



FEDERATION
OF CANADIAN
MUNICIPALITIES

FÉDÉRATION
CANADIENNE DES
MUNICIPALITÉS

FCM SUSTAINABLE
COMMUNITIES AWARDS

FCM Sustainable Community Awards 2012 Winner – Transportation

City of Waterloo, Ontario
Population: 117,000



Davenport Road was reconfigured into a two-lane, multi-use corridor
Credit: City of Waterloo

Davenport Multi-Use Corridor Improvement

Summary

Faced with the need to upgrade a key transportation corridor, the City of Waterloo took the opportunity to develop its first Complete Street; demonstrating the effectiveness of the concept before making it part of the community's official planning documents.

Largely completed in 2011, the Davenport Road upgrade helped to reduce traffic speeds on the four-lane thoroughfare and made use of innovative design to accommodate cyclists, wheelchairs and transit users. Once a barrier between an established residential community and adjacent commercial and residential areas, the street now connects neighbourhoods and encourages active transportation by accommodating cyclists, pedestrians, wheelchairs and transit users.

The project showcased Complete Street planning concepts that the city subsequently endorsed in its newly approved Strategic, Official and Transportation Master Plans. It is expected to foster urban intensification, encourage active transportation, and help reduce the community's dependence on single-passenger vehicles.

Background

Waterloo is a mid-sized city with a population of about 117,000, located in the heart of the Niagara Peninsula, just over 100 kilometres west of Toronto. Originally a rural centre surrounded by rich agricultural lands, the city grew rapidly throughout the 20th century, evolving into a regional educational and industrial hub. Over the past 30 years, the technology sector has flourished in the region and Waterloo has earned a reputation as a leader in the knowledge economy. It is home to prestigious institutions including the Perimeter Institute for Theoretical Physics and the University of Waterloo Research and Technology Park. Its corporate community includes iconic companies such as Research in Motion (RIM), Open Text, Google and IBM.

Like most rapidly growing cities, Waterloo is subject to urban sprawl and a corresponding increase in traffic and congestion. Upgrading old roads and infrastructure to accommodate the city's growth is an ongoing challenge. By the mid-2000s the city had a long list of complaints from residents about traffic speeds, and safety issues for pedestrians and cyclists on older roads. In 2006, a comprehensive traffic study detailed public concerns and helped identify the streets that were most in need of attention. Davenport Road, in the city's northeast section, was high on the list.

Davenport was designed and built in the late 1970s as a major collector street connecting key arterial roads. Originally an undivided, four-lane road that ran for two-kilometres through a neighbourhood consisting of small businesses and low-rise housing, today it also provides access to the city's bus terminal, a city transit hub and a large regional shopping mall.

Project Development and Implementation

In 2008, Waterloo successfully applied for funding from the federal government's Build Canada Fund to redevelop Davenport Road. In 2009, the city retained a consultant to develop the design, tendered the construction work and awarded the contract. Construction began in 2010 and continued in 2011. It will be completed in 2012 with the addition of a roundabout.

The project was designed to incorporate recommendations from the city's 2006 traffic study, but also to involve the local community. To keep the community informed, the city created a project web page, which was regularly updated. It also conducted four public open houses and two stakeholder meetings. "We included area businesses, the transit authority and some of the smaller communities," explains Christopher Hodgson, project manager with the city's Public Works Services and Capital Projects and Services department, "We also consulted with a local retirement residence and a special needs school."

Ensuring that the community was engaged and involved in the project design was a lengthy but necessary process Hodgson says. At the time, the city was developing new Strategic, Official and Transportation Master Plans that incorporated a complete streets approach to accommodate all users and all modes of transportation. While the Davenport project was scheduled to proceed before the new plans were adopted, Hodgson says, "it was clear that we couldn't take the same old approach. We needed to take the philosophy of those plans and apply it to the Davenport project." As a result, the project became an example of how the complete street philosophy could work, and it helped to reinforce the development of the city's planning documents.

The Davenport upgrade reconfigured the undivided four-lane road into a two-lane, multi-use corridor with turn lanes at intersections, bicycle lanes and lay-bys; and a median to improve pedestrian crossings and calm traffic. The upgraded road incorporates a number of innovative elements including its medians and cycling features. Medians to calm traffic have been introduced in many places but those on Davenport are different. "Most roads have end-to-end medians," Hodgson explains, "but narrowing the entire road was going to cause problems for our emergency response, snow removal, and parks and maintenance crews." The project team worked with five city departments to come up with solutions. As a result the Davenport median is constructed with a beveled edge so that fire trucks can use it to bypass traffic in emergencies, and it has gaps that provide safe spaces for parks and maintenance vehicles.

