2007 TAC SUSTAINABLE URBAN TRANSPORTATION AWARD SUBMISSION

Bridge Over Highway 401 for Pedestrians and Cyclists in Waterloo Region

Project Partners:
City of Cambridge
City of Kitchener
Region of Waterloo

BRIDGE OVER HIGHWAY 401 FOR PEDESTRIANS AND CYCLISTS IN WATERLOO REGION

The Project

The Pedestrian/Cyclist Bridge (The Bridge) is an important community link that connects the Trans-Canada Trail in Kitchener and Cambridge and provides a safe route for pedestrians and cyclists to cross Highway 401 in Waterloo Region. The 101.5-metre bridge has an enclosed arched canopy that, at the centre of the arch, rises 14.58-metres. The $1.7-million construction cost of the bridge was funded equally by the project partners, the Region of Waterloo and the Cities of Cambridge and Kitchener. Planning for The Bridge, which is the first of its kind to be built across Highway 401, began in 2003 and culminated with a celebration of its opening in October 2007.

The Bridge supports and promotes active transportation, creates a vital link between two communities, improves access to a community college and is a safe connection for users of the Trans-Canada Trail, while enhancing the local trail system. It lays the foundation for reduced auto trips for future development on adjacent lands. The project pioneered three significant innovations in Waterloo Region that will serve as models for similar projects: a collaborative municipal partnership; a broad-based community consultation and design program; and innovative construction techniques that translated a unique vision into reality.

Development and enhancement of sustainable urban transportation

Social

The Bridge provides a connection for pedestrians and cyclists over Highway 401 – an eight-lane highway that traverses the province. It fills a gap in the Trans-Canada Trail, where the original alignment was along Homer Watson Boulevard and Fountain Street – which includes a highway interchange with on and off-ramps, 24,000 motor vehicles a day, and a posted speed of 70 kmh. Even though both walking and cycling facilities are included in these road designs (current and future), The Bridge is a significantly safer route.

The Bridge is designed for universal access. It is situated in a location that greatly improves access for residents living in Kitchener to the Cambridge communities of Blair and Preston and for Cambridge residents to access a local community college (Conestoga College) and the Doon Golf Course on the Kitchener side of the highway.

The Bridge is a tremendous vantage point to observe water fowl along the Grand River, especially sightings of bald eagles in their over wintering area, which is immediately adjacent to The Bridge. At the same time, The Bridge affords tremendous views of Highway 401 – one of the major economic corridors in Canada.

While multi-jurisdictional projects are not unique in this area, the multi-disciplinary and multi-departmental collaboration garnered expertise and interest of individuals from Planning, Transportation Demand Management, Design and Construction, Transportation, Recreation, Facilities and Communications. Added to this group was a much broader assortment of organizations and individuals from the community.

- The Cambridge Trails Advisory Committee (a walking/cycling lobby group) first had a vision of a bridge over Highway 401 to be used by pedestrians and cyclists only. They went on to support it by designating three years of the City's trails budget to funding The Bridge – having identified it as their highest priority.
- The Regional Cycling Advisory Committee reviewed plans, gave advice to staff and provided support for the initiative.
- The Grand River Trails Foundation gave advice on how to make The Bridge a cohesive part of the region-wide trail network, maximizing potential use.
- The Province of Ontario assisted with Ministry of Transportation coordinating the schedule for construction of The Bridge and the Ministry of Environment approving the Environmental Assessment.
- Conestoga College, located beside The Bridge, allowed the City of Kitchener to develop a multi-use trail link between The Bridge and the local road.
- A group of architects, artists, engineers and members of the public brought skills not inherent among staff to a design charette that refined the canopy design to meet civic and community objectives.
- Heritage Committees in both cities provided information on the region's cultural heritage that was reflected in the final design.
- Almost 100 citizens attended a Public Information Centre about the project, and more than 300 people attended the official Opening Ceremonies, eager to be the first to officially cross their bridge.

The significance of this initiative is also reflected in a plaque commemorating the project, which has been installed as you approach The Bridge at the end of Morningside Drive (Cambridge). The bronze plaque includes recognition of the contribution by all of the funding partners as well as the key role played by the citizens. The nearby Trans-Canada Trail pavilion highlights the heritage aspects of the area – thereby providing a historical perspective. The City of Kitchener intends to install a similar plaque and Trans Canada Trail signs along the two local roads that connect to the next section of the trail.

