



## 4 Thailand Wat Nakorn-In Bridge and Connecting Road Construction Project (1) (2)

Contributing to alleviation of traffic congestion and smoother east-west transportation by developing the transportation network in the Bangkok metropolitan area

**Loan Amount / Disbursed Amount** 17.226 billion yen / 11.12 billion yen  
**Loan Agreement** September 1995/September 1996  
**Terms & Conditions** 2.7% interest rate, 25 year repayment period (7 year grace period), General untied  
**Final Disbursement Date** July 2004/January 2005  
**Executing Agency** Ministry of Transport (<http://portal.mot.go.th/>) (in Thai)

### Project Objectives

The objective of this project was to alleviate traffic congestion between the eastern and western areas of the Bangkok metropolitan area (at the connection to the Outer Ring Road) and to facilitate north-south traffic through the region along the western bank of the Chao Phraya River by constructing the Wat Nakorn-In Bridge (currently known as the Rama V Bridge) over the Chao Phraya River, the East-West Road (currently known as the Nakorn-In Road), and the North-South Road (currently known as the Ratcha Phruek Road), thereby contribute to the economic development of the western areas of the Bangkok Metropolitan area.

### Effectiveness and Impact

Rating **a**

As planned, the Wat Nakorn-In Bridge, the East-West Road, and the North-South Road were constructed. Actual traffic volume in 2005 during the morning and evening peak periods (total for both directions measured at six locations) achieved 100% of the target. Reasons for significant increase of the traffic volume at some locations are the social and economic development and acceleration of the road usage in the project area due to development and expansion of the road network along the western bank of the Chao Phraya River, which connects to the project's roads. Based on a sample study between two sections on each side of the Chao Phraya River, travel time decreased drastically compared to before the project. Therefore, this project has largely achieved its objectives, and effectiveness is highly satisfactory.

### Relevance

Rating **a**

This project has been highly relevant with Thailand's national policies both at the time of appraisal and at the time of ex-post evaluation. Road network development was a priority issue at the time of appraisal since transportation by road was a primary means of

transportation. The combination of different modes of transportation for mass transit was raised at the time of ex-post evaluation. Nevertheless, the necessity of this project remains high as it connects inside the Bangkok metropolitan area, and functions as a road network along the western bank of the Chao Phraya River, which supplements the outer ring road of Bangkok.

### Efficiency

Rating **b**

Although project costs were lower than planned (72% of planned), project period was much longer than planned (180% of planned period); therefore the evaluation for efficiency is moderate. The main reason of the cost savings was the successful controlling of construction costs through competitive bidding. The reason for delay was primarily a result of the time required for budget allocation for land acquisition.

### Sustainability

Rating **a**

No major problem has been observed for capacity nor the operation and maintenance (O&M) system nor budget allocation for the O&M agency; therefore, sustainability of this project is high.

### Conclusion, Lessons Learned, Recommendation

In light of the above, this project is evaluated to be highly satisfactory. It is desired that traffic volume surveys be conducted periodically and statistical data be recorded in order to continuously evaluate the project as well as to make future road development plans. In terms of traffic safety, it is advised that traffic signals be installed at intersections with high accident rates and that more road signs be installed.

### Third-Party Opinion

Making use of the lessons learned in the first phase, the time for consultant selection and land acquisition was improved during the second phase. On the other hand, there is room for improvement in the contractor selection process. With positive effects in terms of increased traffic volume and shortened travel times, the project is contributing to economic development of the target area.

Name of specialist: Mr. Stephen Olubpdinwa Ogunlana (academia)  
 Doctorate in Architectural Engineering, Loughborough University of Technology.  
 Currently a professor at the Asian Institute of Technology. Specializes in construction, infrastructure management, and PPP.

Comparison of Travel Time on Two Specified Sections Before and After the Project

|                | Route   | Distance | Direction | Travel Time (Minutes) |              |          |
|----------------|---|----------|-----------|-----------------------|--------------|----------|
|                |   |          |           | Morning Peak          | Evening Peak | Off-Peak |
| Before Project | Rathan Thibet Road<br>Phra Nang Klao Bridge         | 17.5 km  | Eastbound | 45                    | 29           | 20       |
|                |   |          | Westbound | 18                    | 23           | 16       |
| After Project  | Nakorn-In Road<br>(East-West Road)<br>Rama V Bridge | 14.2 km  | Eastbound | 14                    | 18           | 11       |
|                |   |          | Westbound | 11                    | 15           | 7.5      |