

Data Collection for Bridge Management System

Technologies Used: GPS, Laser Distance Meter, Google Earth, MS Office Automation, ActiveX, Bridge Management System

The Road Asset Management Division (RAMD) of the National Highway Authority (NHA), Pakistan is in process of developing and implementing a Software-based Bridge Management System (BMS) as a part of the Road Asset Management System (RAMS), in order to improve the maintenance planning and programming of NHA. As a part of the BMS implementation, all 6000 bridges and 20,000 culverts needed to be inventoried and inspected. Data collected comprised of dimensions of different bridge components and culverts, recording of damages through physical inspections, GPS coordinates of structures, digital pictures of structures and their damages. The collected data had to be compatible with SMARTBridge BMS software.

The scope of services included inspections of structures at site and filling in the "Bridge Inventory Data form" for Bridges and "Culverts Inventory Data form" for Culverts. The condition evaluations of bridge and culvert components were carried out and the damages were recorded and maintenance of repair works were requested for them according to the parameter lists. GPS coordinates and digital pictures were also taken for all structures and their damages. A Quality Assurance procedure was established where the data from the site was checked manually by Senior Structural Engineers and then double-checked using software developed by our firm. Software was also developed to map the collected data on Google Earth to view and confirm the data.