Economic

The Bridge's construction costs were $1.7-million. The Cities of Cambridge and Kitchener along with the Region of Waterloo shared the costs of the project equally. This three-way collaborative undertaking, in lieu of one municipality taking on such a project as an individual proponent – resulted in significant savings to each municipality associated with such processes as the Environmental Assessment, design, construction and future maintenance of The Bridge. By pooling staff resources, no additional staff had to be hired or contracted to complete the project.

The collaborative nature of this project resulted in significant value for taxpayers. By pooling municipal resources, we were able to build a valuable facility for the entire community (and country) that no single municipality would have built on its own. As a result of collaborating closely with the Ministry of Transportation Ontario's nearby interchange expansion project, the cost of the project was reduced by $126,000. This effort also minimized the number and duration of traffic delays on Highway 401, thereby keeping to an absolute minimum the impact on movement of goods and people along Ontario's busiest highway.

Continuing the three-way equal partnership the $100,000 grant from the Trans-Canada Trail Foundation will also be distributed equally three ways.

Environmental

Having completed the project in September 2007, including an Environmental Assessment in 2004, there have been few opportunities to measure environmental benefits quantitatively. There has, however, been informal and qualitative measurement. Co-ordinating construction schedules with the MTO's expansions to the Homer Watson bridge meant just one significant traffic diversion program featuring the laying of temporary asphalt, installation of concrete barrier placement and the creation of temporary pavement markings had to be undertaken – along with the construction associated greenhouse gas emissions and resources – instead of two.

The Bridge contributes directly to the Region's goal of reducing emissions caused by auto use by greatly increasing the potential for local residents to access the community college and other nearby destinations, on foot and by bicycle. The long term environmental impact will be enhanced when the College expands to lands on the south side of Highway 401. The Bridge will connect the two campuses, presenting the opportunity for thousands of auto trips every day to be replaced by walking and cycling. Without The Bridge, every trip between the two campuses made by single occupant vehicle is estimated to be 4.36 km, generating one kilogram of CO2 each way. Given that every kilometre of travel not taken by single occupant vehicle has been estimated to keep, on average, 0.2282 kg of CO2 emissions from the air, the potential for reducing environmental impacts is significant among the 6,300 (and growing) students, and their staff and faculty.

Degree of Innovation

This project brought significant innovations to Waterloo Region, starting with the formation of a new municipal partnership process where all three municipalities were equal partners that worked interactively with citizens to plan, fund and implement the project. The significant financial commitment made by all three municipal councils at the start of the project in 2003 – and reiterated in 2006 when additional funds were added to improve the canopy – represents an important policy shift towards more active and sustainable forms of transportation.

As the first pedestrian and cyclist bridge to be built to span Highway 401, the development and construction processes used for this project will serve as a template for future projects. The design charette process used to address concerns about the aesthetics of the safety canopy on the bridge represented a unique approach to public consultation in Waterloo Region that is now a model for future infrastructure projects. The innovative canopy design that was created following the design charette incorporates both form and function by meeting the safety and security requirements with an aesthetically appealing structure that reflects the region's cultural heritage. The Bridge replicates the region's concrete bowstring arch bridges that have spanned the Grand River since the early 1900's. The open-air mesh design also limits the amount of snow and ice accumulation on the structure, which was a key design consideration, and required specialized construction techniques supplied by a Quebec-based company.

Transferability to other Canadian communities and organizations

Although Highway 401 is an important transportation and economic corridor, it – and other major highways like it – represent a significant geographic and physical barrier. For transportation planners at the Cities and Region, it has been an almost insurmountable barrier in the development of walking and cycling systems that together with roads, make up our transportation network. While the alignment of a number of key factors helped to make this project a reality, we are confident that it can be replicated in communities that see the increasing role of active and sustainable transportation along with transportation demand management initiatives.

Mike Murray, the Region's Chief Administrative Officer, is already using the partnership achieved during the project as an example of the leadership needed by governments to make innovative community projects a reality. While this kind of collaborative process takes longer, the new ideas, fresh approaches and innovations that were brought to the project by all those involved have resulted in important economic, social and environmental benefit for our community. Our primary advice to other communities considering a similar project is to invest both time and resources in external and internal communication initiatives, and to appoint project team members who recognize the value of communication and collaboration.

Added Value

Moving away from an auto-focused decision making model is challenging. Decision making does not always address the needs of pedestrians, cyclists and transit riders are entrenched in many systems. The three organizations that partnered on this project are making the shift toward decisions that enhance, develop, promote and integrate active transportation. The Bridge is in the position to contribute to improved health of those people who replace auto trips with walking and cycling, and undertake recreational activities of this nature because they can now access other parts of the community and

destinations. Their travel choices, and decision to be active reduces demand on our health care system.

