

National Highways Development Plan (NHDP) through upgrading and the construction of new roads. Work is scheduled through to 2015, although the aim is to eventually upgrade all National Highways.

Indeed, at the Road Design and Construction Asia conference in Kuala Lumpur, Malaysia (18-19 May 2010/www.roaddesignasia.com), Nirmal Jit Singh,

Director General (Road Development), Ministry of Road Transport and Highways, India, is pencilled in to give an overview of the \$70 billion NHDP project. This will include an update on the project's current status, developments within the several key completed phases and addressing the challenges faced.

The NHDP broadly consists of developing 1,000km of expressways; 8,737km of roads, including 3,846km of National Highways in the north-east; four-laning 20,000km of National Highways and 6,736km on North-South and East-West corridors (Srinagar in the north to Kanyakumari in the south, and Silchar in the east to Porbandar in the west); six-laning 6,500km of the Golden Quadrilateral (the route connecting the four major cities of Mumbai, Delhi, Kolkata and Chennai) and selected National Highways, and widening 20,000km of National Highways to two lanes.

Indeed, on the basis of route numbers there is over 250 National Highways in India and apart from linking the four major cities they also pass through other major cities and towns including Agra, Ahmedabad, Allahabad, Amritsar, Aurangabad, Bagdogra, Bangalore, Bhopal, Bhubaneswar, Chandigarh, Coimbatore, Gorakhpur, Guwahati, Gwalior, Hyderabad, Indore, Jaipur, Jammu, Jamnagar, Jodhpur, Jorhat, Kangra, Kanpur, Kullu, Lucknow, Madurai, Mangalore, Nagpur, Patna, Rajkot, Ranchi, Shimla, Thiruvananthapuram, Tiruchirapalli, Tirupati, Trivandrum, Udaipur, Vadodara, Varanasi, Vijayawada and Vishakhapatnam.

**MSK Projects (India), in joint venture with Chetak Enterprises and BSBK, has a big fleet of Volvo equipment and is carrying out upgrading to four lanes of the Bhopal-Dewas road project in Madhya Pradesh**



Another interesting plan comes from the Ministry of Shipping and Road Transport, which is considering a 'green corridor' highway project solely for farmers with 'no toll' charges that would link rural roads with National Highways, and this is likely to be developed along with the six-lane project under the NHDP.

The National Highways Authority of India (NHAI) is the government body responsible for implementing the NHDP and all its contracts whether for construction or BOT (build, operate, transfer) are awarded through competitive bidding.

However, indications are that private sector participation is increasing, and this is through construction contracts and BOT for some stretches, based on either the lowest annuity or the lowest lump sum payment from the government.

BOT contracts allow tolling on those stretches of the NHDP, and a large component of highways is to be developed through public-private partnerships (PPPs), with several high-traffic stretches already awarded to private companies on a BOT basis. Indeed, late last year, the operation, maintenance and transfer of nine stretches of highways, covering 1,400km, were given by the NHAI to PPP for the first time.

For example, India's Reliance Infrastructure (R-Infra) is planning to launch infrastructure projects worth a total of \$2.14 billion in the next seven months, including four road projects. The first of these agreements is due shortly from the Maharashtra State Road Development (MSRDC) for part of the 13.75km Western Freeway Sea Link Road Project, an ambitious project to connect the suburbs of Mumbai with downtown Mumbai. The first phase of the project, the tolled Rajiv Gandhi Setu (Bandra-Worli Sea Link) already links Bandra in the north with Worli to the south with a cable stayed bridge spanning the Mahim Bay. The next stage of the project is the building of a freeway along the city's western seaboard, linking Worli with Nariman Point. ■

## MB buckets used on motorway

**THE FIRST** motorway connecting the cities of Hyderabad-Bangalore will be approximately 600km long, with three

lanes in both directions.

It will represent an important change in India as the country will

benefit from a fast and greater flow of communication, transportation and commerce networks, which up until now have been carried out mainly by sea.

Italian company MB is supplying crusher buckets to help build the motorway: the BF120.4 bucket will be used to produce the stabilised pavements every 50km.

According to MB a feature of the BF120.4 is that it is the only piece of equipment capable of reducing the size of crushed granite from 20cm to 4cm, thus "making the job easier and more versatile."

The Breganze-based company (currently in the process of obtaining the ISO 14001 certification) says that

its buckets work using the hydraulic system of the excavator they are fitted to, and, "unlike traditional crushers, offer significantly reduced transportation and waste disposal costs, thus allowing inert materials to be recycled."

Guido Azzolin, managing director of MB, said: "We are extremely optimistic on the successful outcome of the motorway that will connect the cities of Hyderabad and Bangalore, both extremely excited to try out our highly technological, Italian-made buckets and to obtain a new communication line that we are sure will be appreciated by the Indian country." ■



MB crusher buckets are working on the new Hyderabad-Bangalore motorway