant to the implementation of this report as it emphasized people-centered development, more compact and mixed-use



land development patterns to contain urban sprawl, maximize resource efficiency, curtail the negative externalities of pollution and congestion, and create more livable and resilient cities.

The PDO was pitched at an adequate level to address Ningbo's burgeoning urban development problems. The PDO is focused on Ningbo's development efforts to address the increase in migrants, respond to mobility needs and address the hazards brought by climate change by reducing flooding in this coastal town. The relevance of objectives is rated High.

## Rating

High

## 4. Achievement of Objectives (Efficacy)

### OBJECTIVE 1

#### Objective

To improve the use of urban public space in the project Counties

#### Rationale

**Theory of Change (TOC):** No TOC was prepared at appraisal but the causal link between inputs, outputs, and outcomes were presented in the results framework (PAD, Annex 1). A retrospective TOC was prepared for the ICR. Comprehensive regeneration efforts were to target lagging urban settlements with significant cultural sites such as Xiangshan and Ninghai counties and Fenghua district. The project was to be implemented using a framework approach. This meant that subproject investments were appraised in three batches: the first in March 2016; the second in October 2017; and the third in September 2019. The Project Implementation Plan (PIP), approved at the appraisal stage, detailed the institutional arrangements, work-flow procedures (including selection criteria to safeguards aspects as subprojects were finalized and included in the pipeline), and a time-bound schedule of the project cycle, noting key activities such as resettlement, design, and construction. The activities to be financed would provide integrated urban solutions for "high quality" urbanization. Design strategies would be people-centric and would expand coverage, upgrade the urban utilities service levels, and create open spaces for a safe, attractive urban environment.

**Inputs:** were to be financing the upgrading of public spaces along main transport corridors and commercial streets and finance the improvement of road safety for pedestrians and cyclists to enhance the attractiveness of the existing centers.

**Outputs:** were to include the regenerated public urban space along main transport corridors, upgraded commercial streets, and regenerated areas around cultural sites with restored historical features, streets, and lanes.

**Outcomes:** were to be the improved use of public space and overall, inclusive cities where low income and vulnerable groups and migrant workers benefit from a high-quality urbanization. Other expected outcomes were the increase of pedestrian and bicycle flows and stationary activities in urban regenerated areas. Urban





designers in public life studies use the term “stationary activities” to describe activities by people who are passing by and spending time in the public space, including doing physical exercise, being seated, shopping, waiting for public transit, etc.

**Critical Assumptions:** Municipal, county, and district governments provide the required counterpart financing in a timely manner; adherence to the sub-project selection criteria for the framework approach; PMOs and PIUs can implement the project; have adequate management; budgeted for operations and maintenance (O&M); and have the expertise to sustain the completed project investments.

#### OUTPUTS:

- 65.62 hectares of urban area was regenerated. The baseline was 0, the original target was 86.7 hectares. The target was **not achieved**.

The ICR reported the completion of the following additional outputs that were not part of the results framework:

- The Fenghua Intelligent Transportation report
- The Xiangshan Public Transport Development Strategies report

#### OUTCOMES:

- 369,188 benefited from the improved urban space, the original target of 569,284 direct beneficiaries was **not achieved**. 48.8 percent of these were women, original target of 49.36 was **almost achieved**. The original target was the total urban residents of the three project counties/district, but the target included double counting issues across different components.
- Increase of pedestrian and bicycle flows and stationary activities in areas with urban regeneration intervention. The original target of 15 percent was not measured because the 2020 restructuring replaced this indicator. The number may not appropriately capture the quality of the improved public space because the flows could be affected by other factors such as weather, big events in the area, or when the survey would be conducted. (see below).

Overall, the efficacy of the project to achieve this objective is rated **Modest** because the target outcome indicators were not achieved.

#### Rating

Modest

#### OBJECTIVE 1 REVISION 1

##### Revised Objective

The objective was not revised. Indicators were revised.

##### Revised Rationale



**Revised Theory of Change:** The TOC was not revised.

**Revised Inputs:** Funds available for the subprojects under this objective were reduced. Targets were reduced accordingly. The implementing entity contracted a consulting firm to conduct annual surveys on satisfaction rate in the use of public space.

**Revised Outputs:** Following the framework approach, output targets were reduced. Subproject components were adjusted based on local government development priorities at the time of appraisal, availability of funds, and readiness to implement.

**Revised Outcomes:** The target outcome indicator for beneficiaries was reduced to avoid double counting of the beneficiary residents from the target counties and district using data from the 7th China National Population Census started in 2020. An outcome indicator, “the increase in pedestrian, bicycle flows, and stationary activities in urban regenerated areas” was replaced by “the satisfaction rate expressed by pedestrian respondents, those who benefited from improved bicycle flows, and those who conducted stationary activities in urban regenerated areas.” This revised indicator was to better reflect the outcome of the improved use of public space.

**Revised Critical Assumptions:** The critical assumptions were unchanged.

#### REVISED OUTPUTS:

- 65.62 hectares of urban area was regenerated. The baseline was 0, the reduced target was 62.7 hectares. Note that the ICR described this reduced target as a correction because the original target of 86.7 hectares included motor lanes. The **revised target was exceeded**.

