by Russell Brownlee

Active Transportation

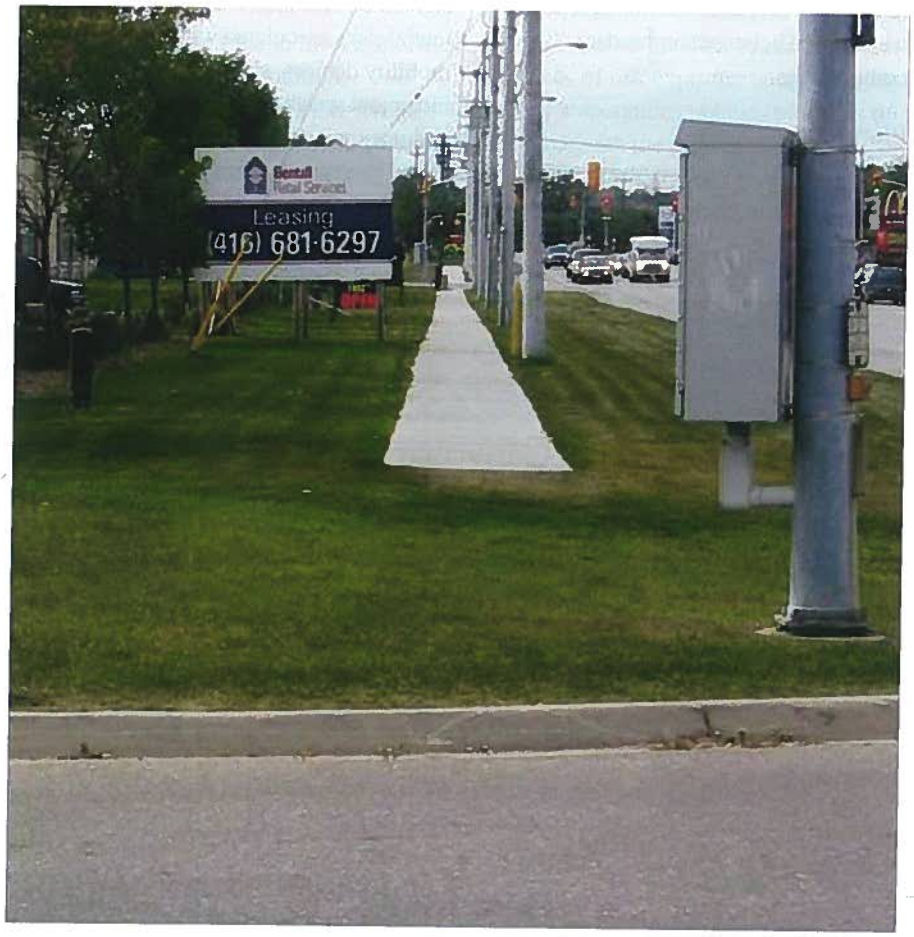
Is your municipality adequately responding to this revival?

While active transportation (AT) planning began to mobilize in the late 1980s and early 1990s, it has been in the last decade that we have experienced a fundamental shift in real demand for pedestrian and bicycle facilities. The provinces and many of their municipalities have answered the call and are aggressively implementing active transportation into their urban and rural transportation systems. These facilities, in whole or in part, share our roadways, transit and rail corridors, sidewalks, and crosswalks. As more Canadians embrace active transportation in their daily commute, exercise, and recreation routines, municipalities must continuously assess the planning, design, operations, and maintenance of the infrastructure to ensure safe travel of these modes.

All are familiar with the old adage: "**If you build it, they will come.**" Jurisdictions have experienced this outcome with the provision and expansion of new transportation facilities. A proverb that has not hit the mainstream, but equally holds true based on experience in the realm of transportation: "**If you don't build it, they may show up regardless.**" Having not planned or provided for AT in their communities, some have been left to deal with pedestrians and cyclists using existing facilities that were never planned or designed for their purposes, with the potential for significant negative events. For example, bicycles may end up using high-speed rural or urban arterials because direct and alternative routes do not currently exist. Responding to the pressures of continual expansion, engineering and planning departments were challenged to implement new roadways to accommodate the rapid growth. Many are now playing catch-up to accommodate the other forgotten transportation modes, including transit and AT. This interim period – where the AT demand is present, the municipality is cognizant of and has established the need, but the funding, resources, and facilities are not quite there – becomes a significant risk management concern if not appropriately handled.

Figure 1

Facility continuity and routing during interim stages



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The focus of the remainder of this article will be another proverb that should become increasingly prevalent in the risk management world: "**If you build it, you better do it right**." While not as captivating as the original adage, it is one that engineers, risk managers, and legal staff should be aware of in implementing and upgrading their AT facilities and networks. In the haste to accommodate the introduction or revival of AT, we may be inadvertently introducing greater liability and risk to our organization.

While we cannot cover all aspects of risk management related to AT facilities, presented below are a few examples, taking into consideration the various stages in the lifecycle of a transportation facility. The intent is to increase the awareness of road user safety and risk management as we strive to better accommodate AT in our communities.

Planning

Whether you are looking at opportunities to retrofit capital projects in a mature area or planning new AT initiatives in a green field scenario, one of the recurrent challenges is the phasing and interim stages that occur prior to full implementation. The question becomes that of piecemeal implementation or the delay of the overall project until funding, resources, approvals, property, etc., become available. Larger initiatives, such as the implementation of a bicycle network in your community, will inevitably require a staged approach over a number of years.

