



## Florida Department of Transportation Research

### Before and After Safety Study of Roadways Where New Medians Have Been Added

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In this project, Florida International University researchers had a primary goal of evaluating the safety impact of converting two-way left-turn lanes (TWLTLs) to raised medians. On the face of it, such a conversion would have an obvious, positive effect on safety; however, configuration changes on one section of a roadway can have an unexpected effect on adjacent sections. In addition, the presence of medians changes how people access local businesses and how businesses receive and send out shipments. Therefore, the researchers evaluated a number of effects of conversion to gain a larger picture of its impact.

To address the primary objective, the researchers first identified locations where adequate crash and construction information were available. Police reports of all crashes before and after median conversion at the 18 selected locations were reviewed to correct miscoded crash types and obtain additional information. The safety performance of locations varied in terms of crash type and crash severity. Overall, results showed a 30.3 percent reduction in the total crash rate after median conversion. Median conversion was effective in reducing several types of crashes. Researchers also identified three locations that performed poorly, but close examination revealed that most post-conversion crashes could not be attributed directly to raised medians.

Several median and roadway design features were evaluated. For example, compared to four-lane facilities, crash rates at median openings on six-lane facilities were consistently higher. Nevertheless, conversion resulted in a greater overall safety benefit for six-lane facilities compared to four-lane facilities. Specific safety concerns for raised medians examined included vehicles directly hitting the median curb, median crossover crashes, and pedestrian crashes. Of over 2,400 post-conversion crashes at the 18 study locations, fewer than 2 percent involved any one of the specific safety concerns.



*Compared to two-way-left-turn lanes, medians have many safety benefits, especially on multilane roads.*

Because Florida Department of Transportation (FDOT) practice now requires that locally affected businesses and residents be informed and given a chance to participate in project decisions, the researchers conducted interviews with businesses on ten recently converted roadways to document their experiences and their involvement in the public information process. A total of 151 businesses participated in on-site interviews. Though most responding businesses preferred TWLTLs to raised medians because of better access and easier truck deliveries, two-thirds of the businesses recognized that raised medians were safer than TWLTLs. Just under one-third of the businesses indicated that they were informed of public hearings on the raised median construction projects, and of these, fewer than under one-half indicated that they attended at least one public hearing.

This study confirmed the safety enhancement that results from converting two-way left-turn lanes into raised medians. It also revealed additional design considerations that should be implemented with a conversion. Information from business owners will assist transportation planners with outreach and engaging potentially affected businesses in the planning process.

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For more information, visit <http://www.dot.state.fl.us/research-center>