
The Red Hill Valley Project (RHVP)

“More Than a Road”

Background

The Red Hill Valley Project has been in various stages of planning, design and construction since 1956. This highly controversial project still remains a key component of Hamilton's transportation network and long term growth strategy. Hamilton's ability to sustain its local economy through the creation of industrial parks that attract diverse investment has suffered by the lack of adequate transportation capacity.

Over the past thirty years Hamilton has gone from a surplus of 7,400 inbound work trips to a deficit of 23,250 outbound. During this same period the ratio of residential tax collected to non-residential has changed from 40/60 to 60/40. With relatively high industrial tax levels and little serviced industrial land available to develop, Hamilton must address its competitive tax challenges and invest more in infrastructure. Ignoring the problem would mean Hamilton continues to serve as a bedroom community for the more advanced economies in the Greater Toronto Area.

As of today, approximately 60% of the 20-kilometre, four-lane expressway is built and open to traffic (see Appendix A). The remaining 8-kilometre section that extends from the Niagara Escarpment to the Queen Elizabeth Way along Red Hill Valley has been the focus of protest, provincial and federal court action, and considerable environmental assessment investigation. This portion of the Project includes widening the QEW, which has been delayed for 20 years awaiting the completion of the RHVP.

The passion some people have against the project stems from the fact that the 360 hectare Valley is an environmentally significant area lined with over 10 kilometres of pedestrian trails. It is also a utility corridor crossed by arterial roads, rail lines, regional trunk sewer, hydro lines, gas lines, and outlets for combined sewer overflow. The Project will directly and permanently impact 70 hectares of this public open space.

Major events that have influenced changes to the Project are as follows:

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| 1967 | City of Hamilton designated the Red Hill Creek Expressway in its Official Plan, including related development. |
| 1975 | Province of Ontario promulgated the Environmental Assessment Act (EA Act). |
| 1977 | The newly formed Region of Hamilton-Wentworth took over the area municipalities' responsibility for major arterial roads including the Red Hill Creek Expressway. Since that time the majority of Council have consistently supported the completion of this project. |
| 1982 | The proposed road was one of the first major municipal road projects in the Province to voluntarily be subjected to the new Act. Municipal projects were not subject to the EA Act unless designated. As a result of community concerns about environmental impacts, the Region voluntarily subjected the Expressway to the EA Act. |
| 1985 | The joint Ontario Municipal Board and Environmental Assessment Board approved the Expressway after a 99-day hearing and ordered all relevant approvals/permits to be issued by provincial agencies. The decision was based on an evaluation of alternatives to and methods of carrying out the undertaking. |
| 1987 | The Ontario Cabinet approved funding for the project. |

1990	The Region initiated physical Expressway construction in Red Hill Valley at TH&B, Queenston Avenue and King Street. Later that year, the New Democratic Party (NDP) withdrew Provincial funding for the 8-kilometre north-south leg of the project but not the 12-kilometre east-west section. All efforts then shifted to the east-west.
1993	The NDP retained David Crombie to investigate a more ecologically sound alternative to the Red Hill Valley Expressway. The resulting proposal involved building a four-lane controlled access arterial along the Valley, employing cut and cover design where possible, and connecting this new roadway to a four-lane Woodward Avenue. The Region dismissed the proposal citing environmental, transportation and financial concerns.
1995	The Progressive Conservatives (PC) reinstated funding for the north-south Expressway.
1997	The east-west leg of the Expressway (Lincoln M. Alexander Parkway) opened 18 months ahead of schedule and approximately \$20 million under budget.
1997	The Minister of Environment and Energy issued the Region a declaration order that supported their impact assessment process that is aimed at reducing the environmental and social consequences of the Expressway design approved in 1985 (details discussed below).
1997/98	The Region completed the Red Hill Creek Watershed Plan and circulates a series of draft technical/summary reports for government/public comment.
1999	The federal government subjected the Project to a Panel Review under the Canadian Environmental Assessment Act (CEAA). The Region initiated a judicial review application, challenging the federal government's attempt to re-plan a project that was effectively under construction.
2001	The federal appeal court upheld the Region's (City's) legal position that it's too late to apply the CEAA to this project.
2002	The federal government announced it would not pursue the case to the Supreme Court.
2002	Representatives of the Six Nations community claimed treaty rights.
2003	City recommences construction.

When the Progressive Conservatives formed the new government in 1995 and reinstated the provincial funding (although at a lower percentage of 50%) the Region could have proceeded to build the road as approved in 1985. This would have meant that 4 kilometres of creek would have been encased in concrete, there would be two vertical cuts in the Niagara Escarpment (a World Biosphere designated site), extensive basket weaves for interchange lanes in the narrow portion of the valley, excavation through two abandoned/closed landfill sites and extensive filling of two provincially significant wetlands.

