Cost-Per-Mile Estimation Methodology for Railroads

Poster Session

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Abstract

The railroad industry is expected to see increased demand in the next 30 years. This demand will put a strain on the infrastructure and its ability to provide timely and efficient service. Various technologies are available to increase the capacity of these rail lines, but these efforts will fail to meet the needs in time, and trackage will either need to be added to existing routes, built as new routes, or upgraded to a higher speed classification. Being able to anticipate these costs is a challenge, as few rail miles are built each year and there are numerous variables involved. This poster presentation proposes a methodology to estimate the cost per mile [CPM] for adding, building, upgrading, and maintaining a railroad line in the United States. These estimates take into account the costs for right-of-way, the design and build, materials, communications and signaling, and electrification. In addition to the inputs, this presentation will show a comparison of the CPM estimates with those suggested in other studies and those incurred in actual projects. This CPM estimation methodology can be applied when planning expansion of current or future routes to calculate costs based on top speed, geography, land use, number of tracks, and motive power. This methodology is currently used in investment planning for railroad infrastructure as part of an ongoing NSF-funded project, Netscore21, which models for the first time the interdependency of transportation and energy networks to optimize the selection of fuel and generation technologies while balancing cost, resiliency, and sustainability.

Key Words: Railroad, Cost Estimation, Planning

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