

Case Studies

Grand Rapids, Michigan – Division Street

LIVABILITY IMPROVES AS NUMBER OF LANES DECREASES

OBJECTIVE

- Improve business environment, commercial activity, and sales
- Increase parking

FEATURES

- Trial basis Road Diet
- Solicited public feedback
- Commercial district with closely spaced traffic signals

RESULTS

- Slower speeds
- Improved livability
- Increased travel times

LIVABILITY Tying the quality and the location of transportation facilities to opportunities such as access to good jobs, affordable housing, quality schools and safer streets.



Division Street has on-street parking and signals at every intersection through downtown.

BACKGROUND

The City of Grand Rapids has taken a holistic view of Road Diet implementations by identifying all 4-lane facilities within its jurisdiction, and then recording and tracking traffic volumes, corridor use, and the overall operation under existing conditions. The city recognizes the safety benefits of Road Diets and is aware of a roadway reconfiguration's potential effect on traffic operations. They also recognize that Road Diets can bring a higher quality of life for users and can encourage commercial activity and sales.

This approach led the City of Grand Rapids to install a Road Diet on Division Street, from I-196 to Wealthy Street. The roadway's cross section changed from four and five vehicle lanes to three lanes and a mixture of dedicated bicycle lanes and shared lanes. Although on-street parking already existed prior to the Road Diet, the reconfiguration allowed for additional parking spots.



15,000 vehicles per day

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PUBLIC INVOLVEMENT

The city conducted two public meetings before this Road Diet was implemented to gain public support and to educate those who use the route. During these meetings, officials learned that citizens wanted the opportunity to try the Road Diet for a trial period and reconvene before implementing permanently.

The city posted signs along the corridor to solicit feedback on the Road Diet project



RESULTS

After the Division Street Road Diet installation, the City of Grand Rapids reported that businesses along the corridor are generally happy with the project because of the perceived improvement in the quality of life attributes and livability of the community. A few residential facilities along Division Street that were previously unrented for 2 years have been rented after the Road Diet brought improved bicycle accessibility. The owner of those housing facilities believes that the bicycle enthusiasts who want to live along the corridor and bike to work have contributed to an overall increase in economic activity in the area.

One lesson the city learned from this project was the need to carefully evaluate the potential effects Road Diets could have on the reliability of transit schedules. Before installation, Division Street served as a local transit route. However, the bus company decided to relocate the route to another corridor after the Road Diet because of increased travel times.

Based on positive public feedback, the City of Grand Rapids ultimately chose to retain the Road Diet permanently. While the Road Diet project produced many positive outcomes, the project resulted in some negative aspects as well. The benefits and trade-offs are summarized in the following table.¹

Positive Outcomes	Trade-offs
Increased parking	Increased delay
Decreased vehicle speeds (-1 to -4 mph)	Longer queues (i.e. Northbound increased from 81 feet before to 180 feet after in the PM)
Improved bicycle facilities (bike lanes/shared lanes)	Longer travel times (average increase of 19 to 52 seconds through corridor)
Reduction in head-on left turn (-38%)*, angle (-17%), and sideswipe crashes (-20%)	Rear-end crashes nearly tripled after installation.
Increased pedestrian/bicycle flow (+13% PM, +57% off-peak, and -14% AM)	Increased emissions (+19.8% AM, +1.1% off-peak, and -5.3% PM)
Decreased volumes (-18% to -29% north of Wealthy Street)	Diversion from the corridor

* Calculated from data in the referenced Report (eight crashes before to five crashes after); this percentage varies from the percentage published in the Report table.

¹ City of Grand Rapids, Michigan, "Revision Division Road Diet Traffic Impact Study: Final Report," February 2013.

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Real-World Carbon Dioxide Impacts of Traffic Congestion

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https://doi.org/10.3141/2058-20

Abstract References Cited by PDF

Abstract

Transportation plays a significant role in carbon dioxide (CO₂) emissions, accounting for approximately a third of the U.S. inventory. To reduce CO₂ emissions in the future, transportation policy makers are planning on making vehicles more efficient and increasing the use of carbon-neutral alternative fuels. In addition, CO₂ emissions can be lowered by improving traffic operations, specifically through the reduction of traffic congestion. Traffic congestion and its impact on CO₂ emissions were examined by using detailed energy and emission models, and they were linked to real-world driving patterns and traffic conditions. With typical traffic conditions in Southern California as an example, it was found that CO₂ emissions could be reduced by up to almost 20% through three different strategies: congestion mitigation strategies that reduce severe congestion, allowing traffic to flow at better speeds; speed management techniques that reduce excessively high free-flow speeds to more moderate conditions; and shock wave suppression techniques that eliminate the acceleration and deceleration events associated with the stop-and-go traffic that exists during congested conditions.

Transportation Research Record: Journal of the Transportation Research Board



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This study states that in So Cal (used as an example) CO₂ emissions could be cut by 20% thru three mitigation strategies. A road diet causes the exact opposite of 2 of the 3 desired outcomes.

I can't find this study online, it can be downloaded from TRB for \$25.