CSG SOUTH

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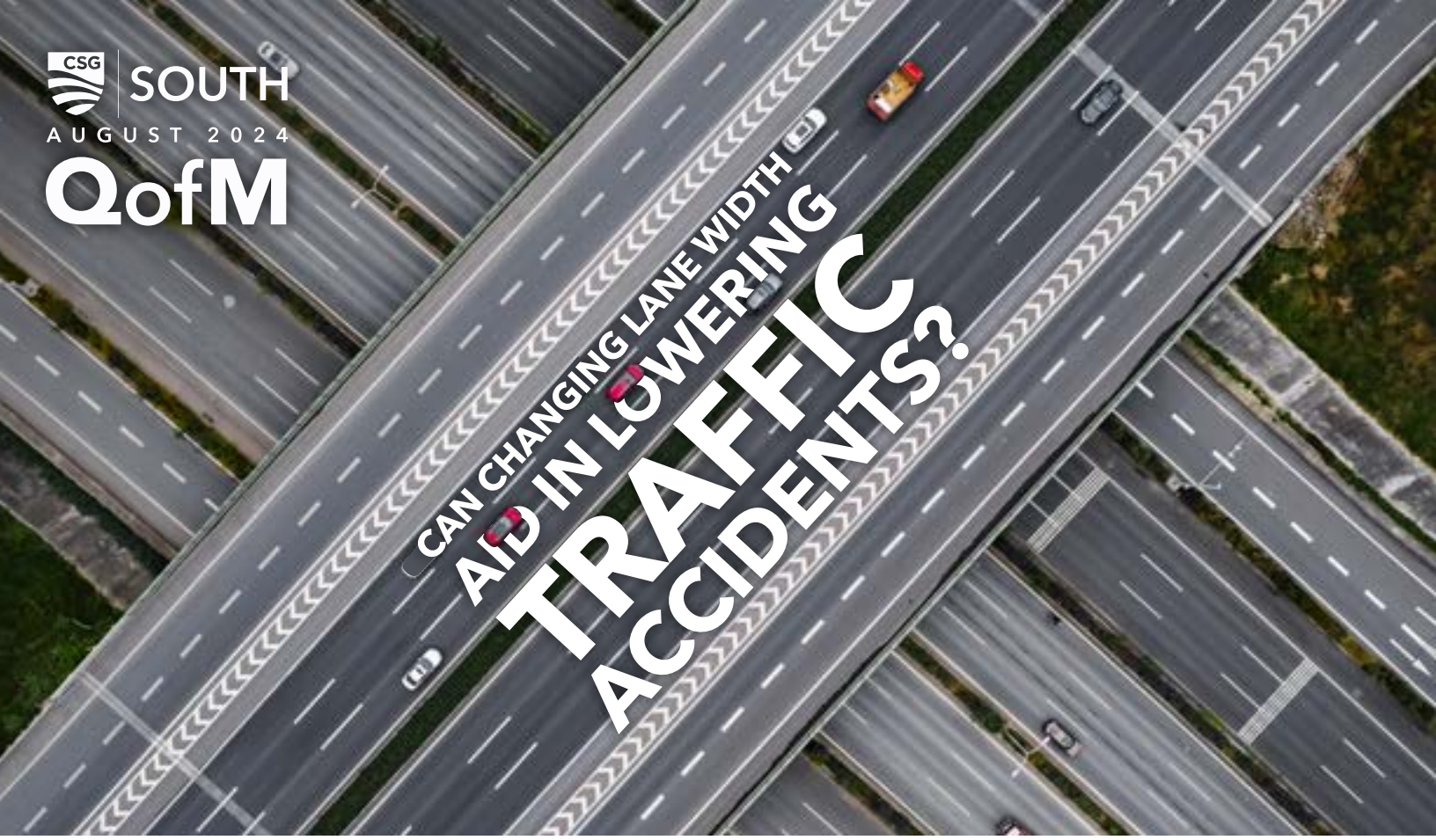

CAN CHANGING LANE WIDTH AID IN LOWERING TRAFFIC ACCIDENTS?

A statistical projection of traffic fatalities for 2023 shows an estimated 40,990 people died in motor vehicle traffic crashes, a decrease of about 3.6 percent compared to 42,514 deaths reported to have occurred in 2022.[1]

Despite this decrease, traffic fatalities remain a prevalent issue in all states. A study by the Johns Hopkins Bloomberg School of Public Health explored the feasibility and safety implications of narrowing vehicle lanes as a cost-effective way to improve traffic safety and sidewalk/bike lane facilities. Analyzing data from 1,117 street sections across seven cities, the study found that narrower lanes were associated with fewer crashes in 30-35 mph speed zones.[2] The study highlights the potential benefits of lane width reduction projects, particularly in urban areas with lower speeds and traffic volumes. The research from the Johns Hopkins study also revealed that current state Department of Transportation (DOT) practices tend to follow conventional design standards with limited use of context-sensitive approaches from the American Association of State Highway and Transportation Officials "Policy on Geometric Design of Highways and Streets" manual. This manual is what most states use in the planning and construction of their roads and highways. Interviews with state DOT officials from the Johns Hopkins study identified challenges in implementing lane width reductions. They suggested innovative solutions, such as adopting context-sensitive design guidelines and rethinking lane width standards. Key findings include the lack of increased crash risks for narrow lanes, the higher crash rates for 12-foot lanes compared to 9 or 10-foot lanes,

and the potential safety improvements in 20-35 mph zones.[3] Recommendations emphasize the need for an integrated approach to street design, considering all context cues and design elements to enhance safety for all road users.

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A success story in the Southern states is Florida's modified urban arterial travel lane width in low-speed areas with its Florida Design Manual. This system defines target speeds for different road contexts and sets lane widths, ensuring that travel lanes align with safety, mobility, and efficiency goals. The Florida Design Manual specifies that travel lanes in urban contexts with speeds of 25–35 mph should be 10 feet wide, while those in rural areas should be 11 feet wide.

FDOT also uses lane repurposing, or road diets, to reallocate space from travel lanes to other uses like bus lanes, wider sidewalks, bike lanes, and more. This approach often reduces lane widths to accommodate other travel modes and improves roadway safety and functionality. Additionally, FDOT launched Speed Management Pilot Projects in 2019 to establish appropriate design speeds for road contexts through various redesigns and traffic-calming measures.

Critical points from FDOT's guidelines include:

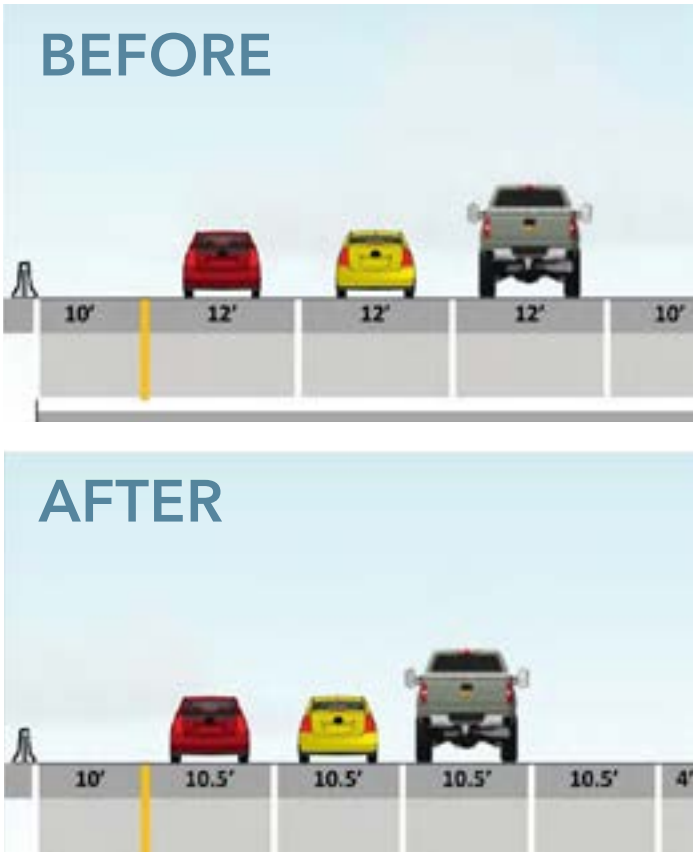
- 11-foot travel lanes for urban areas with 25–45 mph speeds.
- 10-foot lanes for very low-speed urban roads (≤ 35 mph).
- A context classification system to determine appropriate design speeds and lane widths.
- Lane repurposing for enhanced multi-modal travel options.
- Speed management projects to align design speeds with target speeds for safer roadways.[4]

However, this approach also comes with various challenges and considerations. The State Smart Transportation Initiative, a research organization out of the University of Wisconsin-Madison, studied the potential obstacles for implementing these narrower lanes.[5] Below, we explore the pros and cons of lane width reduction projects to provide a comprehensive understanding of their impact.

PROS

1. Safety Improvements:
   - Lower Traffic Speeds: Narrower lanes can help reduce vehicle speeds, which enhances road safety.
   - Increase in Bike and Pedestrian Use: Allocating space saved from narrower lanes to bike lanes or sidewalks promotes non-vehicular transportation.
2. Cost Efficiency:
   - Reduced Construction and Maintenance Costs: Narrower lanes require less construction material and less maintenance area, lowering overall expenses.

3. Enhanced Urban Road Functionality:
   - Flexibility in Road Design: The space gained from narrower lanes can be used for other purposes, such as buffered bike lanes, bus lanes, or broader sidewalks, improving overall urban road functionality.



4. Environmental and Property Impact:
   - Lower Impact on Environment and Property: Narrower lanes may reduce the need for extensive land acquisition and maximize and minimize environmental disruption during road construction or expansion projects.

CONS

1. Design and Approval Challenges:
   - Onerous Approval Processes: The process for obtaining design exceptions can be cumbersome, with some states needing more specific criteria and others requiring extensive reviews based on multiple factors.
2. Legal Concerns:
   - Increased Liability Risks: Designers may face increased liability if their lane width decisions do not align with AASHTO's Green Book standards, a benchmark for reducing tort-related lawsuits. AASHTO's Green Book is required only on the National Highway System but many road designers use it to mitigate legal liability.[6]
3. Winter Maintenance and Parking:
   - Difficulty in Snow Removal: In regions with heavy snowfall, wider lanes facilitate easier snow removal and safer driving conditions.
   - Parking and Bicycle Safety: Wider lanes provide additional space between moving vehicles and parked cars or bicycles, reducing the risk of collisions.

ADDITIONAL CONSIDERATIONS

- Experimentation with Lane Markings: Road Designers could explore the effects of narrower lane markings while preserving overall road width to test safety impacts.
- Designating Freight and Transit Corridors: Planners may need to carefully designate specific routes for freight and transit to limit the impact on local roads.
- Collaboration with Emergency Services: Dialogue with local emergency responders could lead to practical solutions such as revised fire codes, new building standards, or smaller emergency vehicles.

In conclusion, while the estimated 3.6 percent decrease in traffic fatalities in 2023 is a positive development, traffic safety remains a critical concern. The Johns Hopkins Bloomberg School

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of Public Health study provides compelling evidence that narrower lanes in urban areas with lower speed limits can reduce crash rates and improve overall safety. However, adopting narrower lanes faces challenges, including legal concerns, design approval processes, and the need to accommodate larger vehicles and emergency services. Successful examples, such as Florida's context-sensitive design guidelines and lane repurposing initiatives, demonstrate the potential benefits of integrating narrower lane widths into urban planning. An integrated approach to street design that considers all context cues and involves collaboration with local stakeholders is essential to maximize safety and functionality. This approach can lead to more effective, safer, and more efficient roadways catering to all users' needs.

BEFORE

AFTER

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