#### REVISED OUTCOMES:

- 369,188 benefited from the improved urban space, the revised target of 365,665 direct beneficiaries **was achieved**. 48.8 percent of these were women, the revised target of 48.5 **was achieved**. The revised target was updated from data generated by the 7th China National Population Census of 2020.
- A 72.30 percent satisfaction rate was registered by pedestrians, bicycle users, and participants of stationary activities in areas with project-supported urban regeneration interventions. The 2020 restructuring introduced this indicator to replace the “increase in pedestrian, bicycle flows, and stationary activities in areas with urban regeneration intervention.” The target of 72 percent **was achieved**.

Overall, the efficacy of the project to achieve this PDO with revised target indicators is rated **Substantial** because the target outcome indicators were achieved.

**Revised Rating**  
Substantial

## OBJECTIVE 2





## Objective

To improve urban mobility, in the project Counties

## Rationale

**Theory of Change:** No TOC was prepared at appraisal but the causal link between inputs, outputs, and outcomes were presented in the results framework (PAD, Annex 1). A retrospective TOC was prepared for the ICR. Xiangshan and Ninghai counties and Fenghua district were to be the target towns. Completing the urban road network was expected to improve urban mobility. Improving the capacity, reliability, and service quality of the bus system involved building and rehabilitating roads in counties, constructing new terminals and depots, acquiring modernized electric buses, installing smart traffic management systems, central traffic control systems, and other related activities.

**Inputs:** To strengthen urban mobility, the project was to finance the completion of the urban road network and finance the improvements in the capacity, reliability, and service quality of the bus system. In addition, a multi-year capital investment and asset management plan for road maintenance and operation was to be financed.

**Outputs:** were to include newly constructed or rehabilitated roads, the newly constructed bus terminals, depots, bus stops, rehabilitated public bus facilities and related systems, and new electric buses to modernize the bus fleet. The completed plan for a multi-year capital investment and asset management plan for road maintenance and operation was an additional output.

**Outcomes:** were to include the improved efficiency of bus services and traffic management, and reduced carbon emission from the modern electric buses. An increase in user satisfaction with the services, an increase in pedestrian and bicycle flows and stationary activities, increase in the number of public transport users in the urban areas and a public transport user satisfaction rate were to reflect improved mobility. Another outcome was the adoption of the multi-year capital investment and asset management plan for road maintenance and operation noted above.

**Critical Assumptions:** Municipal, county, and district governments provide the required counterpart financing in a timely manner; adherence to the sub-project selection criteria for the framework approach; PMOs and PIUs can implement the project; and adequate management, operations, and maintenance (O&M) budgets, and expertise assured the sustainability of project investments.

## OUTPUTS:

- 95 new energy buses were procured. The ICR did not report a target.
- 3,767 tons of cumulative carbon emission were reduced due to the use of electric buses. The baseline was 0 and **the original target of 2,139 tons was exceeded**. The operating mileage of all new energy buses was calculated from the time the first batch was put into operation until project closing. The attenuation of battery function led to the calculation of total carbon emissions. All new energy buses were compared to diesel buses of the same size from the same manufacturer. The total carbon emissions under the same operating mileage were calculated for both scenarios. The difference between the total carbon emissions of the two scenarios contributed to carbon emission reduction.
- 21.95 km of roads were constructed, **exceeding the original target of 16.69 km** of increased total length of roads.



- The reduced number of reported traffic accidents per 10,000 people with an original target of 15 percent reduction was **not measured** because restructuring replaced this indicator (see below).

The ICR reported the completion of the following outputs but were not part of the results framework:

- Ningbo Sustainable Urbanization Report under the Yangtze River Delta Regional Integration
- Ningbo Urban Resilience (emergency management) Study

#### OUTCOMES:

- The original target of 27 percent in the number of public transport users in urban areas was **not measured**. The 2020 restructuring dropped this indicator because many external factors such as population changes, size of the urban area, availability of bus services, etc. would affect this measure. This indicator was replaced with an improved measure of urban mobility (see below).
- 90.10 percent rate of public transport user satisfaction was reported. The baseline was 29 percent, and the **original target of 60 percent satisfaction rate was exceeded**. The Xiangshan Public Transport Company conducted the survey using factors such as security, speed, convenience, punctuality, comfort, and efficiency.
- The multi-year capital investment and asset management plan for road maintenance and operation was completed. The original target was its adoption. Therefore, this target was not achieved **as targeted**. This indicator was redefined during restructuring below.

Overall, the efficacy of the project to achieve this objective is rated **Substantial** with moderate shortcomings. One of three outcome indicators was exceeded; one was not measured and later replaced, the other was redefined to achieve the measure (“adopted” replaced by “completed”).

#### Rating

Substantial

### OBJECTIVE 2 REVISION 1

#### Revised Objective

The objective was not revised. The indicators were revised.

#### Revised Rationale

**Revised Theory of Change:** No changes were made to the TOC.

**Revised Inputs:** While financing for the construction disbursement category was increased from 65 to 100 percent to fully use World Bank loan proceeds, the available funds for the subprojects under this objective decreased.

