

# Development of Techniques for Analysis of Operation of Major Interchanges

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## ABRIDGMENT

•A great deal of work has been done on the analysis of freeway sections and freeway systems. This work has led to the development of freeway control systems which can result in substantially higher levels of service on freeways. This work has concentrated primarily on sections containing only the normal interchanges in which the operation was unaffected by major external features.

In large urban freeway networks the operation at major interchanges (freeway-free-way interchanges) is becoming an overriding problem. Because of the volumes involved in the movements at major interchanges, the problems associated with many of these interchanges are quite severe. The purpose of the paper is to present some preliminary attempts at developing an analysis technique which can be used to evaluate the operation of major interchanges. The paper identifies the factors which most frequently lead to operational problems at major interchanges. The measures of effectiveness of major interchange performance are also presented.

The paper presents an investigation of two analysis techniques which were tested on the Lodge-Ford and Lodge-Davison freeway-freeway interchanges in Detroit. These were (a) an input-output technique and (b) an aerial photographic technique. Some further thoughts on combining these into a single procedure for the analysis of major interchanges are given.

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