

【Ex-post Monitoring of Completed ODA Loan Project】

Kazakhstan

“Irtysh River Bridge Construction Project”

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1. Project Description



Map of Project Area



Irtysh River Suspension Bridge

1.1 Project Objective

The project objective was to ensure the safe and smooth flow of traffic on a major trunk road by constructing a new bridge across the Irtysh River in Semey city, the country’s fourth largest city, thereby contributing to the stimulation of the local economy.

1.2 Outline of the Loan Agreement

Approved Amount/ Disbursed Amount	21,530million yen/21,237 million yen
Loan Agreement/ Final Disbursement	February, 1997/June, 2004
Ex-post Evaluation	2006
Executing Agencies	Akimat of Semipalatinsk Region (Currently Akimat of East Kazakhstan Region Guarantor: Republic of Kazakhstan
Main Contractor	Ishikawajima-Harima Heavy Industries Co., Ltd. (Currently IHI Infrastructure Systems Co., Ltd.)(Japan)
Main Consultant	Katahira & Engineers Inc. (Japan)

### **1.3 Background of Ex-post Monitoring**

This project was implemented in the Semey City (Semey City was renamed from Semipalatinsk City in 2007. Semey City is used in this report.) The city of Semey located in northeastern Kazakhstan, is the country's fourth largest city as well as one of the important industrial cities in Kazakhstan's northeastern area. It was a base for road transport and rail transport that connect Kazakhstan with central Russia. The city of Semey developed along both sides of the Irtysh River, a major river in Kazakhstan. One of Kazakhstan's major trunk roads crosses the Irtysh River in the city of Semey and leads to central Russia, as well as to the Chinese border. However, the only road bridge (hereinafter referred to as the "pre-existing bridge") in the city was the one built for the above-mentioned trunk line. It was a reinforced concrete bridge constructed in the city center in the 1960s; it was severely aged due to the extreme climate and inadequate operation and maintenance and was in danger of collapse. The traffic volume on the pre-existing bridge at the time of the appraisal (1996) was 33,000 vehicles/day, and this figure was expected to increase. Under those circumstances, this project constructed a new suspension bridge (hereinafter referred as the "new bridge") parallel to the pre-existing bridge in the northern part of the city to ensure main trunk route access.

Total project cost was 29 billion 964 million Yen against 28 billion 321 million Yen (amount of Yen Loan is within the planning amount.) Therefore, efficiency was evaluated as moderate, since the total project cost exceeded the planned project budget by 6%. In addition, the sustainability is judged to be low, because handover of the bridge was not implemented, so an operation and maintenance organization still did not exist and no budget allocations and technical handover were being made. To improve this, the following four recommendations were made for the East Kazakhstan Region as listed below in the post project evaluation. i) Handover of the facilities, ii) Establishment of operation and maintenance organization and budgeting, iii) Handover of the operation and maintenance equipment and construction machinery, and iv) Handover of the operation and maintenance manual and its practical use. If these activities would not be conducted in the short term, the Regional government shall take action to provisionally set up of the operation and maintenance structure.

Therefore, this project was selected for ex-post monitoring and reviewed under each criterion, especially focused on sustainability with the findings from the field survey and other research activities with a final conclusion being drawn.

## **2. Outline of Monitoring Survey**

### **2.1 Schedule of Survey**

This monitoring survey was conducted as shown below.

Monitoring Period: January 2012-September 2012

Field Survey Period: April 6, 2012-April 13, 2012

## 2.2 Constraints of Monitoring

None

### 3. Monitoring Results

#### 3.1 Effectiveness

##### 3.1.1 Quantitative Effects

##### 3.1.1.1 Results from Operation and Effect Indicators

Traffic volume, time required, average speed and safety were studied as indicators for ensuring safe and smooth flow of traffic on the major trunk road.

##### (1) Traffic Volume

Traffic volume at the ex-post monitoring was increased from the period of ex-post evaluation, as summarized in Table 1. Traffic volume on the new bridge was doubled from 2006, although precise data could not be obtained for pre-existing bridge.