**Revised Output:** The subproject targets were increased based on readiness to implement and development priorities of the local governments at the time of the phased appraisal. In addition, the output indicator



“increased total length of roads” was modified to “the length of newly constructed and rehabilitated roads” with an increased target to better describe the expected output.

**Revised Outcomes:** The original indicator of “increase in the number of public transport users in urban areas expressed as a percentage increase” was replaced by “the average traveling speed of buses during peak hours.” This indicator was expected to better represent the impact of improved mobility. It was meant to reflect the time savings that bus users would gain to better use in productive endeavors. This link to future productive endeavors from improved mobility was not reported. The outcome indicator regarding the “adoption of the completed multi-year capital investment and asset management plan for road maintenance and operation” was replaced by “completion of a multi-year capital investment and asset management plan for road maintenance and operation.” The redefined indicator remained at output rather than outcome level and did not include supporting indicators that would have reflected the expected outcomes.

**Revised Critical assumptions:** No changes were made.

#### REVISED OUTPUTS:

- 21.95 km was the total length of newly constructed and rehabilitated urban roads. Baseline was 0, **the revised target of 20.47 km was exceeded.**
- Cumulative carbon emissions were 3,767 tons, **exceeding the target of 2,139 tons.** This indicator was introduced during restructuring and replaced the indicator “The reduced number of reported traffic accidents per 10,000 people with a target of 15 percent reduction”.
- 20.47 km of newly constructed and rehabilitated urban roads was achieved, **achieving the target of 20.47 km.** This indicator was introduced at restructuring and replaced the indicator “Increased total length of roads with an original target of 16.69 km”.
- The indicator “the **adoption** of a multi-year capital investment and asset management plan for road maintenance and operation” was redefined to “**completion** of multi-year capital investment and asset management plan for road maintenance and operation.” The plan was completed but the ICR did not report if the local government has adopted it.

#### REVISED OUTCOMES:

- 20.6 km/hour was the average traveling speed of buses along project-supported corridors during peak hours. With a baseline of 16.10 km/hour, **the target of 20 km/hour was achieved.** This indicator was introduced in the 2020 restructuring and replaced the original “increase in the number of public transport users in urban areas (percentage).” The Xiangshan Public Transport Company collected the data by calculating the average bus speed at rush hours on selected project-financed road sections in Xiangshan.

Overall, the efficacy of the project to achieve this objective of improved urban mobility using revised indicators is rated **Substantial**.

**Revised Rating**  
Substantial



### OBJECTIVE 3

#### Objective

To reduce flood risk in the project Counties To reduce flood risk in the project Counties

#### Rationale

**Theory of Change:** No TOC was prepared at appraisal but the causal link between inputs, outputs, and outcomes were presented in the results framework (PAD, Annex 1). A retrospective TOC was prepared for the ICR. To reduce flood risks, selected structural and non-structural measures were to be implemented for vulnerable areas to be better prepared for flooding and to protect critical assets and groups from the impacts of floods. Structural measures were to include the construction and upgrading of existing rain grits, inlets, outlets, and drainage pipes, renovation of key canal and river sections, and construction of low impact development demonstrations in public areas. Related technical assistance (TA), for example - the research study on “Flood Risk Assessment” and “Blue Asset Management” - was to complement the physical investments toward this outcome.

**Inputs:** were to include the financing of the structural and nonstructural measures.

**Outputs:** were to consist of new and improved drainage services delivered to residents of the target areas.

**Outcome:** was to be reduced risk of flooding.

**Critical Assumptions:** Municipal, county, and district governments provide the required counterpart financing in a timely manner; adherence to the sub-project selection criteria for the framework approach; PMOs and PIUs can implement the project; and adequate management, operations, and maintenance (O&M) budgets, and expertise assured the sustainability of project investments.

#### OUTPUTS:

- 6,276.8 hectares of land area was provided with new and improved drainage services. The baseline was 0 and **the original target of 9,036 hectares was not achieved**. The drainage system in the central urban area of Ninghao county focused on river improvement and low impact development projects. The river improvement projects cover a total of 11 rivers, encompassing the entire central urban area. The low impact development project concentrated in developing the Puhu block, and the area of the new or improved drainage system corresponded to this area (watershed).
- A multi-year capital investment and asset management research for river maintenance and operation was completed, **as targeted**.

The following studies were other outputs not reported as part of the results framework but contributed to achieving the outcome:

- The Ninghai Flood Assessment Report was completed.
- The Ninghai Blue Asset Flood Control Management, Operation, and Maintenance report was completed.

#### OUTCOMES:



- Reduced flooded area by 234.53 hectares after a 1-in-10-year rain event. The baseline was 0 and the original target was 409.7 hectares. **The target was not achieved.**

Overall, the efficacy of the project to achieve this objective is rated **Modest** because key target indicators were not achieved.

**Rating**  
Modest

### **OBJECTIVE 3 REVISION 1**

#### **Revised Objective**

The objective was not revised. The indicators were revised.

#### **Revised Rationale**

**Revised Theory of Change:** No changes were made to the original TOC.

**Revised Inputs:** Financing for the construction disbursement category was increased from 65 to 100 percent to fully use World Bank loan proceeds. This increased the available funds for the activities under this objective.

