**126-ENGR**

# Microsimulation of Signal Operations near Railroad Crossings

**Abstract:** This research project aims to enhance the efficiency and effectiveness of signal operations near railroad crossings by utilizing VISSIM simulation software. The study specifically targets selected railroad crossing sites within Nashville, Tennessee, to model and analyze the interaction between train movements and vehicular traffic at nearby intersections. By simulating various scenarios, the research evaluates how train passings influence traffic flow, focusing on key performance indicators such as queue lengths, traffic delays, and levels of service at these intersections. The simulations facilitate a detailed examination of the existing traffic signal operations, enabling the identification of performance bottlenecks and inefficiencies. Subsequently, the project explores a range of signal timing and operational improvements designed to mitigate the adverse effects of train passings on road traffic.