

# Highway Maintenance Schemes: Integrating Environmental Sustainability into Value Management

**Muslim Khan<sup>1</sup> and Prof. Raushan Kumar<sup>2</sup>**  
Research Scholar, Department of Civil Engineering<sup>1</sup>  
Assistant Professor, Department of Civil Engineering<sup>2</sup>  
Eklavya University, Damoh, Madhya Pradesh, India

**Abstract:** *Assessing the environmental sustainability of highway projects is crucial for setting goals, evaluating progress, guiding decision-making and demonstrating accountability to the public. Sustainability assessment can occur at multiple scales, from evaluating specific materials and construction practices to analyzing the cumulative impacts of entire highway networks. A variety of sustainability rating systems, metrics, and tools have been developed for measuring and scoring the environmental performance of transportation infrastructure. The importance of environmental sustainability in highway construction and maintenance cannot be overstated. Highways have a massive spatial footprint, with the U.S. Interstate Highway System alone covering nearly 47,000 miles as of 2020 (Federal Highway Administration, 2020). Globally, the length of paved roads exceeds 40 million kilometers and continues to rapidly expand (International Road Federation, 2022). The materials used in roads, such as aggregate, asphalt, concrete, and steel, are typically mined and manufactured through energy and emissions-intensive processes.*

**Keywords:** environmental sustainability of highway projects, setting goals, evaluating progress, guiding decision-making and demonstrating accountability