**Revised Outputs:** Introduced an increase in the targets for the outputs of subprojects under this objective. In addition, the indicator previously identified as an outcome indicator (i.e., land area with improved or new drainage services) was now moved to the more appropriate category of intermediate output indicator. The originally planned flood risk management investment in Xiangshan was cancelled and the final appraised cost of subprojects in Ninghai reduced the target value of the indicator from 409.7 ha to 217.8 ha.

**Revised Outcome:** The target indicator for the reduction in the flooded area that is not free of water within 24 hours after a major (1-in-10 years) rain event expressed in the target of 409.7 ha was dropped. A new outcome indicator was introduced; Reduced flooded area within 24 hours after a major (1-in-10 years) rain event, expressed in hectares. This indicator was previously noted as an intermediate result (output) and was reworded to better measure the outcome.

**Revised Critical Assumptions:** No changes were made.

#### **REVISED OUTPUTS:**

- 6,276.8 hectares of land area was provided with new and improved drainage services. The baseline was 0 and **the revised target of 5,101 hectares was exceeded.**

#### **REVISED OUTCOMES:**

- Reduced flooded area by 234.53 hectares after a 1-in-10-year rain event. The baseline was 0 and the **revised target of 217.6 hectares was exceeded.**



Overall, the efficacy of the project to achieve this first revision of the third objective is rated **Substantial** as the outcome targets were exceeded.

**Revised Rating**  
Substantial

## OVERALL EFFICACY

### Rationale

**ORIGINAL EFFICACY:** The overall efficacy of the project to achieve the first and third objectives using the original indicators is rated **Modest** while that of the second objective is rated **Substantial** with moderate shortcomings. The overall efficacy is rated **Modest**.

**Overall Efficacy Rating**  
Modest

**Primary Reason**  
Low achievement

## OVERALL EFFICACY REVISION 1

### Overall Efficacy Revision 1 Rationale

**REVISED EFFICACY:** The overall efficacy of the project to achieve the first revision of the first, second, and third objectives using revised indicators is rated **Substantial**.

The overall efficacy of the project to achieve all three objectives is rated **Substantial**.

**Overall Efficacy Revision 1 Rating**

Substantial

## 5. Efficiency

**Economic and Financial Efficiency:** At appraisal, a cost-benefit analysis assessed the economic viability of selected subproject investments in Xiangshan under the three components - Urban Regeneration and Urban Transport, and Flood Risk Management. A 6 percent discount rate was used. The estimated economic internal rate of return (EIRR) for urban roads, public transport, and urban regeneration was estimated at 13.9 percent, and a net present value (ENPV) of RMB288.6 million. The estimated EIRR for flood control management was estimated at 12.2 percent, with an NPV of RMB135.7 million. Sensitivity analysis using a 15 percent increase in capital and O&M costs resulted in EIRRs greater than 10 percent.





**Financial Analysis.** At appraisal, a fiscal assessment of Ningbo and the selected counties was conducted to assess their capacity to provide the required counterpart funds for project implementation and for subsequent O&M, as well as to service project related debt. The assessment concluded that (i) local government debts were about 68 percent of local GDP in 2014; (ii) additional debt would amount to nearly 1 percent of the local GDP (or nearly 2 percent of the local governments' outstanding debt), which is considered manageable; (iii) the Ningbo Municipal Government would issue a commitment letter for the portion of its counterpart funds to be financed by local government bonds; (iv) less than 0.2 percent of the local fiscal budget over five years was within the local governments' budgetary capacity to meet the required implementation counterpart funds; (v) efficiency improvements brought by investments in urban regeneration and flood control measures will yield moderate O&M cost savings, while municipal budgets can accommodate the estimated small incremental O&M costs needed by the newly constructed urban infrastructure (for example, pump stations and the West Ring Road in Xiangshan).

At closing, the estimated EIRRs and NPVs for the actual investments in the project counties/district, used the same methodologies at appraisal. The estimated EIRR was 7.9 percent for urban regeneration and urban transport investments and 10.7 percent for the flood risk management investments or a total of 9.8 percent. However, the ICR cautioned that the estimated EIRRs and NPVs at appraisal and closing were not comparable because of the differences in assessment scope and cost bases (ICR, paragraph). Two factors affected this non-comparability of estimated economic efficiency. First, at appraisal, cost benefit analysis was based on a hypothetical investment portfolio of the first batch of subprojects in Xiangshan county alone, only one of three target areas. At closing, cost-benefit analysis used actual investment costs for all three target areas. Second, an economic slowdown marked the target areas at closing different from the near double-digit growth experienced at appraisal. The estimates of economic efficiency remained higher than the 6 percent discount rate but less than appraisal estimates.

