

Project Title: Exploring Naturalistic Driving Study (NDS) Data and Roadway Information Database (RID) for emerging applications in traffic safety

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Project Summary: With the advancements of technology and data storage capability, huge amounts of transportation data are now being collected and stored with higher frequencies, which introduced the concept of Big data to the transportation field. Big data, in general, is a terminology that points to structured and unstructured data that are collected at high frequency. By definition, structured data are those having a fixed field within a file. This includes common data stored in relational databases and spreadsheets. Unstructured data are those that cannot be contained into databases and spreadsheets such as, photos, videos, and text messages. Recently, several transportation-related databases were introduced including the Naturalistic Driving Study (NDS) and the Roadway Information Database (RID). The two databases are mainly focusing on the human factors and safety which provide ample amount of data that have the potential for transportation research in the area of traffic safety. While there has been significant research performed using the NDS database, very limited research was conducted with the RID database. In essence, the primary goal of this study is to explore the RID database and investigate the elements in NDS database that can be linked to the RID data. To accomplish this goal, the following specific objectives will be achieved: (1) explore the RID database, (2) identify the necessary elements in RID that can be used for safety research, (3) identify the elements in the NDS database that can be linked to data in the RID, (4) connect the RID and NDS databases for potential safety studies, (5) identify the possible research questions these data can answer, and (6) and identify the required analytical procedures accordingly.