Throughout the planning and design for the project, the community has increasingly mobilized its forces to object to the project and to try to have Councils change their decision to build the road. Opponents to the road had actively participated in the 1985 hearing under the Consolidated Hearings Act and were responsible for making subsequent appeals. They were involved in discussions in the early 1990s on alternative locations for the road.

The Region realized that environmental standards had changed since 1985; in particular around impacts to creeks and overall public concern. After the funding was reinstated for the north-south section of the road, the Region proposed to re-examine the design for several components of the study instead of proceeding with the approved design. In order to do this, the Region requested and received in 1997 an amendment to the approved Environmental Assessment for specific design changes to address the issues raised by the previous

government and community groups. In making the request to the Minister of the Environment, the Region proposed the following:

- to examine specific design changes that would address several environmental issues considered important to the community and to meet current legislative standards;
- to assess the impacts of the design changes and ensure that they were less than the impacts of the original 1985 design;
- to develop a watershed plan in order to understand the context for the impacts including cumulative impacts;
- to predict the impacts that would remain after the design changes had been met and propose mitigation;
- to document the impacts and mitigation in an Impact Assessment and Design Report;
- to document the detailed mitigation and monitoring plans in a Design Report and to ensure that the environmental mitigation and monitoring was implemented in construction through several measures; and
- to involve the public in the process through a stakeholder consultation program.

One of the key elements of the design changes is related to the creek. As a result of the watershed studies, the Region realized the creek is failing rapidly and that it needed to take a more holistic/comprehensive approach to the stream crossings and flood control in the Valley. This resulted in adopting a natural channel design approach to 7 kilometres of the Red Hill Creek.

The proposal submitted to the Minister of the Environment was reviewed by the public and federal and provincial agencies. At this time, the public began to mobilize again to stop the construction although they participated in the review of documents and provided valuable input to the design process. The Region realized that there would continue to be opposition to the road but also realized that the input received from all members of the public was important in strengthening the environmental assessment of the design changes.

The request to make design changes and implement an impact assessment process was approved by the provincial Minister of the Environment in 1997.

In 1999, the Region encountered a federal regulatory hurdle. The Department of Fisheries and Oceans is required to provide authorization for loss of fish habitat. In making that decision they have discretion in how to apply the Canadian Environmental Assessment Act (CEAA). The natural channel stream design approach results in a net gain in fish habitat for the Red Hill Valley even with the structures that are required to cross the creek. However, it also required DFO authorization and DFO felt that the project should be subject to a federal panel hearing under CEAA.

The Region disagreed with the federal government's ability to do this at such a late stage in the project as most of the project had already been constructed (the east-west and part of the north-south). The Region and the federal government participated in a federal court case and appeal process that lasted almost three years. The Region won the court case and the appeal decision favoured the Region as well. Community activists had been involved in the court case and the appeals.

In 2001 the Region amalgamated with other municipalities in its area and became the City of Hamilton. The new City of Hamilton is now the proponent. In 2002, the City recommenced design for the north-south section.

In 2002, the First Nations in the area began to take an interest in the project concerned about the potential for native burials along the route of the Expressway and the new creek alignment. The City began negotiations with them that continue. These talks have resulted in the development of a number of agreements on how the City will work with the First Nations to address their concerns with the road construction. Some members of the First Nations, in conjunction with local environmental groups actively protested in the Valley prior to the first construction projects which led to the delay of the construction for that contract. The City continues to deal with opponents to the construction.

Today, the project is more than just a road. It consists of:

- 8 km four lane expressway (including the portion that will be built in the Red Hill valley) with modified interchanges that reduce the interchange footprint and the removal of basket weaves between interchanges.
- Realignment of 7 km of creek using natural channel stream design. The end result will increase and diversify fish habitat and address erosion concerns.
- A stormwater system that includes 3 stormwater retention ponds to control upstream flooding from urbanization and protect the QEW (a major provincial highway), and the Expressway from major flood events. Also 23 stormwater quality ponds are located along the road and they receive runoff from the road and adjacent developed areas and treat it before discharging into the creek.
- A Combined Sewer Overflow pipe that runs along the Valley and collects combined sewer from three discharge points. The pipe will be built entirely within the road corridor and it will reduce the combined sewer discharge from 20-27 times a year to 1-3 times per year in the lower end of the creek. This project has been assessed under the Environmental Assessment Act as well.
- Restoration and Rehabilitation of land within the Red Hill Valley, the Red Hill Creek Watershed and elsewhere in the City. The area where mitigation will occur is not confined to the road corridor. The Watershed Plan has provided a context for mitigation within the watershed.