**Administrative and Operational Efficiency:** Subproject investments followed a framework approach and were appraised in three batches: first in March 2016, the second in October 2017, and the third in September 2019. The Project Implementation Plan (PIP) guided these appraisals and implementation, including institutional arrangements, work-flow procedures (including finalizing process for all subprojects). Three factors delayed the project by 22 months. First, low capacity of the PMO and the PIUs. The Ningbo PMU signed a Memorandum of Understanding with each PIU to define responsibilities, agree on deliverables, and timelines to expedite implementation. (ii) the Jiang's Ancestral Hall subproject for urban regeneration for Fenghua district was delayed by two years because the hall was listed as a national cultural asset. This required the National Cultural Heritage Administration Bureau to approve the subproject design. The PIP did not capture this requirement prior to implementation. Third, COVID 19 affected project implementation as the government adopted measures to control its spread. Impacts included (a) a decrease in procurement and bid evaluations; (b) disrupted supply chains; (c) stopped land acquisition and compensation payments; (d) some job losses and tight labor market conditions with limitations on construction activities; (e) temporary interruption of contract execution; (f) sharp fluctuations in commodity prices with significant increases in building material prices. Competitive bidding led to loan savings as contract prices were lower than project design estimates. In addition, counterpart funds financed the contract for Juying road in Xiangshan because contract disputes led to re-bidding and the Xiangshan government required that the construction be completed before the 19th Asian Game events in September 2023. As a result, the final loan proceeds utilized US\$136.314 million (or 91 percent of the original loan amount of US\$150 million). The loan savings were canceled after the disbursement deadline of January 31, 2024. The PDO was fully achieved with longer implementation time accompanied by a 9 percent reduction in available loan funds.



Overall, the project efficiency is rated Modest. Economic efficiency achieved at closing was less than that estimated at appraisal. The operational inefficiency manifest in the 22-month extension also contributed to this modest rating.

## Efficiency Rating

Modest

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		0	0 <input type="checkbox"/> Not Applicable

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

## 6. Outcome

Below are the details of the split rating:

	Original	After Restructuring
Relevance of Objectives	High	
EFFICACY of the project to achieve		
Objective 1	Modest	Substantial
Objective 2	Substantial	Substantial
Objective 3	Modest	Substantial
Overall Efficacy	Modest	Substantial
Efficiency	Modest	
Outcome	Moderately Unsatisfactory	Moderately Satisfactory
Numerical Value of Outcome	3	4
Disbursement (in US\$ millions)	35.75	100.61
Disbursement Rate (in percent)	$35.75/136.3 = 26.2$	$100.61/136.3 = 73.8$
Weighted Value of Outcome	$3 * .0262 = .079$	$4 * 0.738 = 2.95$
Overall Outcome	$0.79 + 2.95 = 3.74$ rounded to 4	Moderately Satisfactory



**a. Outcome Rating**  
Moderately Satisfactory

## 7. Risk to Development Outcome

The following pose risks to development outcomes:

- **Environmental Risk** from natural hazards and climate change driven events. Ningbo is a coastal city. Climate change has increased the frequency of extreme weather events, such as typhoons and floodings. Frequent occurrences of these events would destroy the urban infrastructure and disrupt the livelihoods of residents. To mitigate this risk, the Ningbo PMO conducted a study on City Resilience after the first restructuring to identify appropriate emergency preparedness. The study reviewed the urban resilience work in Ningbo and international good practices and detailed the emergency response system in Ningbo from social, economic and construction perspectives. In August 2023, the Ningbo PMO organized a series of training sessions on how to implement the study recommendations with the participation of stakeholders such as management officers and policymakers from the government's disaster risk management sector.
- **Financial Risk** of management and O&M obligations. To mitigate this risk, the county and district governments committed to the O&M needs of the created assets. They designated agencies responsible for the O&M needs of the main asset groups for transport investments, new electric buses, intelligent bus and traffic management systems and the flood control investments with clear plans, accompanied by annual budgets.
- **Technical Risk** of potential reduced support for public transport. As road safety and travel times on roads improve, traffic congestion reduced, and standards of living increase, cars may become the preferred mode of transport over public buses. Public transport would still be available to meet the needs of the riding public, particularly the poor and vulnerable groups in society. To mitigate the risk, local governments may need to keep on improving accessibility, reliability, and predictability to reduce wait, travel times, and increase the satisfaction rate from the riding public.

## 8. Assessment of Bank Performance

**a. Quality-at-Entry**

The World Bank project team designed this project and defined the PDO that was highly relevant to the World Bank strategy for China and to the national, provincial, local urban development strategies and plans of China and those of the target local governments. The three outcomes embedded in the PDO reflected not only the municipal-level priorities but complemented those at the national-level. The project team drew lessons from the World Bank's global knowledge products on resilient, livable, and accessible cities as well as its urbanization study for China. Among the lessons the Bank team included in its design



were: (i) regenerating compact cities and mixed-use communities may curb urban sprawl, increase land use efficiency, foster reinvestments in urban services, and reduce the costs of basic public service delivery; (ii) public transit and non-motorized transport (NMT) may counteract rapid motorization and car-oriented development to help cities provide affordable and effective low carbon mobility; (iii) a holistic, preventive, and balanced approach to flood risk management using structural and non-structural measures may mitigate flooding and reduce damages; (iv) managing existing assets sustainably may complement new infrastructure investments by improving management such as improved O&M action and asset management plans linking asset management requirements with budgeting and financing processes.