Table 1 Traffic Volume on Irtysh River Bridge

	Ex-post Evaluation (2006)	Ex-post Monitoring (2012)
Traffic volume on new bridge (Both Directions: Vehicles/day)	44,402	88,840
Traffic volume on pre-existing bridge (Both directions: vehicles/day)	34,887	10,000 (Estimation <sup>1</sup> )
Total	79,287	88,840 (Excluding pre-existing bridge)
Rate		
Passenger car	83%	74%
Truck and bus	16%	26%
		(Excluding pre-existing bridge)

Source: Multi purpose utilities enterprise operating Irtysh river suspension bridge and interview for transport department, Semey City

##### (2) Time Required and Average Speed

Travel time from the beginning point to the end point on the segment including Irtysh river bridge were compared among the appraisal, post project evaluation and ex-post monitoring. The travel time was measured by a driving test run. The comparison was summarized in Table 2. It was indicated that time saving continued in spite of increase in traffic volume. However, it could not be compared simply according to the differences in season, time and method of measurement. Interviews of a few drivers were conducted in order to supplement conditions of peak traffic hour, since this driving test run was conducted at off peak traffic hour. They said that a minor traffic jam was observed in the peak hour of the morning as well as in the evening, but, this was not considered to be so troublesome. Therefore, it was confirmed that time saving effect continued throughout the day.

According to the aforementioned driving test results, average speeds on the new bridge route and the

<sup>1</sup> Source: Interview from Semey City Traffic Dept.

pre-existing bridge route were calculated as 48km/h and 36km/h, respectively. The speeds on the new bridge route were much lower than that of the opening period. However, we could confirm that effectiveness is maintained by the fact that there was significant increase in traffic volume and these speeds were almost equal to that the average of the trial done in the ex-post project evaluation period (2006).

Table 2 Travel Time and Average Speed of the Route

	Planned (Opening)	2006	2012
Travel time			
New Bridge	8.5 minutes	11 minutes	9.7 minutes
Pre-existing Bridge	17.1 minutes	21 minutes	15.0 minutes
Average speed			
New Bridge	60 km/h	47 km/h	48 km/h
Pre-existing Bridge	32 km/h	26 km/h	36 km/h
Condition			
Date and Time	-	October 4th, 2012, (weekday) around 9 AM	April 12th, 2012 (weekday) Around 11 AM
New Bridge Route	8.5 km	7.0 km, results are estimated to from 8.5 km driving trial	Equivalent to the planned route, 7.8 km
Pre-existing Bridge Route	9.0 km	9.1 km, results are estimated to from 6.0 km driving trial	Equivalent to the planned route, 9.1 km
Method of trial survey	-	n.a.	Following to speed limit.

Source: Interview for transport department, Semey City.

### (3) Safety Improvement

Table 3 summarized the number of accidents occurring on the new bridge from 2008 through 2011. The average number of accidents was 2.5 in the past four years, while it was 3.5 in the 2005 to 2006. It can be said that the number of accidents is low taking into account the increased volume of traffic. According to the questionnaire survey of the ex-post project evaluation, there were many accidents in the winter season. However, the number of the accidents in freezing road conditions was 2 out of 10. So it could not be said risk in the wintertime was high due to this data.

Table 3 Number of Accident on the New Bridge

	2008	2009	2010	2011	Total	Average
Number	2	5	0	3	10	2.5
Injured	2	4	0	4	10	2,5
Death	0	1	0	0	1	0.25

Source: Semey Traffic Police in Semey City

Road safety measures including speed limit had not been taken by the post project evaluation period because the bridge was not handed over to Semey City. After the handover in April 2008, Semey City took safety measures which included snow removal in addition to introduction of speed limits. The speed limit was 60km/h in the summer time (April to October) and 40km/h in the wintertime (November to March). Moreover, drivers' compliance to the speed limit was estimated to have increased because Semey traffic police conduct regular surveillance by patrol cars. This might have contributed to the decrease in the number of accidents including in wintertime even while traffic volume increased.

### 3.1.1.2 Results of Calculations of Internal Rates of Return (IRR)

The financial internal rate of return (FIRR) was not calculated at the time of the ex-post evaluation due to the introduction of a toll free system. Therefore, FIRR was not calculated by this ex-post monitoring study either for the same reason. The economical internal rate of return (EIRR) at the same time as ex-post evaluation is as follows.

EIRR: 21.4%

Expense: Project cost (excluding tax), operation and maintenance cost

Benefit: Reduction in travel time (traffic volume, type of vehicles, GDP per capita)

EIRR was not calculated by this ex-post monitoring study due to the reasons listed below.

