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A Brief Report on Famous bridges in India

- **New Yamuna Bridge**

1. Basic Information :

The New Yamuna Bridge is a cable-stayed bridge located in Allahabad. The bridge was constructed by the end of 2004 with the aim of minimizing the traffic over the Old Naini Bridge. The bridge runs North-South across the Yamuna river connecting the city of Allahabad to its neighborhood of Naini. The construction was consulted by COWI A/S, a Danish consulting company. Main construction was done by Hyundai and was successfully completed in 2004.

2. Geometry and Location :

- Coordinates -27.1147°N 78.3673°E
- Carries - 4 lanes, pedestrians and bicycles
- Locale - Allahabad, India
- Official name -The New Yamuna Bridge

3. Geometry and Location :

Objective The project objective is to construct a four-lane bridge to replace the existing old two-lane 1 bridge across the River Yamuna connecting the Allahabad District and the Naini District of Allahabad, Uttar Pradesh State, for the purposes of alleviating chronic traffic congestion and allowing the traffic to flow smoothly and at the same time improving the national highway network by connecting National Highway 2 and National Highway 27, thereby helping invigorate the regional economy.

4. Relevance of the Project :

The 8th Five Year Plan (1992–1997) placed emphasis on the development and improvement of infrastructure to support sustainable economic development such as energy, transport, communication and irrigation facilities as a priority objective. In particular, “widening of existing roads,” “strengthening of road pavement” and “construction and rehabilitation of large-scale bridges” were listed among items of higher priority. In the public investment plan of the 8th Five Year Plan, the amount of investment in the transport sector accounted for 12.9% of total public investment, of which the second largest share of 22.9% (3.0% of the total public investment) was allocated for roads, next to that for railway (accounting for 48.6% of the transport sector, or 6.3% of the total public investment). 2 The total road length in India was 2,037,000 km (road density: 0.62 km/km2 , pavement ratio: 49.1%) as of March 1991, of which 34,000 km, or just 1.7%, consisted of national highways. Since most national highways were trunk lines connecting major cities, traffic concentrated on national highways. However, as most sections of national highways were single or two lanes, their capacity was insufficient to meet needs for transport. In addition, decaying bridges and the lack of networks connecting national highways were obstacles to smooth transport. Therefore, it was necessary to widen national highways to four lanes and to construct new or rehabilitate old bridges. The Allahabad and

Naini Districts of the City of Allahabad, the target area of this project, were respectively the administrative and industrial centers of the city. The Yamuna Bridge, the only existing bridge connecting these two districts, served as the lifeline of the city's economic activities and people's lives. As it was located at the junction of National Highway 2 and National Highway 27, the existing bridge (Yamuna Bridge) played a vital role in the road network in UP State. However, this bridge was a highway-railway combined bridge constructed at the end of the 19th century and safety concerns grew as the bridge aged. Moreover, as the peak-hour traffic volume on the bridge far exceeded the transport capacity of two-lane bridges of general roads in India (2,000 PCU1 /hour at maximum), the narrow two-lane Yamuna Bridge was not able to meet the transport needs at that time and was causing chronic traffic congestion. There was also a limitation on the size and weight of vehicles passing over the bridge. For all of these reasons, it was of high priority to construct a new bridge over the River Yamuna and eliminate chronic traffic congestion and enable smooth road transport. Thus, the project plan was considered relevant at the time of appraisal.

5. Project Period :

The project period was scheduled from January 1994 to July 2004 (ten years and seven months), which is four years and four months longer than the planned period from January 1994 to March 2000 (six years three months) or 169% of the planned period. The main causes of delay:

- the delay in consultant tendering procedure, due to the three-stage tendering for supplementary feasibility study, detailed design, detailed design review, and construction management;
- the time required for the review and finalization of the design of the first large-scale cable-stayed bridge in India;
- the delay in the tendering of contractors due to problems in the course of the tendering procedure; and (4) the change of the executing agency from the Ministry of Surface Transport (current Ministry of Shipping, Road Transport and Highways) to the National Highways Authority of India (NHAI) in 1997 in the midst of project implementation, which required time for related procedures.

6. Project Cost :

The project cost was 8,807 million yen (ODA loan portion: 7,515 million yen), 3,097 million yen less than the planned 11,904 million yen (ODA loan portion: 10,037 million yen) 5 or 74% of the planned project cost. In terms of rupee, the actual cost was 3,145 million rupees (1 rupee = 2.80 yen), which is almost equal to the planned 3,217 rupees (1 rupee = 3.70 yen). This difference is a resulted of the difference in the rupee-yen exchange rate at time of planning and ex-post evaluation.

7. Impact on Decrease in the traffic accidents :

It is difficult to accurately analyze the impact of this project on the decrease in traffic accidents by comparing the data before and after the project as there is no data on traffic accidents on Yamuna Bridge (old bridge) before the project nor is there any official record such as accurate figures on traffic accidents on the Naini Bridge (new bridge) after the project. According to the results of the beneficiary survey, 67% of commercial transporters said that the number of traffic accidents decreased after project completion due to the improvement of road infrastructure and reduction in traffic congestion. On the other hand, 29% of commercial transporters said the number of traffic accidents caused by over-speeding has increased. Although an accurate evaluation of the traffic accident reduction effect of the project is difficult due to the lack of data, the results of the beneficiary survey indicate that the project is effective in reducing traffic accident to some extent.

8. Impact on the Revitalizing of local Economy :

In the tourism sector, the number of tourists visiting Allahabad increased 1.7-fold in 5 years from 877. 3 million in FY1999/2000 to 1,492.7 million in FY2003/04 . The number of beds in lodging facilities in the city also increased 2.2-fold in 6 years from 1,615 in 1998 to 3,478 in 2004 . Allahabad, a city situated where the Ganges River and the Yamuna River join, is one of the four major Hindu holy places where many pilgrims visits from all across India. Since the statistical data on the number of tourists and the number of beds in lodging facilities for 2004 and after are not available, it is difficult to analyze the impact of this project on the tourism of the city of Allahabad. At the very least, we can say with certainty that the number of tourists and the number of beds in lodging facilities was already on the increase before the completion of the project. These increases seem be mainly attributable to the geographical and religious conditions of Allahabad as described above.

This project was expected to have a positive impact in promoting industrial development in the Naini District. However, as shown in the number of registered factories in Allahabad, industrial growth has been declining after it factory numbers peaked at 318 in 2002. Activities in the manufacturing industry and industries in the city are slow and the expected effect of this project has not been realized. Among the factors behind the sluggish industrial activities is the insufficient industrial infrastructure such as power supply and the labor union issues peculiar to UP State.

On the other hand, the Naini District, where housing developments have sprung up recently, is expected to develop as a commuter town to service the saturated Allahabad District.

Pictures of the Bridge :