Bureau Brief: Walkability

Walkability has numerous benefits, but how walkable an area is can be hard to quantify—while people have good intuitions about whether their neighborhood lends itself well to casual strolls, or how many destinations are easily reachable on foot, it can be harder to put those thoughts and feelings into a context that could inform public policy. In this brief, The Research Bureau has summarized existing research on the subject of walkability, and has used that data and analysis to create a scorecard that Worcester residents can use to assess the pedestrian-friendliness of local roadways.

What is Walkability?

The characteristics measured to define walkability vary from study to study, but all include factors relating to safety, security, usability, accessibility and aesthetic.

Safety in walking conditions is important to keep pedestrians from unintentional harm. Safety features include marked crosswalks to identify recommended spots to cross the street, for the benefit of both pedestrians and drivers. Other safety features include speed limit signs and enforcement, pedestrian crossing signs, and separation of pedestrians from traffic.

Security features are those that allow pedestrians to feel free of any intentional danger or threats. These features would deter a person from making a choice that may cause a pedestrian harm. Security features include well-lit walkways, traffic lights or stop signs at crossings, and in some circumstances can include the presence of law enforcement or security cameras.

Usability features of walkability include those that make walkways and crosswalks intuitive to use as intended. They create an environment where one would be able to easily recognize the signage and signals that keep pedestrians from harm. Usability features include signage to explain crosswalk push buttons, easy to understand crossing time alerts, and wayfinding signage.

Accessibility expands the definition of walkability to include typically marginalized communities in the urban planning process. Streets should be accessible and convenient for all pedestrians, regardless of age or physical ability, which means they must be planned with the intention to serve residents with disabilities equally. These features would include crosswalks and curb cuts conforming with the Americans with Disabilities Act, auditory and visual cross-time signaling for crosswalks, and well-placed pushbuttons for crosswalk signals.

Aesthetics are another consideration in conversations about walkability. Aesthetic aspects of walkability have to do with how attractive the walkway and its surroundings are to pedestrians. These aspects could include the placement of landscaping, art, or interesting architecture along walkways. Aesthetic aspects also include the incorporation of benches and litter bins.

Image 1: Worcester Main Street Redesign Rendering

MassDOT illustration

Why is Walkability Important?

The obvious benefit of walkability is that residents have the option to use walkways to get around without relying on the use of money, a schedule, or any other assistance. This concept is commonly known as agency. Not everyone is able to use private or public transport, which could stem from any number of systemic barriers, but nearly everyone can access sidewalks and walkways. Walkability has also been shown to be closely related to heightened community health and increased economic opportunity.
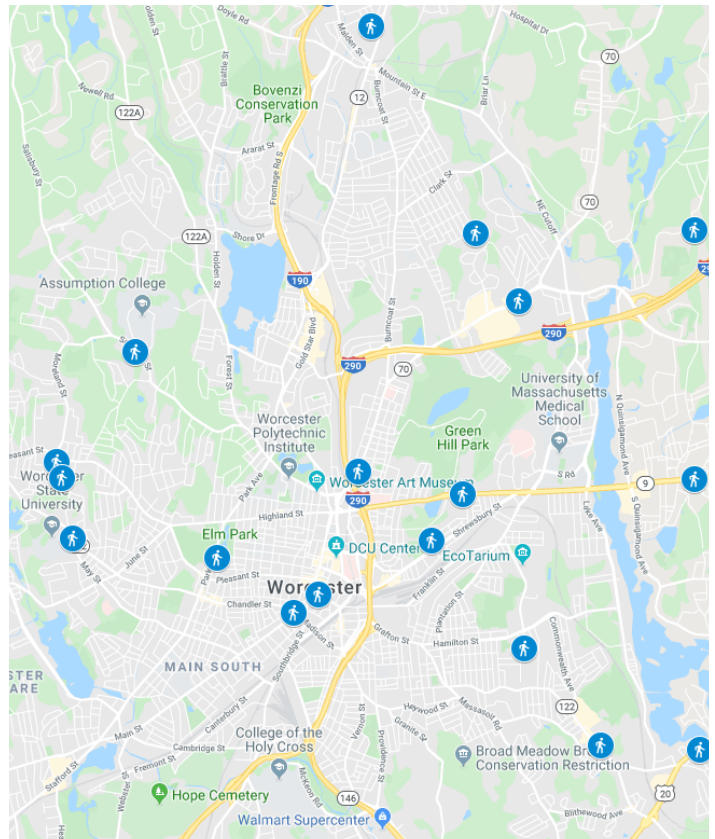
Community Health

Many studies have confirmed the intuitive relationship between walkability and health. In 2015, the U.S. Surgeon General, citing a multitude of studies on the health benefits of walking, made pedestrian-friendly design principles a key part of a Call to Action focusing on walkability. Obesity and associated health problems like heart disease and diabetes can be counteracted with increased physical activity, with walking as an easily–accessible option for many Americans. Chronic diseases like asthma have also been linked to low walkability in an area. The Surgeon General recommended designing streets and sidewalks that make walking easy and safe, which could encourage higher levels of walkability in a community's population. The implications for community health led to the inclusion of a walkability scorecard as a strategic priority for Worcester's Community Health Improvement Plan.