Coming together on a project with significant implications for our community and experiencing such a high level of support has generated a great deal of enthusiasm among staff and community members. No doubt, this experience has served as an inspiration for other people, other projects and other communities.

An editorial in the local newspaper, The Record, when the project was first contemplated said it best:

> Highway 401 is Waterloo Region's main street. Thousands of people, thousands of products, ride in and out of this area on its hard top, multi-lanes every day of the week, every week of the year. The 401 is (also) a formidable physical and psychological barrier that divides people and communities within Waterloo Region. It separates north from south, Kitchener from Cambridge, even the Hespeler portion of Cambridge from the rest of that city. The bridge would connect the Trans-Canada Trail between Cambridge and Kitchener and would be a significant component in a national initiative to have a pathway traversing the country. Hikers and cyclists would use it as they discover the area's natural heritage, as they take a healthy break from the bustle of daily life. It would also have value, real as well as symbolic, as a unifying force in this region. Yes, there are barriers in Waterloo Region. Yes, there are divisions. But we can bridge them when we want.

We look forward to all citizens and visitors, whether they come from across Canada, or just down the street, for generations to come to cross The Bridge in Waterloo Region.

APPENDIX A

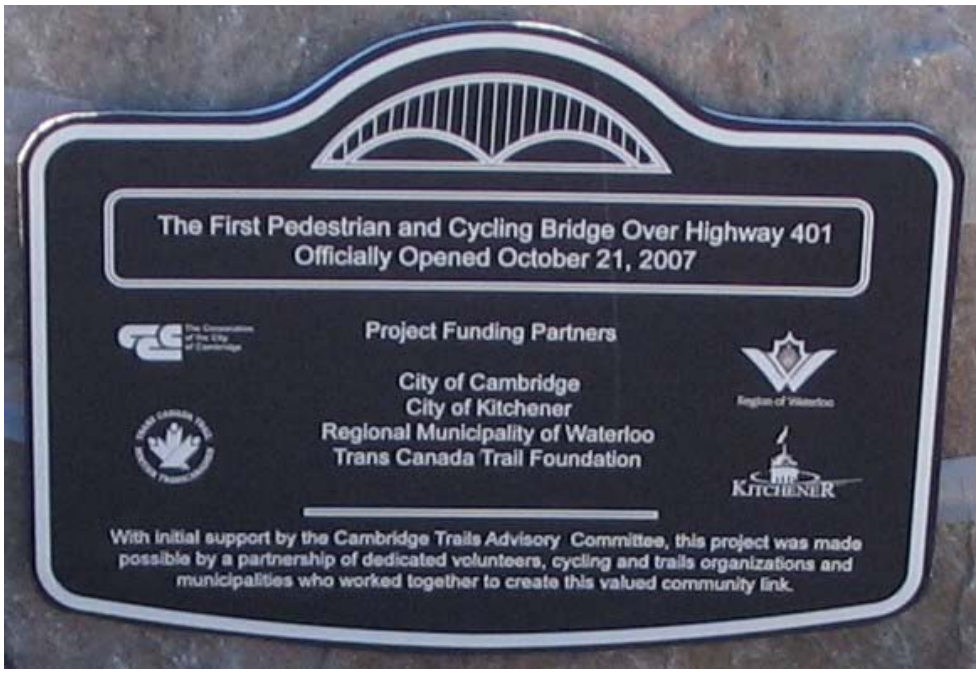
BRIDGE OVER HIGHWAY 401 FOR PEDESTRIANS AND CYCLISTS IN WATERLOO REGION

The innovative canopy design incorporates both form and function by meeting the safety and security requirements with an aesthetically appealing structure that reflects the region's cultural heritage - replicating the region's concrete bowstring arch bridges that have spanned the Grand River since the early 1900's

Opening Ceremonies October 21, 2007
Officials from Trans-Canada Trail Foundation,
City of Kitchener
City of Cambridge
Region of Waterloo

More than 300 people attended the official Opening Ceremonies,
eager to be the first to officially cross their bridge

The open-air mesh design limits the amount of snow and ice accumulation on the structure, which was a key design consideration



The bronze plaque includes recognition of the contribution by all of the funding partners as well as the key role played by the citizens

The Bridge is a welcome addition to our changing landscape

The Bridge improves accessibility AND is a great urban space