

### Padma River Bridge, Bangladesh

*Relevant Features:*

- \* Morphology
- \* Field surveys
- \* Hydrology
- \* Effects of climate change
- \* Hydraulics
- \* River impact studies
- \* Design of river training works

**nhc** is currently providing hydrotechnical design services for a bridge over the Padma River in Bangladesh. The Padma River is formed by the confluence of the Ganges and Bramaphutra (also known as the Jamuna) Rivers, and is the world's third largest river (in terms of flood discharge). Within a single flood season, hundreds of families can be affected as the sediment transported by this river creates new land or completely destroys arable, inhabited land.

The 6.15 km bridge, expected to be completed in 2013, will be the largest in Bangladesh, and possibly the longest river bridge in the world. It will connect the southwest region with the capital city of Dhaka and boost business opportunities through the efficient movement of goods between Mongla, a large seaport in the southwest region, and the rest of the country. The bridge will provide a vital link that will cut travel time by several hours and will carry a railway, a major gas pipeline, 500kV power supply cables, and communication infrastructure. Overall, the bridge is expected to raise the GDP by about one percent annually.

As subcontractor to prime consultant, AECOM, **nhc** is the leader of the River Training Works Group for this project. These works are required to keep the river aligned through the bridge opening, and to protect the approach roads, toll booths, and maintenance yards from the erosive effects of one of the world's most unstable rivers. **nhc**'s responsibilities encompass all hydrotechnical issues related to the design of the bridge including morphology, field surveys, hydrology, effects of climate change, hydraulics, river impact studies, and design of river training works. The work involves managing a number of detailed field programs and a performance review of existing river training works for large sand-bed rivers. The latter serves as input for comparing alternative river training works as well as selecting the most appropriate approach.