Environmental Sustainability

Because poor walkability can cause residents to prefer driving, research has shown environmental benefits to walkability. A 2009 University of Minnesota study found that in areas with low walkability and high population density, residents risk higher levels of driving emissions per person. The US transportation sector, including cars, trucks, planes, trains, and ships, produces more US global warming emissions than any other sector (33 percent), according to the Union of Concerned Scientists. Low air quality has been linked to various health problems, making cutting down on transportation emissions a priority for cities. Good walkability can also foster compact, mixed-use development patterns that are more environmentally-friendly.

Map 1: Pedestrian Fatalities, 2016-2019

As of Dec. 11, 2019. Source: Massachusetts Vision Zero Coalition

Economic Development

Walkable neighborhoods have been shown to be more desirable places to live, which can have economic repercussions. Studies have shown that households in automobile-dependent communities spend much more on transportation costs than walkable communities, and these communities also experience increased traffic congestion and parking scarcity that have an adverse effect on local businesses. The availability of sidewalks, reduced vehicle traffic, and other signs of pedestrian-friendliness have also been linked to increased property values.

Next Steps

Walkability came to the forefront of statewide conversation in 2016, when the Commonwealth of Massachusetts established the Complete Streets funding program to further the understanding and development of Complete Streets on local roads. Under this program, a "Complete Street" is one that provides safe and accessible options for all travel modes—walking, biking, transit, and motorized vehicles—for people of all ages and
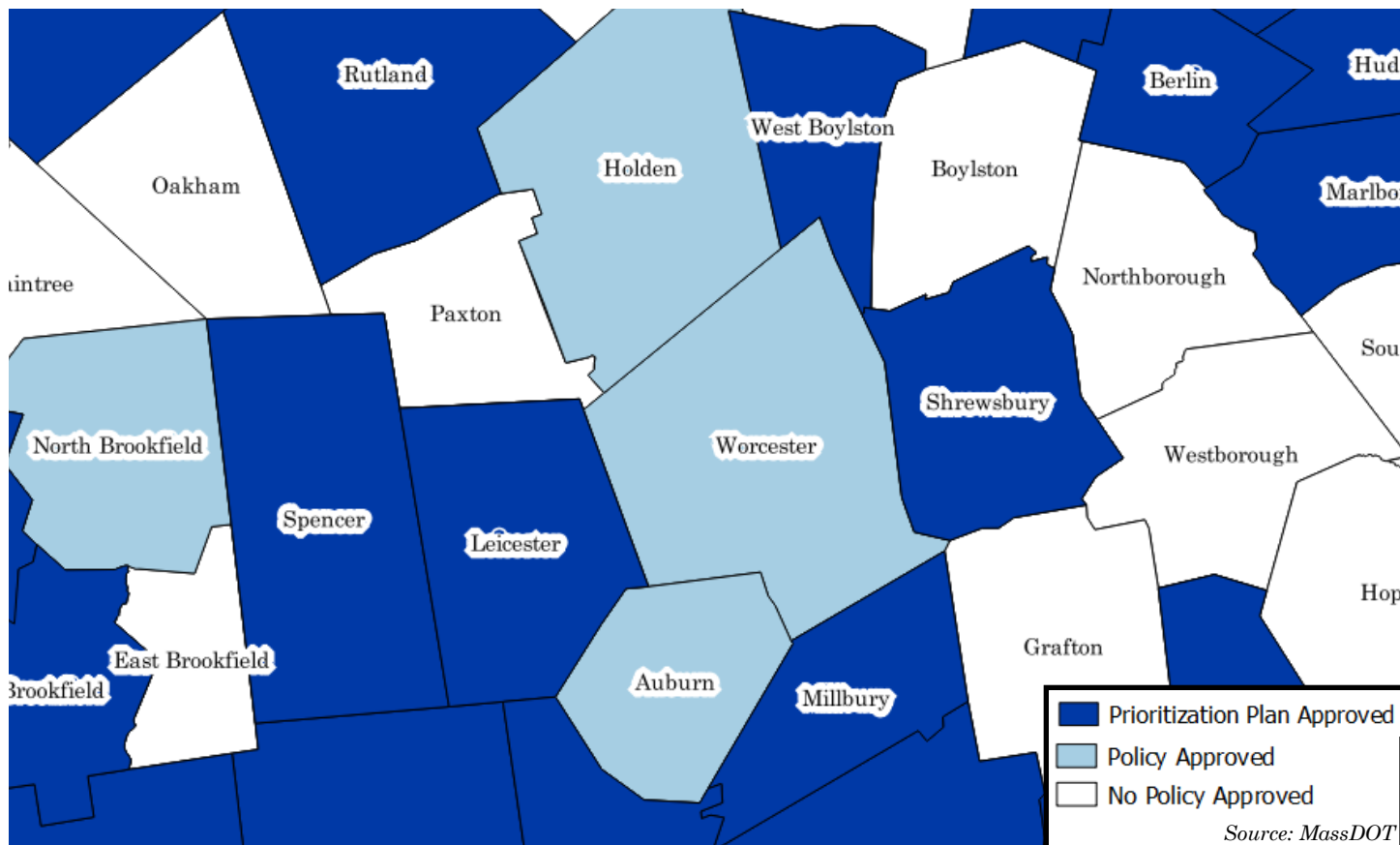
abilities. As of November 2019, 234 municipalities had registered with the program, of which 208 had approved policies, and 170 had approved prioritization plans (see Map 2).

