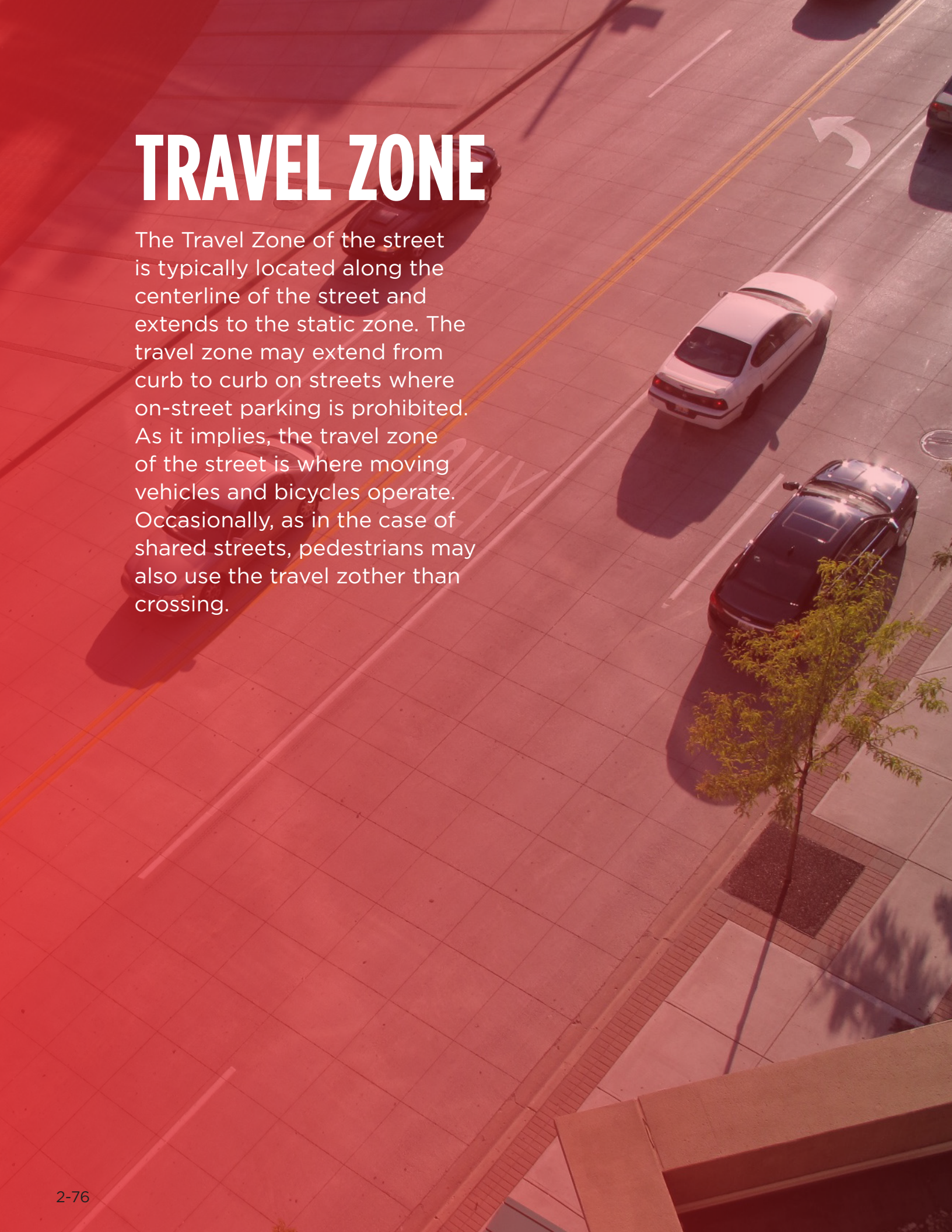
TRAVEL ZONE

The Travel Zone of the street is typically located along the centerline of the street and extends to the static zone. The travel zone may extend from curb to curb on streets where on-street parking is prohibited. As it implies, the travel zone of the street is where moving vehicles and bicycles operate. Occasionally, as in the case of shared streets, pedestrians may also use the travel zother than crossing.



While we typically think of cars, buses, and trucks as the principal operators in the travel zone of the street, this is also typically the zone of bicycle travel. Even where off-street trail facilities are provided, bicycles are still legal users of the travel zone. The travel zone must be designed to provide safe facilities and safe operation to protect all users.

