

Padma Multipurpose Bridge Project, Bangladesh

Appointment of Design Consultant

Brief Project Description for Invitation of Expressions of Interest

This note is intended to briefly describe key aspects of the Padma Bridge Project. Full and further particulars are available in various reports that will be provided to consultants who are shortlisted and invited to submit proposals.

The Padma and Ganges rivers divide the Southwest area of the People's Republic of Bangladesh from the rest of the country. Except for the Padma River, the road network provides good country-wide links, including major bridge crossings over the Jamuna (Brahmaputra), Ganges and Meghna rivers. Although the road network of the Southwest area has been improved, links across the Padma River still rely on ferries.

The mighty Padma River is subject to considerable variations in seasonal flow and regularly floods surrounding areas. The river migrates across the flat planes leading to erosion of the river banks. Furthermore, deep scour channels develop and accretion leads to the formation of substantial chars within the river.

A feasibility study has been undertaken that recommends a new bridge able to carry road and future rail is constructed between Mawa and Janjira. Included within the scheme are provisions for utilities including one or more high pressure gas mains, high voltage electricity transmission lines and telecommunications cables. The crossing is located about 40km southwest of the capital, Dhaka.

The preliminary design shows a bridge approximately 5.4km in overall length that is expected to consist of spans of 180m with a superstructure of an extradosed form with a prestressed concrete deck. The bridge will be founded on piles, up to 100m in depth, constructed in deep and soft Holocene alluvial deposits. The Project is located in a seismically active area and the underlying strata are subject to liquefaction. Short span approach viaducts will be required at each end of the bridge which, based on the preliminary design, will be approximately 60m long on the Mawa side and 120m long on the Janjira side.

Extensive river training works are required consisting, in the main, of substantial guide bunds on both river banks. Within the current preliminary design the river training works extend approximately 10km on the Janjira side and approximately 6km on the Mawa side. The project is expected to require extensive dredging and land reclamation. At the crossing location tidal influences are relatively small.

The Project also includes approach roads linking into the existing highway network on both sides, approximately 12km in total, comprising embankments and a number of minor structures. Toll plazas, bridge end rail facilities and service areas will be constructed at both ends of the main bridge. It is also anticipated that future recreational facilities will be provided.

The most critical aspects of the Project are expected to be the deep piled foundations and river training works.

This scheme recommended by the feasibility report was consented to by the Government of Bangladesh on July 17, 2004.

The bridge lies on the route from the southwest of Dhaka to Kolkata in India is expected to form part of the Asian Highway Route No. A-1, intended to connect Asia (Tokyo, Japan) to Europe (Kapikule via Istanbul, Turkey) via Pusan (Korea), Beijing (China) and Delhi (India) under the

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). It is expected to become an important highway for trade goods between Bangladesh and India.

The Project requires land acquisition and the resettlement and the restoration of incomes for the affected population which will be progressed through a Land Acquisition Plan and a Resettlement Action Plan. There are adverse environmental aspects arising from the Project although these can be readily mitigated against through a detailed Environmental Management Plan.

The crossing is expected to take around 5½ years to construct and to cost around \$1.4 billion (July 2006 price).