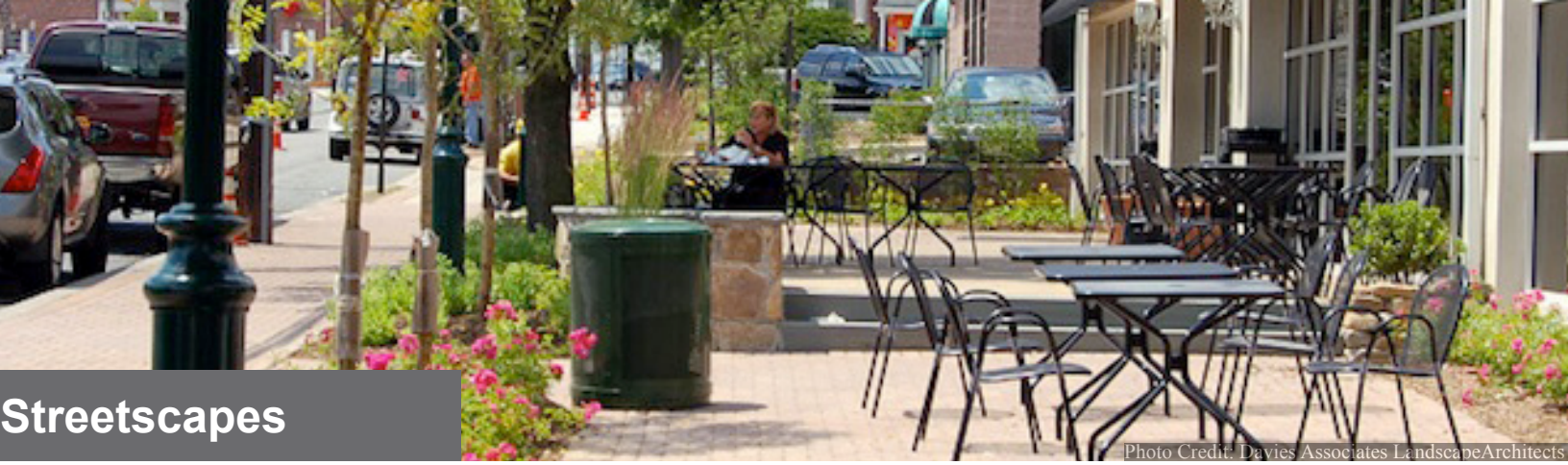

Streetscapes

Photo Credit: Davies Associates LandscapeArchitects

Aaron Leckie

The World Health Organization (WHO) estimates that by 2050 older people will comprise of one quarter of the population of cities (WHO, 2007). In addition to this, in 2002, 8 percent of the US population under 65 had some level of mobility disability (Myerson, 2007). Many older and disabled people recognize that conventional streets are not accessible to everyone. Crosswalks are long, sidewalks are absent, and intersections are too large. 40 percent of Americans over the age of 50 identify that their neighbourhoods lack adequate sidewalks (National Complete Streets Coalition, 2010) and therefore limit their mobility options. Universal design aims to improve convenience for people of all ages and abilities (Sucher, 2003). Streetscaping and pedestrian-friendly neighbourhood design can provide older people with safe, comfortable, and convenient environments.

What is Streetscaping?

40% of Americans over 50 indicate a lack of sidewalks in their neighbourhood

According to the Transportation Demand Management Encyclopedia streetscaping is defined as:

> "[recognizing] that streets are places where people engage in various activities, including but not limited to motor vehicle travel…..streetscaping can include changes to the road cross section, traffic management, sidewalk conditions, landscaping (particularly tree cover), street furniture (utility poles, benches, garbage cans, etc.), building fronts, signs, and material specifications." (TDM Encyclopedia – Streetscape Improvements)

When streetscaping is understood through accessible or universal design policy, streetscapes should be designed to comfortably accommodate all modes of transportation and users of all abilities including older people and the disabled.

Photo Credit: Aaron Leckie

Figure 1: Neglected sidewalks create a barrier for older people. Trees with deep roots should be chosen to line sidewalks to limit uplift.

Sidewalk and Pavement Conditions

The Council of Industrial Design recognizes that surfaces and sidewalks are the most important single visual factor in the urban environment, and are yet the most neglected in terms of consistency and accessibility (CID, 1972). Uneven pavements can be difficult to navigate in a wheelchair, with a walker, or with a walking aid (Lynott, 2009; figure 1). It is important to

Figure 2: A single ramp does not line up with both crosswalks.