- All indicators related to benefits drastically increased, so total benefit also increased.
- The operation and maintenance cost for facilities was sufficiently secured. The possible loss in value to the bridge that could occur cannot be assessed by this study's framework.

As explained above, this project objective has satisfactorily achieved expected results in terms of improvement in traffic volume, reduced travel time, average speed, and traffic safety.

## 3.2 Impact

### 3.2.1 Intended Impacts

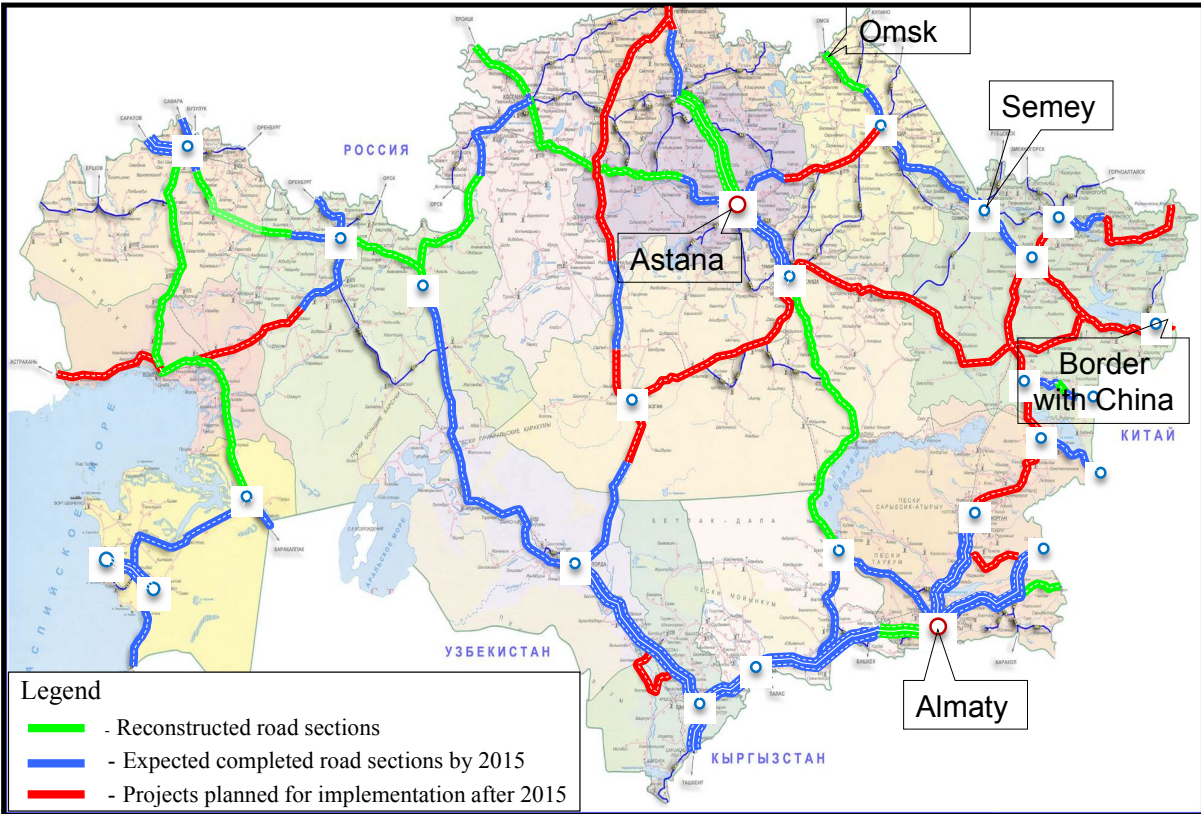
#### 3.2.1.1 Stimulation of local economy

##### (1) Increase in traffic volume over a wide area

Road development has been progressed as shown in Figure 1. According to the Country Index by the World Bank, freight transport volume in the Kazakhstan has increased from 2004 to 2009 at an average rate of 8.7% (Table 4). According to the Ministry of Transportation and Communications, the annual average

daily traffic that passed over this bridge en route on the national highway between Omsk, Russia, and the Chinese border (total distance: 1,060 km Figure 1) decreased from 4,403 vehicles a day in 2005 to 3,000 vehicles a day in 2011. However, this number still represented a significant increase compared to 1993, although the reason for the decrease is unclear. Most probably this is because of the new bridge, even though inter annual data is not available. Without the new bridge, large vehicles in particular cannot use this route, so the impact of the new bridge was confirmed.

