



AUTOMATED CALCULATION OF PASSING SIGHT DISTANCE USING GPS DATA

Report Number: K-TRAN-KSU-03-2

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Introduction

Most of the rural highways in the United States of America are two-lane, two-way highways. In order to ensure smooth flow of traffic, maximum-passing opportunities must be provided on these highways, where the fast moving vehicles can overtake slow moving vehicles. However, due to the geometric characteristics of the highways and cost limitations, passing opportunities cannot be provided throughout the length of the entire highway. Hence there is a need to find the segments of the highway that are not safe for overtaking called “no passing zones.” The accurate placement of no passing zones on two-lane highways is critical to ensure safety of the travelers and also to protect the department of transportations of various states from lawsuits. Literature review shows that current methods used to mark the passing zones and no passing zones are very tedious and time consuming.

Project Objective

The objective of this study was to develop a suitable model for measuring passing sight distance on two-lane, two-way highways using GPS data and identify no passing zones.

Project Description

The model was converted into a computer algorithm and coded in Matlab version 6.5 and requires database toolbox. The algorithm has been tested on 10 highway segments and the results obtained are in agreement with the existing conditions.

Project Results

This model can be used to identify the no passing zones on any highways where the GPS data is available. It is accurate and cost effective when compared to the existing methods. The proposed model (procedure) has been automated, right from the importing the raw GPS data to the transferring of results into the final database.

Report Information

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