

Mughal Road: revitalizing an ancient route in Kashmir



The 83.9 km Mughal Road will bring the Poonch and Rajouri regions significantly closer to Srinagar.

The Jammu and Kashmir region has been always been renowned for the captivating beauty of its lofty Himalayan ranges and the breathtaking scenery of its lush green valleys. With a history that dates back to over 4000 years, the Kashmir Valley – by virtue of its location in the sub-continent – had served as a key crossroad for trade and cultural exchanges with Central Asia and Europe.

In 1586, Emperor Akbar had used a mountainous track through the Himalayan mountain peaks from Lahore to enter into the Kashmir valley through the border districts of Rajouri and Poonch. This traditional route - which had been traversed by several Kashmiri kings, traders and travelers since ancient times - soon became abuzz with the armies and caravans of the Mughal rulers who used it extensively to travel to the Kashmir valley.

Almost 427 years after the first Mughal entourage ventured into the valley, this historic route is all set to come alive yet again. The 83.9 km Mughal Road will connect the Kashmir Valley's Shopian district with Bafliaz, a town in the Poonch district of Jammu & Kashmir. On completion, the Mughal Road will bring the Poonch and Rajouri districts closer to Srinagar and will serve as a vital lifeline for the border villages.

Project Background

Keeping in view the growing demand for efficient connectivity and the fact that the Srinagar-Jammu NH1A remains frequently closed to traffic due to landslides, Mughal Road was identified as an alternative communication link between Jammu and Srinagar. The project was launched in 1969 and several attempts were made by the government to execute the work. Finally, the State Government decided to handover the construction of Mughal Road to BRO in 1988-89. But the work was abandoned when insurgency broke-out in the state in 1990.

Finally, in September 2000 it was decided that the Government would execute the project directly and they instructed the J&K Projects Construction Corporation Ltd (JKPCC) to prepare a detailed project report. In 2001, JKPCC hired the services of M/s RITES Limited, an engineering consultancy company, specializing in the field of transport infrastructure, who approached Survey of India (SOI) & National Remote Sensing Agency (NRSA) for Satellite Imagery.

M/s RITES prepared a feasibility report which was submitted to the Government in 2002. The case was taken up with Ministry of Surface Transport (MOST) in 2003 for necessary approvals. Accordingly, the

said 83.90 Km of bituminous road was put to tender in June 2005 under the Prime Minister's reconstruction programme. This led to the award of contract to M/s Hindustan Construction Co. Ltd, Mumbai at Rs 214.40 Cr.

Chronological development of Mughal Road

- 1969:** Notified in 1969 (SRO-106, Date 21-02-1969) under the name of Shopian-Dubjan-Aliabad Road.
- 1977:** Taken up for execution in 1977 and formal Administrative Approval was accorded in 1985.
- 1990:** Single lane track of 30 Km – completed in stretches and work stopped due to militancy.
- 1998:** Mr. I.K.Gujral, the then Prime Minister announced construction of Mughal Road.
- 1999:** Preliminary Feasibility Report prepared by RITES with an estimated cost of Rs.159 crore.
- 2004:** The road was sanctioned under PM's Reconstruction Plan of 2004.
- 2005:** Foundation laid in October 2005.
- 2006:** Work resumed in March 2006. Total length of road envisaged: 83.9 Km (Double lane)
Work on the present Mughal Road with a double lane was allotted to HCC in February 2006. The Project's Administrative Approval was accorded with a project cost of Rs.255 crore. In May 2006, PIL filed by Sh. Fayaz A. Khudsar, Sole Trustee of Bio-Diversity Conservator of India, Krishen Nagar, Delhi.
- 2007:** Supreme Court cleared the PIL on July 27, 2007 and environment clearance was also provided.
- 2008:** Detailed Project Report prepared in March 2008 costing to a tune of Rs.639.85 Crore.

Salient features of the Mughal Road Project:

Scope of Work: Surveying, investigating, designing, planning and execution of Mughal road from Bafliaz (Poonch) to Shopian (Pulwama)

Name of Employer: The Governor of Jammu & Kashmir



A panoramic overview of the Zigs at Bafliaz Sector of the Mughal Road

Contract Value: Rs. 452.77 Crores (Rs 341.04 Crs – Pure work)

Time for Completion: 3 years from the start date for Rs. 214.40 Cr. Further 2 years for additional work of Rs. 126.64 Cr.

Major Specification:

Carriage way width	= 7.00 mtr.
No. of RCC Slab Culverts	= 379 units
No. of box culverts	= 5 units
No. of minor permanent bridges	= 13 units

Challenges Encountered in Project execution

Mathew Marcus - Project Manager noted, "Significant challenges were posed by the limited working season, severity of the winter and also the inaccessible steep hilly gradient along sections of the project route. These scenarios demanded utmost precaution and precision of movement of equipment. Despite

all the odds, the HCC project team displayed tremendous courage, application and out-of-the-box thinking to successfully execute the project."

Survey

The Mughal road alignment passes through a minimum elevation of 5400 ft at Bafliaz and a maximum elevation of 11,500 ft at Pir-Ki-Gali. The road excavation had to be carried out in a virgin cut of the hill as per the alignment finalized / approved by the Client. The road way was accessible for a length of 20 km on the Shopian side and 14 km on the Bafliaz side at the time of award of Contract. The remaining portion of the alignment of approximate 54 km was inaccessible.

The Survey team started working from both Shopian and Bafliaz sides. The survey team could conduct the survey up to 29 km on the



Pictorial representation of Survey conducted in 2 phases of the Mughal Road

Shopian side and up to 28 km on the Bafliaz side in Phase-I. In Phase-II, a special survey team was deployed to complete the survey for the rest of the portion which was very rigorous. One team was stationed at Aliabad Sarai, around 34 km from Shopian and they completed the survey up to Pir-Ki-Gali. In a similar manner, the second team was stationed at Chattapani, around 33 kms from Bafliaz and they completed the survey till Pir-Ki-Gali.

The area between 20 km from Shopian and 11 km from Bafliaz is a complete no man's land. There is no electricity available and also no mobile connectivity. The conditions were very similar to an army operation. The survey teams worked very rigorously in these adverse conditions. They took up the challenge of overcoming the elevation factor, bad weather conditions, remoteness and other security barriers. Despite these challenging conditions, the survey was completed by September 2007.

Excavation Challenges

On the Bafliaz side, the team encountered thick and dense forest from 27 km and the survey team had to proceed 0.5 km ahead of the excavation team for pegging-down the alignment along with the client representatives. Whereas, on the Shopian side, the team encountered vertical cliffs in smaller lengths and deep gorges. At Lalgulam region, which is 31 kms from Shopian, the team faced a huge vertical cliff which posed a challenge for stationing the vertical drills for drilling the hard rock, as there was no space. It became a stumbling block for single lane connectivity in Shopian sector.

The project team came up with a solution of moving excavators from the top of the hill on the opposite side to cross this huge cliff. So the excavators were marched from Sukh Sarai (around 22 kms from Shopian) to Aliabad Sarai with utmost precaution and precision. The movements of excavators were measured precisely as the track was going through a steep gradient of 65-70° to horizontal. After careful marching of one week, the excavators landed at Aliabad Sarai and work was started on the Pir Panjal ranges from km 34.25 to km 40.5. High Speed Diesel and other lubricants were carried to these locations on ponies with a load



At Lalgulam, the team crossed a huge vertical cliff by moving excavators from the top of the hill .

of 40 ltrs each per trip to keep the excavators functioning.

Meanwhile the front heading team at Lalgulam traced out a path on the hill side and reached the top of the vertical cliff and started the excavation from the top. The entire HCC team reached Pir-Ki-Gali on December 3, 2008 to experience the sunset at 6.30pm at 11,500 ft elevation. Around 1.30 lacs cum of hard rock excavation was completed on this particular stretch of 150 mtrs by the end of November 2011.