Figure 1 Kazakhstan Regional Transportation Development Plan (2011-2014)



Source: Ministry of Transportation and Communications

Table 4 Domestic Cargo Transport Volume in Kazakhstan Unit: Million-ton km

	2004	2005	2006	2007	2008	2009
Domestic cargo transport volume	43,910	47,123	53,816	61,444	63.481	66.254

Source: World Bank, World Country Index

(2)Economic Indicator:

The Kazakhstani economy growth rate recovered to 7.3% in 2010 from the low of 1.2% in 2009 impacted by the Lehman shock in 2008.

Table 5 Economic Growth Rate of Kazakhstan

Unit: %

	2005	2006	2007	2008	2009	2010	2011
Economic growth rate	9.7	10.7	8.9	3.3	1.2	7.3	7.5

Source: World Bank, World Country Index

Industrial output of Semey City has been on a recovering trend after 2010, despite a slight slowdown. Total Investment amount in Semey City was 34.7 billion tenge in 2011. A 51% increase from 2010, of which 16.4 billion was for industrial investment. This project also contributed to the industrial growth, with the increase of the number of large vehicles passing through the city transporting raw materials and products en route to other cities. This could not be achieved by using the pre-existing bridge since heavy trucks are not allowed to pass.

Table 6 Economic Indicators of Semey City

(Industrial output and Investment Amount (total, industry))

Unit: Million tenge

	2005	2006	2007	2008	2009	2010	2011
Industrial Output	33,678	38,185	60,165	78,682	82,553	94,953	109,517
Growth Rate (%)	-	13.4	57.6	30.8	4.9	15.0	15.3
Investment (Total)	13,694	9,832	14,631	19,819	20,942	22,984	34,777
Growth Rate (%)	-	-28.2	48.8	35.5	5.7	9.7	51.3
Investment (Industry)	2,734	4,657	7,057	7,834	12,623	14,295	16,432
Growth Rate (%)	-	70.3	51.5	11.0	61.1	13.2	14.9

Source: Semey City Statistics

Economic indicators and investment amount have tuned to growth though they were impacted by the global economic recession. Although there was a decrease in traffic volume in the wider area, the overall number is expected to still much higher than prior to the project. Therefore, it was confirmed at the time of ex-post evaluation that the project's impact also continued. .

### 3.2.2 Other Impacts

#### 3.2.2.1 Impact on Natural Environment

No negative environmental impact is reported just as in the ex-post evaluation. Drainage water from the access roads was collected and sent to waste water treatment, while water on the bridge drained directly into the Irtysh River. Both the sanitation department of Semey City and the Semey Office of the Ministry of Environment conducted water quality test of the Irtysh River. According to the water quality test conducted in August 2010, it was confirmed that the quality of water met national environmental standards of all the 18 indicators at one water monitoring point 1km downstream of the new bridge. Monitoring points for noise and odour were not set around the new bridge. However, this may not be an issue due to

the fact that there have been no negative reports from local inhabitants.

3.2.2.2 Resettlement and Land Acquisition

The number relocated was 414 households and 7 corporations due to this project. Semey City did not identify the conditions of the relocated habitants and corporations after their relocation. Therefore, no new information was gathered related to the relocated person in this ex-post monitoring survey. Semey City reported that they have not received any claims.

3.2.2.3 Symbol of the Town

The bridge was identified as a new symbol of Semey City. So the bridge was introduced in the brochure of the city and on post cards. Some key holders and paperweights illustrating the bridge were found in the souvenir shops in the city.



3.2.2.4 Tourist Attraction

The number of European tourists visiting the bridge increased as the Asian Highway was developed.

It is observed couples took photographs for wedding ceremonies. So this bridge had been recognized as a tourist attraction.



Photo 2 Tourists Visiting the New Bridge

As mentioned above, the impact of this project continued in terms of increase in traffic volume in the wider area as well as stimulation of the local economy. Furthermore, new developments such as the bridge becoming a symbol of the city and a tourist attraction were newly observed and negative impact on the natural environment and social aspects was not confirmed.

