TRB PUBSINDEX HOME

RECENT PUBLICATIONS

ADVANCED SEARCH
New Search
Last Search Results
Search History
Search Help

RSS FEEDS

SUBMIT PUBLICATION

ABOUT TRIS
TRIS Coverage
TRIS Serials
What's New

RESOURCES
Transportation Research Board
TRB Research in Progress
TRT - Transportation Research Thesaurus
Climate Change activities at TRB
International Transport Document Database (ITRD)

CONTACT
Questions or comments?
E-Mail: tris-trb@nas.edu

Home > Search Results > View Record

0 Marked Records: Print | Email | Save | View | Clear

SHARE

Title: TRAFFIC PLANNING MODELS FOR SINGLE-POINT AND TIGHT DIAMOND INTERCHANGES

Accession Number: 00966546

Language: English

Record URL: http://dx.doi.org/10.3141/1847-07

Abstract: Although the single-point interchange (SPI) has been around for approximately three decades, users do not yet have a simplified procedure to evaluate its traffic performance with a similar configuration, the tight diamond interchange (TDI). Several studies have derived general results without decisive conclusions or with partial coverage to assist the users in the selection process. Simulation modeling is used to compare operational traffic performances of isolated SPI and TDI without frontage roads. Modeling was conducted on similar geometries over a wide distribution of traffic flow conditions (101 scenarios). The 101 scenarios were run for both SPI and TDI to derive control delay, stop time, and percent stops from CORSIM. The multivariate statistical comparison of all three variables showed a combined significant difference between the two interchange types, favoring SPI. TDI created more delay, stop time, and percent stops when the left-turn off-ramp flows were very high. Regression models were derived to estimate the three measures for both SPI and TDI. The models are robust and are functions of the highest flows on the cross street and off-ramps. These models are tools that can help planners in the evaluation and selection process of these interchange configurations.

Supplemental Notes: This paper appears in Transportation Research Record No. 1847, Operational Effects of Geometrics 2003.

TRIS Files: HRIS

Pagination: p. 52-57

Authors: Bared, J G
Powell, A
Kaisar, E

Publication Date: 2003

Serial: Transportation Research Record
Issue Number: 1847
Publisher: Transportation Research Board
ISSN: 0361-1981

Corporate Authors: Transportation Research Board
500 Fifth Street, NW
Washington, DC 20001 USA

Availability: Transportation Research Board Business Office
500 Fifth Street, NW
Washington, DC 20001 USA
Order URL: http://trb.org/news/blurb_detail.asp?id=3631
Find a library where document is available
Order URL: http://worldcat.org/isbn/0309085837

ISBN: 0309085837

Features: Figures (9) ; References (9) ; Tables (5)

Index Terms: CORSIM (Traffic simulation model); Highway operations; Multivariate analysis; Performance; Planning; Regression analysis; Single point urban interchanges; Stopped time delay; Stopping; Tight diamond interchanges; Traffic delay; Traffic flow; Traffic models; Traffic simulation; Types of interchanges

Subject Areas: Data and Information Technology; Highways; Operations and Traffic Management; Planning

and Forecasting; I73: Traffic Control

Last Modified: Dec 31 2003 12:00AM

More Articles from this Serial Issue:

- COMPARISON OF OPERATIONS OF SINGLE-POINT AND TIGHT URBAN DIAMOND INTERCHANGES
- COMPARISON OF THE NEW W-INTERCHANGE WITH CONVENTIONAL INTERCHANGES
- DETERMINATION OF STORAGE LENGTHS OF LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS USING M/G2/1 QUEUING
- DEVELOPMENT OF DESIGN VEHICLES FOR HANG-UP PROBLEM
- EFFECTS ON ROAD SAFETY OF CONVERTING INTERSECTIONS TO ROUNDABOUTS: REVIEW OF EVIDENCE FROM NON-U.S. STUDIES
- OPTIMAL LOCATION OF U-TURN MEDIAN OPENINGS ON ROADWAYS
- SPEED DIFFERENTIAL AS A MEASURE TO EVALUATE THE NEED FOR RIGHT-TURN DECELERATION LANES AT UNSIGNALIZED INTERSECTIONS