SUBJECT: Queen Elizabeth Way Pedestrian Crossing (PW06109) - (City Wide)

RECOMMENDATION:

(a) That Public Works staff be directed to work with the City’s Purchasing Section to negotiate (under Policy 11) with the Ministry of Transportation’s existing Red Hill Valley Parkway, and Queen Elizabeth Way improvements contractor (Aecon Construction and Materials Limited) for a favourable price to add to MTO’s existing contract, the construction of a pedestrian bridge over the Queen Highway, connecting the Red Hill Valley Trails to the Lake Ontario waterfront trail.

(b) That staff be directed to further investigate an enhanced design alternative for the pedestrian bridge to have it also function as a signature gateway feature to the East end of Hamilton.

(c) That staff ensure that the investigation of an enhanced design alternative for a pedestrian bridge gateway feature does not delay construction of the pedestrian bridge and coordination of such with Ministry of Transportation works related to the Queen Elizabeth Way improvements, currently underway by Aecon.

(d) That staff be directed to investigate additional funding partners to help support an enhanced pedestrian bridge gateway feature.

(e) That staff report back to Council on any proposed increase to the current approved budget for an enhanced pedestrian bridge gateway feature, and related funding opportunities.

John Mater, C.E.T.
Acting General Manager
Public Works
EXECUTIVE SUMMARY:

In the 2005 Public Works capital budget, Council approved $150,000 to design a proposed pedestrian bridge over the Queen Elizabeth Way (QEW) in the vicinity of the Red Hill Valley Parkway (RHVP) and QEW interchange. Staff have been investigating the design and function of this proposed pedestrian connection over the QEW. In undertaking these investigations, staff identified an opportunity to enhance the proposed pedestrian bridge at its most visible location, which is over the most northern tip of the Brampton Street portion of the Rennie and Brampton Streets Landfill, in order to create a signature gateway feature to the east end of Hamilton.

The purpose of this report is to request Council direction for Staff to explore this unique opportunity for a gateway feature as an enhancement to the functional pedestrian bridge previously proposed. The strictly functional bridge design could be built for approximately $2.8M to $3.2M. The enhanced gateway feature design could be built for approximately $5.7M to $6.0M. Staff are prepared to investigate potential funding partners for the enhanced gateway feature design. Some examples of possible funding partners are: the Waterfront Regeneration Trust; Ministry of Transportation, and other Ministries within the province; the Hamilton Waterfront Trust; local industry; and the Hamilton Community Foundation.

Staff also requires direction regarding the coordination of construction works for the proposed pedestrian bridge with construction works under MTO’s existing contract with Aecon Construction and Materials Limited. Such coordination requires investigation in consultation with the City’s Purchasing Section. The goal of which would be to avoid any delay in the currently underway MTO construction works related to the highway improvements near the QEW and Red Hill Valley Parkway interchange, and to take advantage of potential cost savings.

The direction sought from this report is time sensitive to allow the bridge-pier construction to commence in February 2007, in conjunction with construction works that are already scheduled and underway. This requires that the pier design be finalized no later than November 2006.

BACKGROUND:

In 1996, the Regional Municipality of Hamilton-Wentworth requested an Exemption Order from the Ministry of Environment (MOE) (granted in 1997) to modify the approved alignment of the RHVP pursuant to finding the most appropriate location for its interchange at the QEW. The intent of the Region’s proposal was to improve public access to Lake Ontario, and to observe the original Environmental Assessment, which recommended improvements to a range of environmental elements associated with the RHVP.

The Exemption Order stipulated that pedestrian/cyclist access be re-examined and, where appropriate, access to the Bruce Trail, