Early Warning System

ADB-59176-001

Bridge Improvement in Uttarakhand

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Quick Facts

Countries	India
Specific Location	Uttarakhand
Financial Institutions	Asian Development Bank (ADB)
Status	Proposed
Bank Risk Rating	A
Borrower	Government of India - Public Works Department of Uttarakhand
Sectors	Infrastructure, Transport
Investment Type(s)	Loan
Investment Amount (USD)	$ 160.00 million

Project Description

According to the Bank’s website, the proposed project aims to improve the bridge capacity to carry higher traffic volume and sustain heavier traffic loading to facilitate future economic activities and improve travel safety, reliability, and efficiency of the road network in Uttarakhand.

It is proposed to reconstruct about 230 Class A loading bridges with climate- and disaster-resilient design in place of the existing single-lane Class B loading bridges to support safe, reliable and efficient travel in all weather conditions.9 The existing Class B loading bridges which are in good condition may be retained as pedestrian/non-motorized vehicle bridges if the dimension at the specific site allows. It is also proposed to retrofit 11 two-lane Class B loading bridges to meet Class A loading standards by strengthening structural components to enhance the safety, increase the lifespan and improve the climate and disaster resilience of these bridges. In addition, slope protection in landslide zones will be stabilized. This will prevent future landslides, ensure safe travel, and maintain the accessibility, connectivity and integrity of the road network in Uttarakhand.

The project will pilot, for the first time in Uttarakhand, the motion sensor system (accelerometer) for landslides to provide early warning by monitoring slope displacement and vibrations on the landslide-prone areas. This will increase the technical capacity of the PWD to respond effectively to disasters and climate changes by enhancing emergency response systems. Also, for the first time in Uttarakhand, the proposed project will test a structural health monitoring system for the longest span bridge in the state to provide continuous or periodic data about the structure's integrity, allowing for timely intervention and maintenance to prevent catastrophic failures.

The state of Uttarakhand was bifurcated from the state of Uttar Pradesh in November 2000. It has an area of 53,483 square kilometers and a population of 11.7 million (in 2025). The state is bounded by People's Republic of China to the north, Nepal to the east, and the Indian states of Uttar Pradesh to the south and Himachal Pradesh to the west and northwest. Almost 90% of its terrain is hilly with the highest point reaching 7,817 meters, and 71% is forest-covered. About 70% of its total population lives in rural areas. The population density is relatively low. The primary economic activities are manufacturing, construction, agricultural and tourism, which together contribute more than 60% to the state's gross domestic product (GDP), and are both heavily dependent on road access.

The State is minimally connected through rail and air links due to the hilly terrain. Road transport is the predominant mode of transport in the State and presently accounts for 80% of Uttarakhand's passenger and freight traffic market. Uttarakhand's road network mostly serves the regions lying below an altitude of 3,000 meters. Between altitudes of 3,000 and 4,500 meters, the region is above the snow line, and the roads are narrow with steep gradients and sharp curves, carrying mostly light vehicles. Above 4,500 meters, the terrain is mountainous, and snow covered, with deep gorges, and steep barren rock slopes. Transport is generally confined to the foot tracks.

Bridges are critical elements of road networks,/connecting separate road segments and overcoming obstacles like rivers or valleys to maintain traffic flow, enhance regional accessibility, and facilitate economic activities. They are essential for the overall functionality, resilience, and economic growth supported by a transportation system. There are 3,661 bridges on public roadways across the state, including 27 Class AA loading bridges, 12 Class 70R loading bridges, 1,037 Class A loading bridges, 1,303 Class B loading bridges, 2 Class Special Vehicle loading bridges, 829 footpath bridges and 451 no loading class bridges.6 The 1,303 Class B loading bridges located on national and state highways have become bottlenecks due to their narrow widths (single lane), weight restrictions and aging conditions. These constraint vehicle speeds, contribute to congestions, and increase safety risk from potential head-on collisions.

The unsafe, inefficient, and unreliable road network, especially at the bridges, is hampering the achievement of the general development targets set by the Government of Uttarakhand. These targets include maintaining and accelerating the present high growth regime, connecting farmers to markets by creating infrastructure, improving access in a hilly state through better

Early Warning System Project Analysis

Environment: A

Involuntary Resettlement: A

Indigenous Peoples: B

Investment Description

- Asian Development Bank (ADB)

The financing amount is $160,000,000, which will be financed on a loan basis by ADB’s ordinary capital resources

Contact Information

No contacts available at the time of disclosure.

ACCESS TO INFORMATION

You can submit an information request for project information at: https://www.adb.org/forms/request-information-form

ADB has a two-stage appeals process for requesters who believe that ADB has denied their request for information in violation of its Access to Information Policy. You can learn more about filing an appeal at: https://www.adb.org/site/disclosure/appeals

ACCOUNTABILITY MECHANISM OF ADB

The Accountability Mechanism is an independent complaint mechanism and fact-finding body for people who believe they are likely to be, or have been, adversely affected by an Asian Development Bank-financed project. If you submit a complaint to the Accountability Mechanism, they may investigate to assess whether the Asian Development Bank is following its own policies and procedures for preventing harm to people or the environment. You can learn more about the Accountability Mechanism and how to file a complaint at: http://www.adb.org/site/accountability-mechanism/main.