The Commonwealth approved the City of Worcester's Complete Streets policy in February 2018, awarding a score of 97 out of 100 possible points. The policy lays out a commitment to best practices in the planning, design, and execution of road projects, with walkability and pedestrian safety as key priorities. Notably, the policy recognizes that community and stakeholder participation is crucial, and established a Transportation Advisory Group to provide input, assist in policy development, and foster coordination. Other key elements include creating a Complete Streets project review and preparing a Long-Range Transportation Plan in association with the city's development of a new Master Plan. Under the state program, the next step would be to develop a Prioritization Plan, making Worcester eligible for technical assistance and construction funding, furthering the goal of a walkable city.

Some of the best judges of an area's walkability are the people who live and walk in the area, and The Research Bureau hopes the Worcester Walkability Scorecard assists residents in evaluating the pedestrian-friendliness of their own neighborhoods. The value of such a walkability assessment was illustrated recently by a Lincoln Street "walk audit" organized by the Green Hill Neighborhood Association, supported by WalkBike Worcester, WalkBoston, the Worcester Division of Public Health, and the Central Massachusetts Regional Planning Commission.

It is often said that "the squeaky wheel gets the grease"—a car-centric metaphor that nonetheless illustrates the need for residents to speak up about walkability needs in their area. By providing an easy way for residents to measure walkability, The Research Bureau hopes to assist with such efforts by bridging the gap between the formalized bureaucracy of the Complete Streets program and the intuition of neighborhood residents, allowing everyone to contribute to the important goal of creating a walkable, safe community.

Map 2: Complete Streets Program Participation

Source: MassDOT

Worcester Walkability Scorecard

Street:_____	Facilitator Name:	Date Completed:
Starting Address:_____		(MM/DD/YYYY)
Ending Address:_____		
Type: Residential ☐ or Commercial ☐		____ /_____ /_____

Variable		Measure	Finding	
Sidewalk	1	Sidewalk is wide enough to accommodate wheelchair users and to allow multiple parties to pass without leaving the walking path	Y / N	(NA)
	2	Sidewalk adequately separates pedestrians and motor vehicles	Y / N	(NA)
	3	Sidewalks offer a continuous path	Y / N	(NA)
	4	Sidewalk is free of obstructions, with a clear path for pedestrians (including wheelchair users)	Y / N	(NA)
	5	Surface material is well-maintained (free of damage, cracking, etc)	Y / N	(NA)
	6	Sidewalk is clean (free of litter, debris, weeds, etc)	Y / N	(NA)
Crossings	7	Presence of countdown signals and sounds alerting pedestrians of time remaining to cross the street	Y / N	(NA)
	8	Able to cross intersection in given time	Y / N	(NA)
	9	Presence of lighting alerting cars to pedestrians crossing the street at busy intersections	Y / N	(NA)
	10	Presence of safety islands for pedestrians crossing wide (3+ lanes of traffic) streets	Y / N	(NA)
	11	Detectible warning strips (e.g. truncated domes) at the curb	Y / N	(NA)
	12	Presence and maintenance of curb cuts	Y / N	(NA)
	13	Push buttons are available for walk signals, and they are easy to find, reach, and use	Y / N	(NA)
	14	Marked crosswalks are well-maintained (free of fading, etc)	Y / N	(NA)
	15	Crosswalks are well-lit and highly visible	Y / N	(NA)
Modal Conflict	18	Pedestrians and motorists have good visibility of one another	Y / N	(NA)
	19	Safe distance exists between walkers and other transportation modes	Y / N	(NA)
	20	Presence of physical or natural buffer (e.g. landscape strips)	Y / N	(NA)
	21	Ability to see oncoming traffic from curb cutouts	Y / N	(NA)
	22	What is the speed limit (or speed limit range)?		(NA)
Amenities	23	Frequent light posts/lighting	Y / N	(NA)
	24	Availability of benches	Y / N	(NA)
	25	Availability of public restrooms	Y / N	(NA)
	26	Availability of bicycle racks	Y / N	(NA)
	27	Availability of water fountains	Y / N	(NA)
	28	Availability of pedestrian wayfinding signage	Y / N	(NA)
	29	Frequent and regularly-spaced street trees	Y / N	(NA)
	30	Availability of waste and recycling disposal	Y / N	(NA)

Comments: