MDOT Puts STEP Countermeasures into Context

Maryland

KEY ELEMENTS:

Context Specific Recommendations

Integrating STEP Countermeasures

The "Context Driven: Access & Mobility For All Users" guide categorizes Maryland's transportation network into six distinct context zones with corresponding pedestrian safety countermeasures.

INTRODUCTION

The Maryland Department of Transportation (MDOT) State Highway Administration (SHA) released the "Context Driven: Access & Mobility For All Users" planning and design resource in 2019 to provide practitioners with guidelines for creating safe, accessible, and effective multi-modal transportation systems. The Context Driven guide justifies its approach by describing the State's 46 percent increase in pedestrian fatalities from 2009 through 2018, the relationship between roadway speed and pedestrian crash severity, and the need to address safety through innovation.

CONTEXT ZONES

The MDOT guide describes six new context zones and how each relates to multimodal travel, especially pedestrians. Each context zone is a classification representing factors such as transportation infrastructure, land-use, and population density within a geographic area. The context categories were based, in part, on guidance from sources like the AASHTO Green Book (7th Edition), the Institute for Transportation Engineers, and the Florida Department of Transportation. The six context categories include from highest to lowest density: Urban Core, Urban Center, Traditional Town Center, Suburban Activity Center, Suburban, and Rural.

DEVELOPING THE CONTEXT ZONES

Instead of applying existing national context zone guidance, MDOT tailored its classification system to fit Maryland's specific community and land use characteristics. MDOT used Short Trip Opportunity Area (STOA) assessments that were developed as part of the 2040 Maryland Transportation Plan to define each context zone classification. STOAs are locations where a short non-motorized trip—such as walking—is likely to occur based on factors like population, employment, transit, schools, and zero-car households.

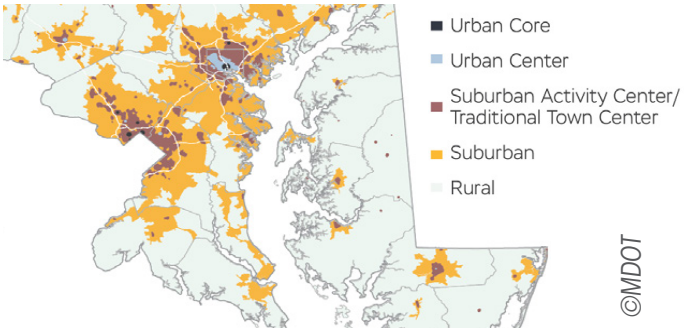

Figure 1. Graphic. Defining context zones.

U.S. Department of Transportation
Federal Highway Administration

Safe Roads for a Safer Future
Investment in roadway safety saves lives

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When developing the six context zones, MDOT distinguished between access and mobility. Access is defined as how many places a person could travel to in a given amount of time, compared to mobility as how far a person could travel in a given amount of time. MDOT discovered that the presence of short trips (such as walking) directly related to the need for access, and also that over 70 percent of national fatal pedestrian crashes are in access-oriented areas.

APPLYING THE GUIDE'S CONTEXT ZONES

The guide's six context zones each include location-specific example graphics and countermeasures in a report-card format. These context zone overviews display typical characteristics, real-world Maryland examples, proven treatments, focus areas that provide the greatest benefit (such as safety, connectivity, and traffic operations), and the balance between access and mobility.

For example, the Suburban Activity Center zone equally balances short-trip non-motorized access with vehicle traffic mobility, while the Urban Center context zone heavily prioritizes access (figure 2).

> "Addressing pedestrian safety through the lens of context provides a means to proactively implement treatments in areas that have traditionally shown a higher propensity for pedestrian crashes. This allows us to get out ahead of the problems, rather than solely reacting to issues as they arise."
>
> –Jeff Davis, MDOT SHA Design Engineer Cost Estimator

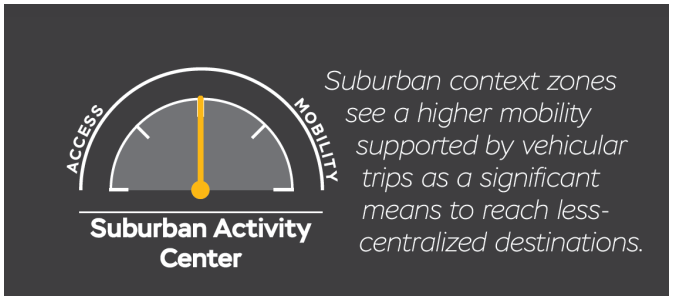

Figure 2. Graphic. Balancing access and mobility within Suburban Activity Zones.

This balance depiction helps practitioners better understand road users, their needs within each context zone, and appropriate countermeasures.

The guide further illustrates how the FHWA Safe Transportation for Every Pedestrian (STEP) countermeasures can be integrated into each design context. For example, the Suburban Activity Center zone shows how the Pedestrian Hybrid Beacon (PHB) can improve mid-block crossings along busy arterials (figure 3). The guide also references the STEP countermeasure tech sheets and other FHWA resources for designing multi-modal transportation systems.

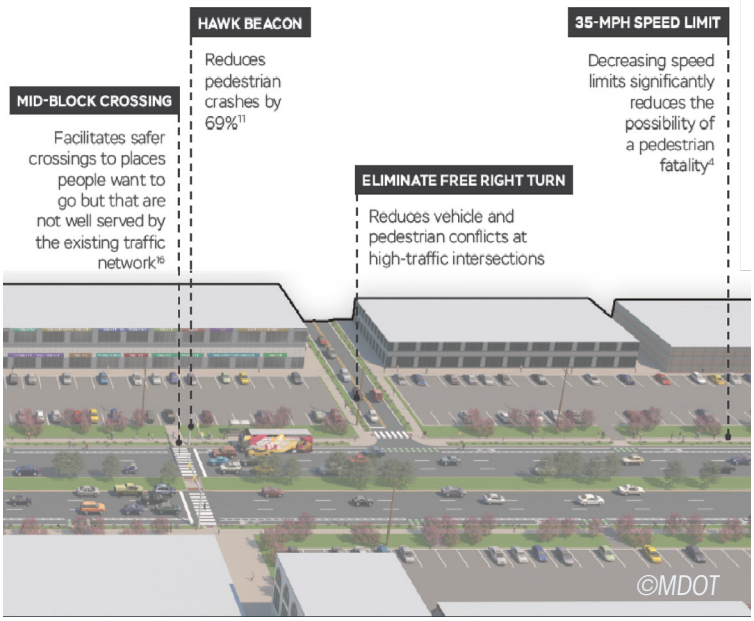

Figure 3. Graphic. Excerpt from Suburban Activity Center context zone illustration.

References

[1]Maryland Department of Transportation. (2019). Context Driven Access & Mobility for All Users. https://www.roads.maryland.gov/OC/Context_Driven-Access-and-Mobility-For-All-Users.pdf. Last accessed May 4, 2020.