Figure 1, on the previous page, provides a more localized example where it appears that a constraint existed and the decision was made to construct what was feasible at the time. During fair weather conditions, able-bodied pedestrians could continue to the paved surface and to the signalized crossing. But, have the potential risks associated with those using mobility devices, slips and falls during inclement weather, winter maintenance, and unexpected conflicts on the approach to the intersection been considered during this interim stage?

Interim implementation stages represent circumstances that routinely find themselves at the centre of liability claims. And, there are many other examples commonly experienced, such as a bike path or lane that is terminated at a location that requires the user to continue in mixed traffic along a narrow rural road or high-speed arterial and/or cross a busy facility at an uncontrolled location.

In the planning process of these facilities, specific attention should be turned to how a dedicated facility or specific treatment will be terminated or transitioned into a legacy facility or future project area. Although this sounds intuitive and simple, a short tour of your most recent projects will probably net at least one instance that has the potential to be a substantial risk to the users and your municipality.

Design/Construction

To many plaintiffs seeking a finding of liability, not meeting the design standards or guidelines means "unsafe" conditions that contributed to the incident. Transpor-

Figure 2

Pavement Edge Between Adjacent Bicycle and Sidewalk Facilities

tation practitioners are well aware that "guiding documents" are just that, and design exceptions and engineering judgment are commonplace to meet overall project objectives and address site specific constraints. Proper documentation and execution of these departures is paramount to address concerns regarding liability.

The following are a number of common issues in the design and construction of AT facilities:

- The available design and construction guidance for our AT modes/facilities is less rigorous, researched, and tried than for our vehicle facility counterparts. Along the same lines, our designers, consultants, and constructors are less familiar with these facilities and how to properly address departures or design exceptions from the guidance that is available.
- The lower operating speeds of pedestrians and bicycles suggest to some that basic features such as stopping sight distances, clear zones, traffic control devices, etc. are not as critical for safe passage along and across these facilities.
- Many AT projects are being retrofitted into rights-of-way and existing conditions where they were never contemplated. In many cases, substandard facilities are fit into insufficient spaces or less than ideal conditions.
- Facilities are designed and constructed on a tight schedule with the resources available at the time to meet a specific funding model or condition.

An example of an avoidable hazard is provided in Figure 2. The facility has a two-way asphalt bicycle path with a separate parallel concrete sidewalk for pedestrians. It was constructed in 2013 and represents a significant improvement for pedestrian and bicycle operations; however, a varied height differential up to 2.0 cm (0.75 inches) is present between the two paths. It is unknown if the height differential was a planned design feature to further define the division between the bicycle and sidewalk facilities, or was a result of the construction practices. Notwithstanding the source of its existence, it now represents a toe trip hazard along much of the new AT facility in a location where pedestrian travel is both promoted and expected. While it may be deemed innocuous by a lay person or maintenance personnel, it is considered a deficiency by the ASTM Standard Practice for Safe Walking Surfaces and represents a liability risk until corrected.

Operations

Following the applicable regulations, standards, and guidelines for your jurisdiction is a good first step in reducing your liability risk. Supplementing these with reasonable and up-to-date policies and practices provides another layer of defence should an incident occur. Common instances of risk exposure occur when an agency's operations policies/practices do not agree with the state of the practice, or the policy is blindly followed regardless of the site specific conditions.

Figure 3 illustrates the consequences and risks of such an operational policy. Pedestrian facilities including crosswalks, pedestrian signal heads, and push buttons were required at all new traffic signal installations. The policy is reasonable and supportive of accommodating pedestrian travel throughout the road networks.

Figure 3

Poor Accommodation of Pedestrians

Unfortunately, it was implemented at the location shown, despite the design, character, and nature of this high-speed rural intersection. A whole host of new safety concerns and liabilities were introduced. Pedestrian travel was facilitated to a corner of the intersection where no sidewalks or other pedestrian facilities were available. In fact, pedestrians were not able to leave the travel portion of the roadway or access the pedestrian push button without climbing over a guide rail. Once on the shoulder, they were presented with a multitude of obstacles including toe trip hazards, uneven and loose surfaces, and steep slopes. The only thing missing is the plaintiff lawyer's business card taped to the pole for the ensuing incident.

Maintenance

With the development and expansion of our AT networks, attention then turns to properly maintaining them during all seasons and into perpetuity. Many jurisdictions have minimum maintenance standards for roadways; however, very few have policies for AT facilities. Some may assume that AT components such as bike lanes may fall within the normal road maintenance activities; however, it may not be the practice of the road authority to clear snow and ice to the face of the curb. For example, in Ontario, the Minimum Maintenance Standard for Municipal Highways does not require that the entire lane be cleared of snow to be considered in a state of good repair. As such, a 1.5 m bike lane effectively becomes 1.25 m, 1.0 m, or less during the winter months. In the case of a bicycle or shared use path, the municipality may not provide winter maintenance at all.

Summary

While the above examples only touch on a few risk management considerations, it is anticipated that they may increase the awareness of road user safety and risk management as we strive to better accommodate AT in our communities. MW