Degree of innovation shown in the approach used to solve or address an environmental problem or issue and contribution made to the protection and enhancement of the environment

How does a project that has had so much public and agency opposition show innovation and enhancement of the environment? In several ways that are outlined in the following list:

1. The City's commitment to environmental stewardship is set out in Watershed First Generation Plan. This is further articulated in a project specific environmental policy and guiding principles that have been endorsed at the highest level of the organization. (see <http://www.hamilton.ca/public-works/capital-planning/red-hill-valley-program/reports/action-plan.pdf>)
2. The process that was proposed for making design changes was responsive to the environmental issues raised by the community and the government agencies and included all groups (supporters, opponents, and those who had no opinion).
3. The Stakeholder Consultation Program was extremely innovative as it utilized neutral facilitators, an education program for the stakeholders on the design and technical issues, and design of the public consultation program by the stakeholders. In addition, although the First Nations had not expressed an interest during the development of the process, the City continues to work diligently, patiently and in good faith to identify and address their concerns.
4. The development of a watershed plan to support the impact assessment work – the watershed plan was developed by over thirty stakeholders who met over several months to establish the existing

conditions in the watershed and the actions that should be taken to address the most pressing issues. This resulted in a better overall understanding of the impacts of the Expressway. In particular, the approach to storm water management (quality and quantity) was influenced by the understanding of the upstream impacts from urbanization. This process also resulted in several key stakeholders in the area with a better understanding of the issues in the watershed and an ability to participate in a more meaningful way in the impact assessment process for the Expressway design changes. The Red Hill Creek Watershed Action Plan won an honorary award from the Canadian Institute of Planners in 1999 for its innovative approach to planners and engineers working together.

5. As a result of the watershed plan studies, the Community Stakeholder Committee and public comments, the City carried out several additional studies that it had not intended to carry out. In particular, the archaeological conditions of approval from the 1985 EA Act approval had been cleared on the road corridor and no additional work was required. The City decided, however, to update the work to current standards. As a result approximately 13 additional sites were identified including an Iroquoian Village with longhouses that had been previously thought to have been destroyed. An extremely important site was found on the brow of the Niagara Escarpment that showed use by natives just after the glaciers had retreated 10-11,000 years ago. There are only four other sites in Ontario that relate to this Paleo-Indian era. In addition, the City has carried out several innovative studies for a municipal road project including air quality modeling, an air quality health risk assessment, a thermal impact study (impact to the temperature in the valley as a result of adding asphalt), and a study to determine the impact on flying squirrels (which are at their northern most range in this area). These studies were added to address the concerns raised by the public.
6. The natural channel stream design will cover 7 kilometres of urban creek and address the overall health of the creek in the valley as opposed to only those areas that are directly affected by the road. This is the largest urban creek restoration project in Canada if not North America. It is extremely complex given the upstream modifications to the stream system and the impact of urban runoff. It will result in a net gain in fish habitat and create a stream that functions as it should i.e. it will flood more often and it will contain more water on a regular basis and it will erode much less than it currently does. All of this will result in better habitat.
7. The storm water management system acknowledges the need to control the upstream discharges from the urbanized area following a storm. This results in less erosion to the creek and more natural flood events. The quality control will treat not only the road but also existing urbanized runoff adjacent to the Valley. This will result in zero impact to Hamilton Harbour as a result of the storm water runoff from the road.
8. The redesign of the connection to the QEW has significantly reduced the excavation needed in the abandoned landfill and minimized the impacts to two significant wetlands and ponds adjacent to the QEW.
9. The redesign of the Escarpment crossing has resulted in a more visually appealing cut and, through the use of a 220 metre viaduct at the base of the escarpment, a means for trails users and wildlife to cross under the Expressway in a way that minimizes the impact on the surrounding landscape.
10. Use of university graduate students and professors to develop study designs was instrumental in the Flying Squirrel study, as there is very little expertise available for this species. This has resulted in the graduate student being funded for valuable species research and publishing the results in refereed journals. The professor acted as a credible peer review for the study.

