

<sup>79</sup> Photo in the public domain published by Nitinwork [https://commons.wikimedia.org/wiki/File:Bhopal\\_road.JPG](https://commons.wikimedia.org/wiki/File:Bhopal_road.JPG)

<sup>80</sup> Ministry of Housing and Urban Affairs. n.d. *Smart Roads (Smart Poles and Street Lights) on PPP Basis – Bhopal*. New Delhi: Smartnet. [https://smartnet.niua.org/sites/default/files/resources/3\\_0.pdf](https://smartnet.niua.org/sites/default/files/resources/3_0.pdf);

Khan, Danish. 2017. "Ericsson, Bharti Infratel Bag Smart City deal for Bhopal City, to deploy 400 smart poles with WiFi service." *The Economic Times*, April 1. <https://telecom.economictimes.indiatimes.com/news/ericsson-bharti-infratel-bag-smart-city-deal-for-bhopal-city-to-deploy-400-smart-poles-with-wifi-service/58161194>;

Bhopal Smart City. n.d. "Bhopal Smart City Development Corporation Limited." ITU. Accessed May 17, 2019. [https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/SiteAssets/Pages/Events/2018/CoESmartcityoct2018/IOT\\_SmartCity/BSCDCL%201-Nov-18.pdf](https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/SiteAssets/Pages/Events/2018/CoESmartcityoct2018/IOT_SmartCity/BSCDCL%201-Nov-18.pdf);

Chowdhury, Shreya Roy. 2019. "As Bhopal is recast as a Smart City, its poor have a question: where's the room for us?" *Scroll*, January 28. Accessed August 1, 2019. <https://scroll.in/article/910434/as-bhopal-is-recast-as-a-smart-city-poor-residents-worry-if-they-will-have-a-place-in-it>;

Smart City Bhopal. 2019. "Smart Pole and Intelligent Street Light Project." Smart Bhopal. Accessed May 17, 2019. <https://smartbhopal.city/smart-pole-and-intelligent-street-light-project>;

Bhopal Smart City Development. *Request for proposal of Intelligent Street Pole: Selection of Bidder for Implementing Smart City Pan City Projects in Bhopal under PPP on*

## 36. Smart Poles and Streetlights, Bhopal, Madhya Pradesh, India



Photo Credit<sup>79</sup>

### Background

Bhopal is the capital city of Madhya Pradesh and has a population of 2.4 million. It is the economic center of the state and reportedly among the greenest cities in India. As it attempts to transition into a more global city, it is currently pursuing a number of smart city projects under India's "Smart Cities Mission." Two such projects, namely smart poles and intelligent streetlights, have been bundled into one PPP project.

### Project Structure

In 2017 the Bhopal Smart City Development Corp. Ltd. (BSCDCL) awarded the project to Swedish telecommunications equipment manufacturer Ericsson and the telecoms tower company Bharti Infratel. The project cost was estimated at INR 6.9 billion (USD 98 million), including INR 3.9 billion (USD 55 million) in capital expenditure and INR 3 billion (USD 43 million) in operational expenditure over 15 years under a Design-Finance-Build-Own-Operate-Transfer (DFBOOT) model. The project as structured would require no financial investment from the city.

The two components of the PPP comprised:

- Smart poles: installation of 400 smart poles across the city, which will function as, inter alia, energy-efficient and remotely controllable LED streetlights, surveillance cameras, environmental sensors, Wi-Fi hotspot providers, and electric vehicle charging points.
- Intelligent Street Lights: installation of 20,000 LED streetlights to replace the conventional sodium and mercury lamps. The new lights offer features such as remote operation and control of the streetlight system, SMS reporting in the event of failures, and detection systems to monitor power theft.

The Intelligent Traffic Management System hub in the Smart City's office will track these smart poles and streetlights, as well as the traffic cameras. The Smart Pole Command Control Center was opened on 8 May 2018. As of December 2018, BSCDCL was further planning to equip 100 smart poles with sensors to track and kill mosquitoes and collect information about mosquito breed, due to the rise in vector-borne ailments like zika, dengue, and Chikungunya.

Funding will be derived from the energy savings realized (a minimum of 35 percent guaranteed savings is required), pole-mounted advertisements, and the 180-km of fiber optic cable laid beneath the poles. The revenue is to be shared between the BSCDCL and the private operator.

### Lessons Learned

In June 2018, a report indicated that there was little coordination between BSCDCL, Bhopal Municipal Corporation (BMC), and the traffic police concerning the installation of smart poles. As a result, too many poles may have been installed. BMC installed poles for the gantry, while traffic police installed poles for signals and CCTV. This highlights the importance of ensuring good coordination among all stakeholders, including diffuse municipal agencies, in implementing a PPP.<sup>80</sup>