

INSIGHTS INTO THE FIRST THREE DIVERGING DIAMOND INTERCHANGES IN MISSOURI

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ABSTRACT

This thesis aims to further the knowledge about diverging diamond interchanges (DDIs) by exploring several aspects of existing DDIs including performance measures, business surveys, bicycle and pedestrian issues found within a DDI, and compiling relevant existing literature. Several performance measures were examined to analyze current traffic flow levels at the Dorsett Road DDI in Maryland Heights, MO (St. Louis metro area). Access management was researched with an emphasis placed upon changes from previous interchange configurations and how they have affected businesses located in the direct vicinity of the DDI. Businesses located near the first three Missouri DDIs were surveyed for the first time to gauge perceptions of business owners. Results showed positive perceptions overall from business owners. Pedestrians and bicyclists can also be affected by this novel design. Two primary options are available to designers, a barrier protected center walkway or a perimeter based sidewalk. Previously only pedestrian planners had been surveyed, missing practical insights from everyday users not familiar with design intents. The majority of people surveyed preferred a center walkway, with ease of crossing from one side of the intersection to the other being the main reason.