**3.3 Sustainability**

3.3.1 Structural Aspects of Operation and Maintenance

At the time of the appraisal, the executing agency of the project was Semipalatinsk Region Akim Apparat (SOAA), and it was planned that the Project Implementation Unit (PIU) established under SOAA would become the operation and maintenance organization following completion of the project. In May 1997, SOAA was absorbed by East Kazakhstan Region Akim. PIU was also placed under the jurisdiction of East Kazakhstan Region Akim. However, no action was taken to make PIU the operation and maintenance organization after the project completion. Therefore, responsibility and structure of the operation and maintenance of the new bridge was not confirmed at the ex-post evaluation. Hence, recommendation was made to clarify the reason for delay of the handover procedure, to handover the facility and establish the operation and maintenance organization, to secure a sufficient budget and to handover equipment in proper management and usage.



In April 2008, Semey City received assets related to the new bridge and established "Multi purpose utilities enterprise operating Irtysh river suspension bridge" (Hereafter called the Operation and Maintenance Organization" by the instruction of East Kazakhstan Region (No K-86 dated April 15, 2008). PIU of the region was dissolved and handed over all the equipment and the maintenance manual to the Operation and Maintenance Organization. However, the handing over was not organized well according to the interview.

The reasons why the new bridge was transferred to the Semey City were because the bridge did not connect to any regional roads and the East Kazakhstan Region could not allocate budget because of non-existence of a budget code for regional operation.

The current organizational departments of the Operation and Maintenance Organization and the number of staff are summarized as listed below.

• Finance	5
• Personnel	1
• Administration	10
• Suspension Bridge	5
• Existing Bridge	5
• Manufacturing Technology	25
• Engineering	4

The organization tried to recruit highly qualified and skilled personnel as much as possible as shown by the fact that they hired graduates from civil engineering departments of universities into the suspension bridge group. However, it was difficult to hire qualified specialists with enough skill and knowledge, which cannot be acquired in university or specialized education. This is because the new bridge was the only large suspension bridge in the CIS countries at the time of construction. Furthermore, PIU staff, that was trained in the project, were not available for the Operation and Maintenance organization due to the fact that it took some time to hand over duties. Technological skill had not been transferred to the new company staff. As a result, staff members were forced to struggle with operation and maintenance activities from the start.

As the owner of the new bridge became clear the structure for operation and maintenance was also established as the operation and maintenance organization was set up. A number of technical staff was also hired despite a shortage of workers with technological knowledge and skill and progress was made from the time of ex-post project evaluation.

3.3.2 Technical Aspects of Operation and Maintenance

Simple daily maintenance was conducted at the time of ex-post evaluation. Recommendations from the ex-post evaluation were made concerning hand over and use of the manual. Such progress was observed in the ex-post monitoring survey.

Structural inspection was conducted annually, monthly and seasonally (Winter and Spring). Inspection planning also includes summer time and wintertime operation. The manual provided by the project includes type and item of operation and maintenance, operation flow and operation and maintenance structure. The management plan was prepared by using these manuals as indicated in the recommendation of ex-post project evaluation. However, the manuals were not comprehensive enough to cover all the operation and maintenance work as shown by the fact that the manuals lack the criteria of inspection activities, specification of consumables and repair materials. A Russian company prepared the manual related to an expansion joint when they repaired the bridge and that manual was widely used.

According to the enterprise, the number of the staff is enough to conduct current activities; however, there are concerns about their technical level. They have a request to dispatch experts from Japan to conduct training related to operation and maintenance of the suspension bridge. Following were their concerns and issues.

- Skill and knowledge of technical inspection, especially required for a suspension bridge
- Pavement of asphalt and concrete
- Inspection of tension on cables
- Repairing of an expansion joint



Photo 3 Repairing Pavement

Those technical gaps were identified from the beginning of the project. To cope with this, capacity development of the operation and maintenance was conducted in the project. As a result, technical gaps were narrowed after the implementation of the training. Although overall lack of skill was reported in the ex-post project evaluation, details were not identified. During the course of the ex-post monitoring, there was progress in that they identified challenges of technical skills required for sustainable maintenance, however the technical gaps were still not being closed. The reasons identified are as follows. Firstly, technical staff that were trained by the project did not remain in the operation and maintenance organization, corresponding to the handing over of maintenance body was changed from the region to the city and it was time consuming. Secondly, the manual prepared by the project was insufficient.

This lack of technical skills meant that technical staff could not understand comprehensive annual operation and maintenance activities. And it resulted in incomplete preparation of the document for requesting financial budget and it lead a lack of finance capability.