The World Bank team worked closely with the Zhejiang provincial and Ningbo municipal governments in mobilizing specialists in urban planning, engineering, economics and financial analysis, procurement, and FM, environment, and social safeguards policies. The Bank team adopted the framework approach for faster preparation and appraisal by prioritizing subprojects that were closely aligned with local government's development priorities, ready to be implemented, and allowed for progressively adding subprojects in batches for implementation. The World Bank team safeguarded the framework approach by designing a Project Implementation Plan (PIP) that outlined selection criteria, consistent approval procedures, and clear safeguard requirements for appraising subsequent subprojects. However, the framework approach also created uncertainty because the results framework consisted of indicators, targets, and cost estimates based on a segment of the overall project investments that necessitated adjustments at restructuring to the components, costs, indicators, and end target values. The Project Leading Groups (PLGs), the Ningbo Municipal Project Management Office (PMO) and each Project Implementation Unit (PIU) of the three target local governments were fully staffed before loan effectiveness. The World Bank team delivered the staff training sessions in project procurement and FM early on. The Bank team also prepared operational and financial management (FM) manuals and a procurement plan for the first batch of subprojects ahead of loan effectiveness.

Overall, the World Bank team's performance in ensuring quality at entry is rated Satisfactory.

### **Quality-at-Entry Rating** Satisfactory

#### **b. Quality of supervision**

The World Bank team conducted 14 implementation support missions, including virtual missions supported by a team with an appropriate mix of skills over the 7-year project period. The Bank team restructured the project following the outcome of the Mid Term Review and required monthly project progress reports from the PMO to summarize progress for each contract and identifying bottlenecks for missing agreed milestones. The Bank team followed up with on-line meetings to address any major issues and used the PLGs to help resolve issues. The World Bank task team leader (TTL) and members were in Beijing. This allowed for daily communications with the implementing entities even during the pandemic. The task team issued 13 Implementation and Results Reports (ISRs) that provided realistic assessments of project progress and corrective measures to resolve implementation issues, particularly before the MTR when low capacity translated to slow implementation progress. The World Bank team strengthened the project management capacity of the PMO/PIUs through technical advice and targeted trainings, including (i) procurement management, including contract supervision, quality of procurement documentation and



dealing with large numbers of variation orders particularly in the busy latter-half of the project; (ii) financial management, (iii) engineering design and construction quality control, (iv) environmental and social safeguards action plan implementation management, and (v) M&E. The Bank team also redefined or replaced indicators and targets of the results framework with more appropriate ones following the MTR. The World Bank team issued a new "Tentative Description of ESF/Safeguard Measures: Precautions for Building/Civil Engineering Projects in Response to COVID-19".

Overall, the Bank performance at supervision is rated Satisfactory.

With both performance at entry and supervision rated Satisfactory, the overall rating of Bank performance is rated Satisfactory.

### **Quality of Supervision Rating**

Satisfactory

### **Overall Bank Performance Rating**

Satisfactory

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

### **a. M&E Design**

At appraisal, the theory of change was represented by the credible causal relationships between the inputs, outputs, and outcomes of the results framework with the outcome indicators supported by component-specific intermediate results or outputs, including core sector indicators. Baselines and targets for all counties and all project activities were noted (PAD, Annex 1). The PDO was clearly stated although the "use of public space" needed further elaboration to grasp the development problem addressed by the component activities supporting this objective. The PIP detailed M&E arrangements and responsibilities where the local Census Bureau provided data and consultants conducted customized surveys as needed. Target values of all indicators were to be reviewed during the mid-term review (MTR). Most indicators were specific, measurable, achievable, and time bound, but not all relevant indicators were identified to show how the inputs/activities contributed to achieving the outcomes. For example, how the studies undertaken under the fourth component contributed to the PDO was not identified or measured. One indicator did measure the completion of the study on Blue Asset Management and O&M in Ninghai County, but other studies that informed strategic decision-making of local governments in implementing the infrastructure investments remained unacknowledged. In addition, not all indicators proved relevant and were redefined or replaced (see Implementation below). For example, (i) double-counting of beneficiaries as project-affected urban areas overlapped, and (ii) multiple factors affecting targets that could not accurately attribute its contribution to the project outcome.

### **b. M&E Implementation**

The Ningbo Project Management Office and the country/district Project Implementation Units implemented the M&E as designed. An M&E officer of the PMO prepared semi-annual progress reports.



The adequacy and relevance of some indicators of the original results framework (both at the outcome and output levels) to effectively measure progress towards the achievement of the PDOs were corrected at the MTR although those related to the contributions made by the fourth component to achieving the PDO remained unaddressed. Restructuring addressed shortcomings including target levels, except for the indicators associated with the fourth component. The World Bank team and the Ningbo PMO reviewed the indicators, redefined, or replaced as needed supported by data collection methodologies and revised the results framework at the restructuring following the MTR. An experienced independent external monitoring consulting team conducted the separate social and environmental monitoring.

### c. M&E Utilization

M&E data was used to prepare semi-annual progress reports used by management and the World Bank team to inform the adoption of corrective measures as needed. M&E data informed the MTR and the subsequent revisions of indicators and targets. Data collection methods and data quality were assessed to be satisfactory. M&E data informed the adoption of corrective measures to address implementation issues. M&E data also informed the World Bank team in completing its Implementation Status and Results Reports (ISRs).

