

# Highway-Rail Grade Crossing Safety and Prioritizing Model Development

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The United States Department of Transportation (USDOT) provides funding to state DOTs to implement highway-rail grade crossing improvement programs. These programs are suspected to develop particular safety improvement actions in order to decrease the number of accidents at highway-rail grade crossings. The current work is directed to consider various hazard index/accident prediction methodologies, carefully investigate hazard index/accident prediction methods, applied by Tennessee Department of Transportation (TDOT), develop a model to allocate available monetary resources for upgrades of highway-rail grade crossings in the State of Tennessee and maximize the total benefits in terms of accident and severity reduction. Two different mathematical approaches are proposed and a number of numerical experiments are presented to evaluate each approach.