JICA has an ongoing cooperation program for the maintenance of Irtys River Bridge from April 2012. Onsite training is planned to be conducted and the program is expected to solve some of the issues, though it cannot cover all the issues mentioned above.

### 3.3.3 Financial Aspects of Operation and Maintenance

The operation and maintenance company maintains other roads in the city as well. Semey City spent 11.4 million to 31 million tenge (almost equivalent to 7 million to 17 million JPY) annually for the road sector

budgeting from 2009 to 2011. Table 7 summarized the budget record on operation and maintenance of the new bridge among the road related budget.

Table 7 Budget Allocated to New Bridge Operation and Maintenance

Year	Operation Budget (Thousand Tenge)	Japanese Yen equivalent amount (Thousand Yen)
2008	3,345	2,960
2009	3,373	2,192
2010	3,270	2,044
2011	3,457	1,956
2012	3,716	2,022
Total	17,161	11,174
Average	3,432	2,235

Source: Financial Dept. Semey City, Multi-purpose utilities enterprise operating Irtysh river suspension bridge

Operation and maintenance budget for the Irtysh River Bridge was estimated at 1.62 million USD (equivalent to 136.9 million JPY at the exchange rate of the planned year) at the feasibility study. Average operation cost was 2.235 thousand tenge that was less than 2% of the planned amount shown in Table 7. From 2010 to 2012, Semey City’s own budget was 7,700-10,144 million tenge (4,812 million JPY-5,518 million JPY), while road and transport budget was 525-1,008million tenge (328-548 million JPY). Semey City deputy Akimat said that it was not possible to allocate budget for the bridge maintenance based on the current budget structure, although this structure shall be reviewed.

Federal Ministry of Transportation and Communications also recognized the shortage of the budget of Semey City. Thus they requested about 2 million USD budget to the Ministry of Finance before 2010. However, there was no response from them.

3.3.4 Current Status of Operation and Maintenance

The Infrastructure Development Institute of Japan had dispatched a mission for the study of the new bridge in 2010. An inspection was made by the study team consisting of IHI Infrastructure Systems Co., Ltd (Former IHI) and Honshu-Shikoku Bridge Expressway Company Limited (HSBE). Summary of the results of inspection was shown as follows.

- 1) Anchorages, main cables, cable band, hunger ropes, main towers: future rusting was concerned as traces of water flow were observed inside. Some painting was deteriorated.
- 2) Wind shoes, locker bearings: some painting was scratched off. Stiffing girder was de-centered (within the acceptable range)



Photo 4 Unfixed Wire

- 3) Stiffening girder: not inspected.
- 4) Expansion Joint: repaired in 2001, part of sliding face was not cleaned.
- 5) Pavement on the bridge, guardrails: cracks were observed. It must be repaired annually. Some of the fence wire was not fixed.
- 6) Sidewalk: all the snow on the car lanes was accumulated. Removal of the snow was difficult since a park is located under the bridge.
- 7) Approach road: generally in good condition.

Based on the findings of this survey, physical condition of the bridge change was confirmed comparing with the time of ex-post evaluation as follows.

- 1) Foreseen rusting from water flow on the anchorages and main cables, which are important structures of the suspension bridge, will be a concern though not as much of a concern in the current condition. Further, measures shall be taken for deteriorating paint, accumulation of sand and dust on the sliding face.
- 2) Many cracks were observed on the pavement of the bridge. Fence wires of guardrails were not fixed. Further measures should be taken these sections as well.

In 2012, a structural soundness survey for the pre-existing bridge was planned to be conducted for the first time since 1998, based on the fact that the pre-existing bridge was severely aged and was in danger of collapse.

It shall be noted that there was great progress from the time of the ex-post project evaluation in terms of composition, technology and financial aspects of operation and maintenance, given the fact that the operation and maintenance organization was established, technical staff was hired and budget was allocated for maintenance. Furthermore, almost all recommendations were conducted. However, those were not enough to maintain the new bridge in good condition. Fortunately, no significant problem was observed in the soundness of the new bridge confirmed by the visual inspection in 2010, but improvement in the above-mentioned three aspects (structure, technology and finance) is expected.