The overall M&E quality is rated **Substantial**, as while there were shortcomings related to the lack of indicators to capture all relevant contributions, particularly those under the fourth component, the results framework provided sufficient evidence for a Substantial rating of the Revised Efficacy (indicating Substantial quality of the M&E System).

### M&E Quality Rating

Substantial

## 10. Other Issues

### a. Safeguards

**Environmental Safeguards:** The project was classified as Category “B” requiring a partial assessment due to the type, location, scale, nature, and magnitude of the potential impacts during the construction and operating phase. The project triggered three World Bank safeguard polices, including (i) Environmental Assessment (OP4.01); (ii) Physical Cultural Resources (OP4.11), and (iii) Involuntary Resettlement (OP4.12). The project triggered Environmental Assessment (OP4.01) because of expected environmental impacts from construction activities, e.g., noise, dust, spoil disposal and temporary storage on-site, soil erosion at borrow pits, wastewater discharge, vegetation loss, traffic impact, social disturbance, and safety. Off-site impacts caused by disposal of spoil from road construction and dredged material for flood control were also expected with main operational impacts from noise and emissions from road traffic, road safety, sewage, and garbage generated by the bus terminals. Most of these impacts were temporary and limited to the sites. Environmental Assessment (EA) documents were prepared according to World Bank policies and Chinese domestic laws and regulations. The EA was conducted in parallel with the feasibility studies to integrate environmental and social considerations in the technical designs. The Environmental Management Plan (EMP) specified measures to address environmental impacts. An acceptable Environment and Social Management Framework (ESMF) was submitted to the Bank describing the environmental and social





screening procedures, preparation, implementation, and monitoring of sub-projects according to the relevant Bank safeguard policies for sub-projects that were to be prepared during implementation (for example, in Ninghai and Fenghua Counties). The ESMF also included how proper sub-project and site selection would identify and avoid impacts on important habitats and ecosystems. The EA/EMP on the identified activities in Xiangshan was to be a model for the preparation of EAs for activities for which FSRs and technical designs would be finalized during implementation. The Environmental Impact Assessment (EIA)/EMP and Environment and Social Management Framework (ESMF) were disclosed locally in November 2015 and on February 17, 2016, and through the World Bank's Infoshop in December 2015 and February 26, 2016. The project complied with the provisions of the World Bank's environmental safeguards according to OP4.01(ICR, paragraph 76).

The project triggered OP4.11 because the Environmental Assessment conducted a survey of physical cultural resources during project preparation and identified: (i) the Jiang's Ancestral Hall subproject in Fenghua County located in the control zone of the National level Cultural Relics Protection area; and (ii) several local temples that would be affected by a road alignment proposed in Xiangshan County. Chance-find procedures were included in the EMP. Mitigation measures were designed and implemented for the Jiang's Ancestral Hall subproject and for the road subproject in Xiangshan. During construction of the Puhu Lake subproject in Ninghai county, an ancient water-well, dating back to the Qing Dynasty was unearthed. The *Chance Finding Procedures* contained in the EMP were strictly followed and complied with and the water-well was protected and preserved. The project complied with the provisions of the World Bank's OP4.11 (ICR, paragraph 77). Several local temples beside the new alignment of the West Ring Road in Xiangshan County were found after a survey of physical cultural resources (PCRs) during EA preparation. the EMP included Relevant measures, including a chance find procedure, to address the potential impacts of the project on these PCRs. the EMSF also included relevant provisions in case PCRs were uncovered or affected during the implementation of investment activities. FSRs were to be prepared at implementation.

**Social safeguards:** The project triggered Involuntary Resettlement (OP/BP 4.12) because permanent and temporary land acquisition and resettlement activities were anticipated during construction. The Bank accepted the submitted Resettlement Action Plan (RAP) and Resettlement Policy Framework (RPF). The RAP/RPF and Social Assessment (RAP/RPF/SA) were disclosed on Ningbo local website on December 10, 2015, and the revised version was subsequently disclosed on February 17, 2016. The final versions of the RAP and RPF were disclosed at the World Bank's InfoShop on February 18, 2016 and the SA was disclosed at the InfoShop on February 26, 2016. Land acquisition and resettlement activities were implemented in compliance with the RAP. The PMO appointed Hohai University as an independent monitoring team who submitted 12 semi-annual EMP Implementation Reports and one post-evaluation report to the World Bank prepared. At closing, the project acquired 461.7 hectares of land, and resettled 1,428 households or 4,522 people. All resettlement and compensation processes were completed except for 16 households in Xiangshan county who expect to receive their full compensation in April 2024. The resettlement agreements reached with these 16 households included two parts, cash compensation and resettlement housing. Cash compensation was fully received by these households before project closing. Resettlement housing construction was delayed and was to be delivered in April 2024. The Xiangshan PMO commissioned a social consultant team to discuss with the 16 affected households if they preferred cash compensation for the housing entitlement. All 16 households preferred to wait for the completed resettlement houses. The World Bank Task Team clarified that the Ningbo PMO would send an update by November 2024.