On the other side of the Mughal Road i.e. on Bafliaz side, the team deployed 2 compressors and around 60 labourers for manual excavation from Pir-Ki-Gali to Bafliaz. This was a critical activity for making a platform for positioning the excavators on top of Pir-Ki-Gali.

After completion of the manual excavation, the excavators were moved in a similar manner to that of the Shopian modus (from the hill



track on the opposite side) and 8 excavators completed the excavation by end of November 2011. The single lane connectivity was made from Bafliaz to Pir-Ki-Gali on November 27, 2011 which was made open to the locals from Poonch & Rajouri regions.

Climatic Challenges

Since the project corridor falls in the Himalayan ranges, the intensity of the cold is quite severe especially in the snow season i.e. from December till April every year. The mercury dips to sub-zero levels of around -10°C to -15°C. The project team stationed at Bafliaz and Shopian camps had to meticulously plan for the work and resources utilization for the next working season.

Innovation

Snow clearance is a routine activity carried out at all the Himalayan projects. Every year, during March and April, the accumulated snow needs



to be cleared over the alignment to restart the work of the Mughal Road. The pavement layers are executed only after evaporation of the moisture in the formation width. Our engineers designed and executed an innovative, low-cost mechanism for snow clearance from the roads. A dumper was fitted with a fabricated snow-clearing device which has many advantages: It can be used on any type of road surface. Its fabrication and operating cost is very low and the snow clearing operation is easy and fast.

Safety & Security concerns:

The Project corridor was known for its high militancy prone activities. Only after the military patrolling was completed and the clearance was given to HCC, could the equipment and the workmen start functioning at their respective locations. This situation continued till the end of 2007. Extended hours of functioning were completely restricted in both the sectors. Round the clock operation could not be implemented due to these peculiar security concerns.

Logistics

Due to the prevailing security scenario, the explosives required for the hard rock excavation were stored in nearby police stations. In Bafliaz, the explosives were stored in Surankote Police station, around 15 kms from Bafliaz towards Poonch. In Shopian sector; a separate police station was constructed at Hirpora by HCC and handed over to the local administration. The blasting operation had to be conducted under the strict supervision of the local police who accompanied the HCC team on regular basis.

Psychological Conditioning

The remoteness of the project site was a major concern. Recruitment of the officers / engineers became a major challenge. Initially, the non-availability of mobile connection in the Shopian sector and non-availability of landline and mobile connection on the Bafliaz side generated loneliness. In order to retain the officers / engineers, HCC had to bear additional expenditure towards keeping the whole team with HCC during the snow season. Labour required for the masonry works was deployed from Doda, Kistwar and Surankote regions. Labour could not be hired from other



Asphalting work in progress at Shopian Sector of the Mughal Road

states because of the elevation factor and acclimatization concerns.

Public impact of Mughal Road

Mughal Road has reduced the distance from Poonch to Srinagar by 67% from 541 kms to 174 kms only i.e. a reduction of 367 kms translating into lessening of 25 hours of travel time. The Poonch and Rajouri districts are now connected to the Kashmir valley and getting benefit from the medical and educational facilities available in the Kashmir valley. In addition, the cost of commodities have also come down. This road boosts commercial avenues in the border districts of Poonch-Rajouri, opens up the tourism potential of the Pir Panjal region and improves the economic condition and life style of the people. The

unique cultural heritage of the nomadic tribes of Pir Panjal region, their traditions, dresses, distinct lifestyle, melodious folklore, shrines, sarais and ruins of Mughal period shall boost the heritage tourism in the region. ♦