11. A Landscape Management Plan (LMP) has been developed for the entire valley area. It also includes an overall recreation master plan for the valley with improvements to the trail system. The LMP proposes an innovative approach to landscaping including:
 - a. Developing a contract management approach to obtaining the native plant materials that will be required. The First Nations and City staff will be heavily involved in this process.
 - b. Approaching the landscaping of the road corridor as a separate contracting process following the completion of the road and using the materials grown by contract. This is important as experience has shown that if the landscaping is carried out by sub contractors to the prime road contractor, it results in substandard and low quality plants and maintenance. The prime contractor will stabilize the corridor with herbaceous material.
 - c. Salvage of habitats within the road corridor that are needed for restoration in the creek corridor and in the creation of habitats outside the road corridor.
 - d. Recognition of heritage and cultural features through a consultative process with First Nations and other interested groups.
 - e. Identification of "Value Added" features that are not the responsibility of the Expressway project but are part of an overall plan that can be contributed to and protected by the project.
12. In order to ensure that the construction contracts reflect the environmental issues that need to be addressed, the City has produced an Environmental Management Plan and associated Environmental Protection Plans. The detailed monitoring and mitigation plans will form the basis for an Environmental Management Plan. During this period, the City will submit documents to government agencies that will enable them to secure work permits and approvals in a phased manner.
13. The environmental protection framework is based on an "anticipate and prevent" approach whereby potential environmental problems are identified in advance and addressed in a way that prevents or minimizes the impacts. However, it is recognized that not all possible environmental impacts can be predicted with absolute certainty. Unexpected events will occur. Therefore the plan sets out a Contingency and Emergency Response Plan to deal with these unexpected events.
14. The City hired an Environmental Coordinator to implement the Environmental Management Plan (EMP) and lead an environmental management team (consisting of several field inspectors). This is to ensure all of the environmental commitments for the Project are incorporated into the contracts and implemented pre, during and post construction as necessary, develop a tracking system for environmental compliance associated with the Project and work with the engineering team to review and incorporate environmental mitigation into construction contracts and associated drawings, to coordinate the scheduling and timing of same.
15. To ensure that those working on the project have the knowledge and skills to fulfil their responsibilities under this plan, a construction Training and Awareness Program will be implemented for Project team members, onsite consultants and any contractors on the project.
16. In addition to training, an effective communications program is important to keeping the project team and external stakeholders aware of the progress of the project and to provide opportunities for interaction with the project team. Therefore a Community Relations Program has also been developed supported by a website and newsletters, amongst other activities.
17. Summary documents have been produced that are easily understood by the community and government agencies. Although the technical reports are more traditional, these summary documents are important because they provide everyone with a synthesis of the project that is visually attractive and easily understandable. This required the planners to work with graphic designers to develop the reports.

18. Development of documents that trace the actions taken to ensure that the final project reflects the commitments made in the submission to the Ministry of the Environment. The following documents traced the actions taken:
- Red Hill Creek Watershed Action Plan - Compendium of Actions, October 1998
 - Red Hill Valley Project – Impact Assessment and Design Process Summary Report, July 2003
 - Red Hill Valley Project - Design Report (ongoing)
 - Red Hill Valley Project – Environmental Management Plan
 - Red Hill Valley Project – Environmental Protection Plans
 - Contingency and Emergency Response Plan
 - Maintenance Management Plan
- (Note: a complete list of the technical reports produced during the Impact Assessment and Design Process is found in Appendix B).
19. The City is committed to providing educational opportunities. There are many unique aspects to this project and it is an excellent opportunity to provide educational opportunities to the local schools, universities and community colleges as well as First Nations, City staff, and other government agencies

The City views the Project as an opportunity to gather some of the best environmental minds in the industry to create a program that balances transportation and ecological goals to the betterment of the City. Care for the environment remains an utmost priority and makes this Project “more than a road”.

Financial Implications Associated With the Initiative

There are several aspects of this project that have resulted in cost effectiveness:

- The natural channel design will result in a creek that has less maintenance over time than a system that uses more hard surfaces.
- The ability to construct a CSO pipe in the road corridor is more cost effective than the construction of three separate CSO tanks that would also take up additional land in the Red Hill Valley.
- The cuts and fill on the road are balanced as a result of the material that will be available from the escarpment crossing.
- The redesign of the QEW connection has resulted in significantly lower costs for excavation of landfill material.
- The reduction in interchange footprints and removal of basket weaves results in a cost reduction for road base and asphalt.

Overall Applicability to Transportation and the Need for the Concept to be Disseminated to Other TAC members and the Transportation Community as a Whole

The City of Hamilton is committed to building this road and believes that the majority of Hamiltonians also want this road built to support residential, industrial and commercial areas. Using innovative environmental planning and consultation techniques, state of the art technical approaches and being responsive to the issues raised has resulted in designing a project that has significantly reduced environmental impacts and has made a major contribution to several technical fields in particular, natural channel stream design, landscape management and

environmental impact assessment processes. The project has been a pioneer in air quality modeling, air quality health risk assessment and has contributed to the knowledge of the habitat and population of species such as the flying squirrel.

Despite significant community and regulatory hurdles, the City has shown that even a major road project like this can result in an environmentally sensitive design. There are several facets of this project that are applicable to the transportation community as a whole. In particular, the City has shown that it is extremely important to understand and implement an issues management approach on any project that is contentious. Most major transportation projects are contentious as impacts are inevitable. However, most projects tend to resolve only technical issues and fail to understand the importance of stakeholder input and conflict resolution. While it can be argued that this project had more than its fair share of contentious issues to deal with it can also be argued that this project would not have reached its current stage of development without using an innovative approach to all aspects of the project including use of the best expertise possible for each issue that had to be addressed and for all of the technical work.