### **3.4 Others**

In the ex-post project evaluation, it was recommended to take temporary actions in consultation with Semey City, if it would take time to handover. Specifically, temporary actions were to address cost burden for inspection and maintenance borne by the Semey City and introduction of a speed limit for securing safety. Handover was completed and operation and maintenance organization was established at the time of ex-post monitoring and safety measures were taken, hence temporary measures are not required.

## **4. Conclusion, Recommendations and Lessons Learned**

### **4.1 Conclusion**

Effectiveness of the Irtysh River Bridge at the ex-post monitoring was equal or superior to that of the

ex-post evaluation in terms of traffic volume increase, time saving and securing safety. Furthermore, positive impact was continuously observed as the bridge ensured the safe and smooth flow of traffic on a major trunk road and contributed to the stimulation of the local economy.

The issues at the time of ex-post evaluation were that assets were not handed over to the operation and maintenance organization and that no budget allocation was secured. Progress was found as responsibility became clarified among stakeholders and equipment and assets were handed over to the newly established operation and maintenance organization. However they faced new challenges. The manual handed over was not practical enough for them to conduct maintenance activities. Technical skill and knowledge of the staff in the organization was not enough because there was no special education organization for training in Kazakhstan. Furthermore, they could not make budget requests to Semey City, East Kazakhstan Region and the nation due to lack of technical skill and knowledge related to annual maintenance activities. Semey City's budget scale was also too small to allocate required resources for maintenance.

#### **4.2 Recommendations**

(To the operation and maintenance company)

Semey City: Suitable measures shall be selected and negotiated with the national government and regional authorities. It might be handing over the asset and the operation and maintenance organization to the nation. The priority shall be to secure budget source by subsidy.

(To Implementation agency)

JICA was recommended to promote Ministry of Finance and Ministry of Transportation and Communications to sustain the Operation and maintenance structure and acquire the budget. At the same time, it was also recommended to provide possible technical support under the ongoing technical assistance related to operation and maintenance.

#### **4.3 Lessons Learned**

Technical gap on the operation and maintenance aspects was significant as mentioned in the conclusion. This gap was identified from the beginning of the project. The project conducted capacity development component of the operation and maintenance. However, this large gap still exists.

For the implementation of the project, it shall be required to introduce appropriate technologies taking into account what capacity development activities for operation and maintenance could achieve, possibility of technology transfer from neighbouring countries and domestic resources as well as the possibility of entrusting to private companies.

After project commencement, once facilities and equipment hand over to a local authority, the implementation agency shall confirm not only formality of transfer but also actual capacity (personnel, technology and financing, etc.) of the handed-over authority for future smooth implementation. If that capacity is not enough, additional support from a central government or agencies shall be secured.

## Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
<b>1. Project Outputs</b> 1) Construction of new bridge 2) Construction of approach road 3) Improvement of access road 4) Other construction 5) Consulting services	Steel suspension bridge length: 880 m, width: 34.27 m length: 750 m, width: 35.77 m length: 6,900 m (right bank: 3,400 m, left bank: 3,500 m) N.A. Foreign: 439 MM Kazakhstani: 1,026 MM	Steel suspension bridge length: 1,086 m, width: 35 m length: 1,564 m, width: 38.5 m length: 6,837 m (right bank: 3,855 m, left bank: 2,982 m) Additional: parking lot, overpass, left-turn lane, flood plain improvement, etc. Foreign: 370 MM Kazakhstani: 1,258 MM
<b>2. Project Period</b> 1) L/A signing 2) Resident relocation 3) Consultant selection 4) Service provision 5) Bidding 6) Contracting 7) Detailed design 8) Construction 9) Completion and opening of bridge	February 1997 March 1997–February 1998 December 1996–March 1997 April 1997–October 2002 April 1997–December 1997 January 1998 January 1998–June 1998 April 1998–February 2000 October 2001	March 1997 March 1997–May 1998 December 1996–March 1997 April 1997–October 2002 May 1997–December 1997 January 1998 January 1998–June 2002 April 1998–November 2001 November 2000
<b>3. Project Cost</b> Amount paid in Foreign Currency Amount paid in Local Currency Total Japanese ODA Loan Portion Exchange Rate	21,530 million yen 6,791 million yen (4,271 million tenge) 28,321 million yen 21,530 million yen 1 tenge=1.59 yen (as of October 1996)	21,236 million yen 8,728 million yen (10,148 million tenge) 29,964 million yen 21,236 million yen 1 tenge =0.86 yen (average of 1997–2006)