Equipment used

Excavators	40 no's
Dozers	6 no's
Graders	4 no's
Dumpers	106 no's
JCB	6 no's
Loaders	2 no's
Vibratory Compactors	5 no's
Static Rollers	4 no's
Tandem Rollers	4 no's
Crushing plant	2 no's
Hot Mix Plant	2 no's
Batching Plant	2 no's
Crane	1 no
Compressors	28 no's
Drilling equipment	30 no's
Bore well for HR drilling	1 no



A paradise to heaven: Scenic beauty



Noori Chamb: An ancient water fall



Pir-Ki-Gali: Ziyarat at Pir-Ki-Gali EL: 3492 mtrs



Aliabad Sarai: Scenery at 34.25 km from Shopian



Sukh Sarai: An ancient building (23km from Shopian)



Ancient trace-cut of Mughal Road still in existence

Did You Know



- The Mughal road was originally known as Nimak road (salt route) before the conquest of Kashmir by Mughals because salt was exported to Kashmir from Western Punjab via this route. It was a pedestal road where only ponies and horses could pass through.
- With the conquest of Kashmir by Emperor Akbar in 1586 AD this road gained in importance because it was the shortest route between Lahore and Srinagar.
- Emperor Akbar has visited Mughal Road twice, Jehangir 13 times, Shah Jahan and Aurangzeb once in their lifetime.
- With the movement of Mughal caravans, the small pedestal path was converted into a wide road which was fit for the movements of elephants, camels, loaded animals, Mughal forces and caravans.
- For the first time the widening work on this road was started in 1587 AD on the eve of the first visit of Emperor Akbar to Kashmir. As per Iqbalnama Akbari, 10000 labourers and masons worked day and night on this road for months together before the visit of Emperor Akbar. However, the main work took place during the period of Emperor Jehangir. He had ordered an Iranian Engineer Ali Mardan Khan for the construction of Mughal road, Sarais, Mosques, Baradaris, Hamams alongside the road for the conveyance of the royal caravans of the Mughal.
- Ali Mardan Khan divided Mughal road into 14 Paraves (halting stations) from Lahore to Srinagar which was a 246 mile long route. But the actual Mughal road originated from Gujarat town which was 70 miles away from Lahore and 176 miles from Srinagar. The main halting stations constructed on this road were Gujarat, Bhimber, Saidpur, Nowshera, Chingus, Rajouri, Thanamandi, Bheramgala, Poshiana, Aliabad Sarai, Hirpur, Shopian, Ramu, and Kanakpura. The interval between each station was varying from 10 to 15 miles keeping in view the geographic conditions of the area. The journey from one station to another was completed in one day.
- Ali Mardan Khan also constructed a variety of traditional structures on these halting stations while the natives constructed their houses around these stations with the help of local Rajas and Mughal Governors. In this manner, small townships on almost all the halting stations had emerged during the Mughal period and this road had become the centre of hectic activity.
- The eight hour journey on the Mughal Road showcases the attractive scenery of Noorichum, Ratachum, Pir Marg, Aliabad, Sukh Sarai valley and Dubjan enroute.
- There are a number of lush green areas, high pasture lands and scenic spots along side the Mughal Road from Pir Pass (12000 feet) to Rattan Pir (8600 feet). On the other hand Dubjan, Sukh Sarai Valley, Aliabad and Pir Marg also fall on this road on the Kashmir side. These virgin hill stations and nature blessed spots shall be a visual treat for the tourists.
- A number of peaks around the road like Tatakuti, Ganga Choti, and Kagalana shall be the point of attraction for the climbers. There are a number of passes which are suitable for trekking purpose.
- The valley of seven lakes like Nandansar, Chandansar, Neelsar and so on located on the upper reaches of Pir Panjal in between 12000 feet to 15000 feet above the sea level is only seven kilometer from Aliabad sarai.
- The unique cultural heritage of the nomadic tribes of Pir Panjal region, their traditions, dresses, distinct lifestyle, melodious folklore, shrines, sarais and ruins of Mughal period shall boost the heritage tourism in the region.