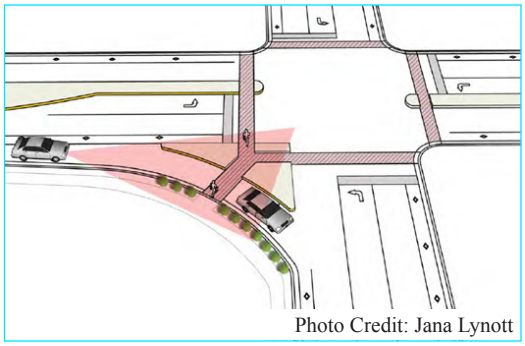

Figure 3: A well-streetscaped intersection increases pedestrian safety and driver visibility.

maintain a balanced texture on sidewalks and crosswalks. The debate is, should sidewalks and ramps be rough or smooth? Sidewalks that are smooth are easier to negotiate with a wheelchair (Sucher, 2003; Lynott, 2009), but at the same time are slippery when they are wet and therefore are a concern for seniors (Heiss, et al., 2010). A similar tradeoff occurs with the use of paint on sidewalks or crosswalks. The paint makes the area more visible to drivers, but also can be slippery when covered with water (Lynott, 2009).

Maintain a balanced texture on sidewalks and crosswalks

Pedestrian/Vehicle Interactions

At most intersections, a simple curb defines the boundary between vehicle and pedestrian traffic. Ramps down to street level are constructed with the purpose of allowing easier access for wheelchairs, scooters, and people whose physical condition that make it difficult for them to step down. However the location of these ramps does not always align with the crosswalk. A single ramp "can 'dump' the pedestrian into the centre of the intersection" (Lynott, 2009, p. 44) making the crossing dangerous (figure 2). There are two viable solutions that are adaptable to certain intersections and amount of vehicle traffic. Moving the curb out onto the roadway reduces the distance pedestrians must walk and aligns the crosswalk with the ramp, or crosswalks can be raised making the crosswalk more accessible, and pedestrians more visible (Sucher, 2003; figure 3).

Figure 4: Without an island the distance to cross intersections can seem impossible. A woman was fined $100 for taking too long to cross this intersection

The distance to cross major intersections is also a concern. Their declining mobility of older adults makes crosswalks a formidable challenge (figure 4). One way of improving the perception of safety is to create islands of refuge midway across intersections. However Heiss and colleagues finds that these islands are often too small and therefore do not safely protect people from vehicles (Heiss et al., 2010). Heiss and colleagues recommends that "turn-arounds on islands be at least 150 cm x 150 cm to permit change in direction on traffic islands" (Heiss et al., 2010, p. 43) for wheelchairs and scooters (figure 5b).

Figure 5a: a typical street before streetscaping.

Figure 5b: after streetscaping the road appears safer. Note the size of the traffic island.

Landscaping and Aesthetics

In this section the affects street-level lighting, trees, and benches have on the urban environment will be discussed. These three amenities are "especially critical for older people" (Lynott, 2009, p. 45) and contribute to accessible design.

Light standards can leave dark areas for pedestrians

Light standards for streets and vehicles is typically 10 meters high (CID, 1972) and can leave dark areas for pedestrians between lights (Rubenstein, 1978). Lighting at the pedestrian level increases the perception of safety in an area, and is more age-friendly because it reduces glare if lighting is more frequent (Ibid.). Street-level lighting activates the sidewalk in the evening and improves visibility (Lynott, 2009).

Figure 6: Tree-lined boulevards and parked cars psychologically slow drivers down.

Trees are of utmost important to providing complete streets. Trees create canopies over pedestrian walks, provide shade, enhance aesthetics, and generate a buffer between sidewalk and roadway (Rubenstein, 1978; Lynott, 2009; Dumbaugh, 2005). Where available, it is important to maintain the buffer between sidewalks and streets. Large trees lining both sides of a roadway also has the physiological impact of significantly reducing speeds of vehicles as they often feel squeezed into an area and consequently, slow down (Dumbaugh, 2005; Burden, 1999; figure 6).

Benches provide "sitting, resting, or gathering…… [and transform] an uncomfortable, lonely pathway into a pleasant, visually interesting public plaza" (Lynott, 2009, p. 45). However the design of benches often limits seating to physically fit individuals (Sucher, 2003). A lack of benches in pedestrian areas can also have adverse affects on the walkability of downtown neighbourhoods. Benches are often constructed of concrete and without armrests or back support because of vandalism (Rubenstein, 1978).

It is important to build a soft interface between sidewalks and buildings, and also to allow buildings to 'spill out' onto sidewalks in form of outdoor seating for restaurants or beautification (Hall, 2007). A lack of attention to detail of lighting, trees, benches, awnings, transit stops, litter bins, etc. can discourage pedestrian activity and negatively impact main street revitalization (Lynott, 2009).

Final Thoughts

Creating complete streets aims to reorganize public space and take into account all modes of transportation and people of all abilities and ages. Improving sidewalks, pedestrian and vehicle interactions, and street aesthetics are just some of the universal design measures that make a neighbourhood more livable and accessible (National Complete Streets Coalition, 2010; Cao et al., 2007). Although streetscaping has a limited affect on transportation choice, streetscaping does tend to enhance accessibility for walking trips (Cao et al., 2007). Streetscaping and universal design are important aspects of providing accessibility for people of all ages and abilities.

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