Speed is a critical factor in safety. Most city streets should be designed to produce an operating speed that does not exceed 25 mph. Shared streets should be designed to encourage speeds no greater than 15 mph. The speed limit is the maximum permitted speed, and the street must be safe to travel at this maximum speed (the speed limit). However in some street types—such as Neighborhood Residential and Urban Center—and in some areas, school zones, the desired speed may actually be lower than the maximum permitted speed.

The dimensions and assemblage of facilities in the travel zone should create "self-regulating streets" in which the design of the street encourages users to travel at an appropriate speed for that street type. In general, self-regulating streets should have a posted speed limit that is the same as the design speed and the target operating speed.

LANE WIDTHS

Travel lane width is a significant factor in how drivers interpret the appropriate speed of travel on a street and is a key element to self-regulating street design. Travel lanes also tend to be the largest street element in the total cross section; as such, reducing travel lane widths can reduce the distance needed to cross a street as well as impacts on the community. Minimizing travel lane widths can also provide space for facilities for the safe movement of other users in the street right of way, such as transit bulbs, wider sidewalks, street trees, or bicycle facilities.

The widespread application of 12-foot travel lanes is due to the belief that they improved safety by reducing the probability of side swipe crashes and increased vehicle throughput. However, research has indicated that in most cases, travel lane widths between 10 feet and 11 feet on urban arterials do not negatively impact overall motor vehicle safety or operations, and also have no measurable effect on capacity.[18]

Use of the narrowest appropriate lane width results in lower speeds, increased safety, less severe crashes, and more space for other critical uses of the right of way. While many streets in Grand Rapids have 12-foot travel lanes, 10-foot travel lanes are more appropriate where posted vehicle speeds are 45 mph or less.[19]

18 Potts, Ingrid B, Harwood, Douglas W and Richard, Karen R. *Relationship of Lane width to Safety for Urban and Suburban Arterials.* Washington, D.C. : Transporation Research Board, 2007.

19 The American Association of State Highway Transportation Officials' (AASHTO) Policy on Geometric Design of Highways and Streets (commonly referred to as the "Green Book")

Engineering judgment must be used to determine if lane widths should be expanded or narrowed from the recommended widths below.

RECOMMENDED LANE OR TRAVELWAY WIDTHS IN THE CITY OF GRAND RAPIDS.

TRAVEL LANE / TRAVELWAY USE	RECOMMENDED WIDTH
Yield street (exclusive of on street parking generally required on at least one side)	16'
Travel lane directly adjacent to the curb	11'
Typical general purpose travel lane	10'
Turn lane	10'
Bicycle Facility	6'
Frequent transit bus lane or lane with high volume of heavy vehicles (>8%)	11'

On streets with high volumes of heavy vehicles (greater than eight percent), one 11-foot wide travel lane, inclusive of the gutter, should be provided in each direction (generally the curb-side lane).

Lane widths should consider the design of elements, their users, and the overall assemblage of the street and examine interactions between adjacent elements.

- For example, gutter pans are typically one to two feet wide with a minor seam between the gutter and the paved roadway surface. This seam is not a concern for the wide tires of a motor vehicle, but it can be problematic for the thin tires of many types of bicycles. For this reason, gutter pans may be included in the total dimension of vehicle travel lanes but should not be included as a component of bicycle lane width, particularly on bicycle emphasis streets.

It is sometimes inadvisable to choose the narrowest dimension for all elements within the static zone and travelway of the street, as this leaves little room for error.

- For example, the minimum dimension for a parking lane is seven feet. The bare minimum width for a bicycle lane is five feet when next to a curb and four feet without a curb. Travel lanes are preferred to be at least 10 feet. When these minimum dimensions are used together next to a median or centerline, there is little room for doors to open and bicycles to maneuver around them. Increasing the bicycle lane dimension to six feet keeps parking close to the curb and maintains the perception of a narrow travel lane which reduces travel speeds.
- Where streets have a designated modal emphasis, the preferred dimension for the selected modal facility should be used.

Lane widths may be marked or unmarked, depending on the street type. Unmarked lanes or streets, such as yield streets, do not have separately defined “lanes” but rather a generally shared space that provides the necessary lane width; they may also require vehicles to “yield” to one another as they pass. Yield streets are generally two-way low volume (fewer than 1,500 vehicles per day) low speed (less than 25 mph) streets. Rather than individual lane widths these streets have an overall clear travelway width.