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An Official Publication of Bureau for Health & Education Status Upliftment
(Constitutionally Entitled as Health-Education Bureau)**

Public Rail Transit systems: A Review of Challenges and Impacts on surroundings

Dr. S. M. Noman Tariq¹, Alma Akasha²

1 Associate Professor, Department of Architecture, AMU, Aligarh, India

2 PG Scholar, Department of Architecture, AMU, Aligarh, India

Email Id: serviceheb@gmail.com


ABSTRACT:

Public rail transit systems have become a pivotal force in reshaping urban environments around the globe, driving significant spatial, economic, and environmental transformations. This paper provides a comprehensive review of the challenges and impacts associated with public rail transit systems, emphasizing their critical role in shaping city infrastructure, stimulating economic development, and promoting environmental sustainability. By synthesizing existing literature, the study conducts an in-depth analysis of the diverse and complex effects that public rail transit systems have had on urban development, with a specific focus on cities in India. It explores how various transit modes, including metro, light rail, and commuter trains, affect their surrounding areas, highlighting the spatial differences in impact across different urban regions.

The paper examines key challenges in the implementation and operation of public rail transit systems, including the integration of these systems into existing urban infrastructure, the management of financial and logistical constraints, and the adaptation to rapidly changing urban demands. It also discusses the parameters and methodologies necessary to evaluate the multifaceted impacts of rail transit systems, considering factors such as ridership patterns, land use changes, economic benefits, and environmental outcomes. Furthermore, the paper addresses the long-term implications of rail transit systems on urban planning and policy, offering insights into the planning, development, and governance models that can optimize their impact.

The findings of this study provide valuable lessons for policymakers, urban planners, and transit authorities, underscoring the importance of public rail transit systems in shaping sustainable and liveable cities in the future. The paper concludes by emphasizing the need for a holistic, multi-dimensional approach to evaluating public rail transit systems to maximize their positive contributions to urban development while addressing the associated challenges.

Keywords: Public Rail Transit System, urban development, environmental sustainability.

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Website: https://heb-nic.in/cass-hom/	
Received on 09/04/2025	
Accepted on 12/04/2025 © HEB All rights reserved	