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The Effect of Road Diets on Safety, Congestion and Cut-Through Traffic



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Issue

Every year, more than 200 people are killed in Los Angeles while walking, bicycling, or driving. In 2015, in response to this ongoing crisis, Mayor Eric Garcetti issued an executive directive stating that fatalities are not a tolerable byproduct of transportation. As part of this directive, the mayor launched the citywide Vision Zero initiative, which set a goal to eliminate traffic fatalities by 2025.

The Los Angeles Department of Transportation (LADOT) oversees the planning, design, construction, and maintenance of the city's transportation system. One key tool in LADOT's traffic safety toolkit is the road diet. A road diet is a reconfiguration of lanes that removes vehicle travel lanes and adds a center left-turn lane as well as bicycle, transit, and/or pedestrian infrastructure. Its goal is to improve traffic safety and promote multimodal travel, such as walking, bicycling, or transit. The U.S. Department of Transportation calls road diets "proven safety countermeasures" because they have demonstrated effectiveness at reducing collisions when studied over the past decades.

Unfortunately, road diets often face opposition during the implementation phase. Some fear increases in traffic congestion and in neighborhood cut-through traffic, while others doubt that road diets will improve traffic safety outcomes. Is this pushback warranted? This project sets out to answer these questions in the context of Los Angeles, a notoriously sprawling and automobile-centric cityscape.

Study Approach

To determine the efficacy of road diets, this project uses two streets in Northeast Los Angeles as test cases. Fletcher Drive received a road diet in 2016, as LADOT converted it from a four-lane road to a three-lane road with bicycle lanes and a center left-turn lane (Figure 1). LADOT considered implementing a similar road diet on the nearby Verdugo Road, but ultimately decided not to.

Because the two streets have similar physical characteristics and are part of the same neighborhood, they make an effective test case. This research analyzes the changes in traffic safety, traffic congestion, and cut-through traffic on both roadways. To the extent that outcomes change on Fletcher Drive after the implementation of the road diet but do not change on Verdugo Road, the researcher has reason to suspect that the road diet is the cause of the change.

Research Findings

- Analysis shows no evidence that the road diet caused unacceptable traffic conditions. Congestion levels remained within an acceptable level of service after the implementation of a road diet on Fletcher Drive.
- The road diet did not cause significant neighborhood cut-through traffic. The volume of cut-through traffic on Fletcher Drive increased after the road diet, but only by 2%.

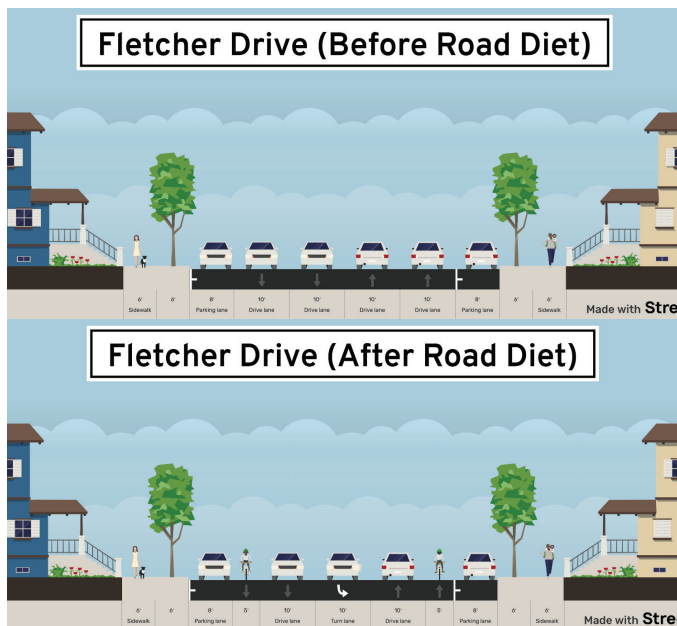


Figure 1. An illustration of the Fletcher Road road diet where two vehicular lanes are replaced with two bicycle lanes and a center left-turn lane.

Conclusions

- There is some evidence that the road diet improved traffic safety outcomes. Traffic safety outcomes improved on both Fletcher Drive and Verdugo Road in the study period, but the crash rate per vehicle mile traveled improved to a greater degree on Fletcher Drive than on Verdugo Road.
- The literature review shows some evidence that road diets are an effective safety countermeasure and that in most scenarios they do not cause unacceptable increases in traffic congestion. The existing body of literature on neighborhood cut-through traffic is much less developed.

- Based on the findings of the analysis and review of existing literature, this project recommends that LADOT identify additional opportunities to both research and implement road diets.
- To advance the understanding of road diets in Los Angeles, LADOT should target streets with excess capacity, streets with a high number of severe crashes due to speeding or aggressive driving, and streets with high volumes of multimodal traffic as priority streets for road diets. Such contexts are likely to offer clearer insights and more robust analysis opportunities.
- Given the limited findings of the research, LADOT may wish to consider road diet pilot projects that can be tested out, studied, and modified if they do not achieve their stated goals or have unintended consequences.
- Lastly, future research should examine additional features of road diets, such as their effects on multimodal traffic volumes, air and noise pollution, and vehicle speed.



Graveline B. (2022). A Tale of Two City Streets: Evaluating the Safety, Congestion, and Cut-Through Effects of Road Diets (Master’s capstone, UCLA). Retrieved from: <https://escholarship.org/uc/item/5949q7vf>.