Davenport accommodates cyclists with designated lanes, lay-bys and bike boxes — the first in the region. A lay-by is a section of the right hand lane near intersections that is segregated from traffic by a hump in the pavement. Cyclists can move out of traffic and into the lay-by to wait for a green light. Bike boxes, also at intersections, are areas in front of the stop line designated for motor vehicles. The boxes allow cyclists to move to the front of the queue for red lights and position themselves in the appropriate lane to proceed through the light or make turns before cars and other vehicles. Bike boxes are in use around the world but are not yet common in Canada.

The transformation of Davenport Road is nearly complete. The road is open to traffic now but a new roundabout will be added in 2012. The difference is remarkable Hodgson says. "Davenport used to divide two neighbourhoods; people couldn't cross the street because of the traffic. Now the communities, parks, trails and stores are linked. Narrowing the road and adding pedestrian refuge islands has improved crossing times. We've added bus shelters and transit pads where there were none before, and we've planted over 300 trees that will provide shade, increase wildlife habitat and absorb carbon dioxide. The function and feel of the street and its aesthetics have totally changed."

The Davenport Road upgrade evolved into a demonstration project for the complete streets philosophy that is now enshrined in Waterloo's Strategic, Official and Transportation Master Plans. It also fits well with Waterloo's long-term vision which states that by 2020, "Waterloo is... a green city with healing green spaces, land, water, and clean air; an economic leader with a strong diverse economy; a community of vibrant neighbourhoods... an exciting city with abundant recreation, leisure, arts and culture opportunities; and a city that is accessible to all."

Results

- The 10 per cent reduction in Davenport Road's paved surface will cut salt use in winter and increase storm water infiltration year round.
- Narrowing the road will save taxpayers about \$100,000 when the street needs to be resurfaced in 15 years.
- The use of durable paint marking will save the city about \$25,000 over six to eight years.
- Increasing the landscaped area by 10 per cent will improve the appearance of the street and the air quality of the community; 300 new trees will provide shade and are expected to absorb almost 7,000 kilograms of CO₂ annually.
- The project will promote active transportation and reduce the reliance on single-passenger vehicles. "It's an example of how we can get people out of the car," says Christopher Hodgson, "If we can get people to use alternative transportation, we should be able to avoid widening roads as the population increases over the next 20 years."

Lessons Learned

- **FIND A POLITICAL CHAMPION.** "Without a champion no project goes anywhere. We had a mayor that was really supportive and a councilor who really pushed the project," says Christopher Hodgson, project manager, Waterloo Public Works Services/Capital Projects and Services.
- **DO YOUR HOMEWORK.** "You have to show that a sustainable project can work. Many people may be adverse but they can be brought around through open houses and other engagement strategies if you're prepared."
- **DEVELOP STRONG PLANNING DOCUMENTS.** "Even though our strategic documents were in the planning stages during the Davenport upgrade, the strength of the concepts and the language really helped move the project forward."
- **PLAN AHEAD.** "The Davenport project won't be complete until 2012 because we didn't anticipate the need for a roundabout at a problem intersection. It would have been better if we'd identified that need early on and allowed time to assemble the land required to build the roundabout."
- **DEMONSTRATING SUSTAINABLE IDEAS WORKS.** "The Davenport project became an example of how the complete streets philosophy could work and it helped to reinforce the development of the city's strategic plans."

Related and Future Initiatives

An upgrade of Columbia Street West is planned for 2014–2015. Designs include landscaped islands, pedestrian refuse islands, multi-use trails, raised bicycle lanes and roundabouts. Based on the complete streets philosophy, now incorporated in the city's Strategic, Official and Transportation Master Plans, Waterloo will continue to upgrade other streets throughout the city. The city will also monitor more traffic conditions including speeding, collisions and pedestrian and cycling numbers.

Partners and Collaboration

The City of Waterloo developed the Davenport project with the support and collaboration of:

- The federal Build Canada Fund.
- Representatives from Conestoga Mall, Christ Evangelical Lutheran Church, the Region of Waterloo, Grand River Transit.
- Staff from the city's Capital Projects and Services, Transportation Services, Environment and Parks Services, Corporate Communications, Waterloo Fire Rescue, and Community and Culture Services departments.

Waterloo is a member of FCM's Partners for Climate Protection program and has attended the FCM's Sustainable Communities Conference.

Contact

Christopher Hodgson

Project Manager, Public Works Services/Capital Projects and Services

City of Waterloo, ON

519-886-2310 Ext. 304

Hodgson@waterloo.ca

www.waterloo.ca

<http://city.waterloo.on.ca/DesktopDefault.aspx?tabid=2556>