The project established a Grievance Redress Mechanism (GRM). The PMO and PIUs disclosed information on project activities to the public on the local government's official website, at local meetings, in print and



electronic media (newspapers, television). The PMO designated officials for receiving and addressing inquires and complaints at county, township, and village level. Appropriate actions were taken to respond to the inquires in a timely manner. For example, during the project implementation, PMO/PIUs were in close consultation with local residence and addressed their concerns through optimizing civil works designs. Options for receiving cash compensation or resettlement housing, or both, were kept open to affected households to meet different preferences. Upon request, these households were also provided with different choices of locations for the resettlement housing. No significant complaints were received during the project implementation. The project complied with the World Bank OP4.12 (ICR, paragraph 81).

The Ningbo Municipal PMO had a well-established environmental management system (EMS). The EMS defined the roles and responsibilities of each County/District level PIUs, and contractors, construction supervisors, and the appointed external independent environmental monitoring agency. Each PMO/PIU assigned dedicated environmental staff in to oversee the environmental protection related issues of the project. The requirements of the EMP were included in all bidding documents for construction contracts of the project. Construction supervisors conducted routine supervision for the construction quality and occupation health and safety (OHS) aspects of the project. Environmental trainings were regularly conducted. The environmental mitigation measures were well implemented and mitigated the potential adverse negative impacts of the project. Contractors complied with measures to address the impacts of the COVID19 pandemic. Good environmental management practices included the formulation and implementation of traffic management systems and plans, and the strengthening of the public consultation and information disclosure processes.

## **b. Fiduciary Compliance**

**Financial Management:** The project complied with the World Bank’s financial management (FM) policies. The project accounting and financial reporting complied with the regulations issued by the Ministry of Finance (MOF) and the requirements specified in the loan agreement. No FM issues were reported. Any FM-related issues raised at supervision were resolved. The external project audit reports had unqualified audit opinions. In addition, the withdrawal procedure and funds flow arrangements were appropriate and loan proceeds were disbursed.

**Procurement:** Procurement of works, goods and consulting services complied with the legal agreement and the World Bank’s procurement policy and procedures. A total of 41 World Bank-financed contracts were procured and implemented. The PMO/PIUs designated procurement staff. Initially, the PMO and PIUs were not acquainted with the procurement processes. The delay in land acquisition; in preparatory works that led to inadequate design, specifications, or inaccurate scope of works, and domestic approval procedures slowed down initial procurement as well. A few contracts were delayed at implementation because the teams lacked experts to manage contract-related complaints and variation orders. Periodic procurement training enhanced staff capacity. A procurement agent and project management consulting team also assisted the PMO and PIUs because of significant increase in procurement after the MTR.

## **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	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

**12. Lessons**

The project identified the following lessons:

- **When design uses a framework approach to facilitate preparation and allow flexibility at implementation, the accuracy of M&E targets and project costs may suffer.** In this project, the framework approach meant that subproject investments were appraised in various stages and indicators and costs were allocated according to the initially identified subprojects. While the framework approach gave the project flexibility and timeliness to respond to priority changes in local development plans, required a strong project management capacity. Significant efforts were needed to appraise investments in different batches following consistent principles and criteria. However, this approach also meant changes in subproject components as subproject appraisals were conducted in phases. These resulted in changes to the pipeline and pointed to inefficiencies in resource use (time and financing)
- **Strong government commitment and high-quality technical assistance may improve implementation and increase knowledge sharing.** In this project, the Ningbo Development and Reform Commission was the most important planning entity of the municipal government and housed the Ningbo PMO. The commission proactively proposed studies to explore solutions for priority urban development and planning strategic issues beyond the project indicating its commitment to exploit the available TA. The choice of Ningbo as the project city was a crucial strategy to demonstrate climate-induced flooding in a typical Chinese coastal city. Towards the end of the project implementation, Ningbo PMO published two analytical papers on “Resilient cities construction and management under climate change – an example from Ningbo” and “Thoughts on Managing the Government Financed Projects” in the China Investment Magazine and the Zhejiang Economy Journal respectively, two high level and influential publications in China and Zhejiang Province.
- **Implementation delays may be avoided if sector policies and requirements are adequately considered.** In this project, regeneration subprojects in the areas around Jiang's Ancestral Hall experienced significant delays. The Hall was listed in the cultural heritage assets managed by the National Cultural Heritage Protection Administration. This meant that



any changes to and around the Hall required their approval. The PIP did not include this as a requirement at implementation and the project was delayed for two years awaiting approval of the design. Early and frequent communication with different levels of administration entities and a better understanding of approval requirements may avoid implementation delays.

### 13. Assessment Recommended?

No

### 14. Comments on Quality of ICR

The report provided an accurate overview of the operation and followed the guidelines. The reconstructed Theory of Change presented a reasonable causal attribution of the inputs and outputs to achieve the outcomes. The narrative and available evidence supported the ratings. The assessment was candid, acknowledging the shortcomings of a framework approach and the lack of indicators to capture all the outputs that contributed to the outcomes achieved. The annexes were useful in providing additional details, such as the breakdown of outputs and outcomes by target area in Annex 1 and the dramatic before and after photos to support the ratings and justify the outcomes. The report cited a few lessons derived from the operation. A shortcoming was the length of the ICR - the main text was more than double the recommended length.

Overall, the quality of the ICR is rated as Substantial.

#### a. Quality of ICR Rating

Substantial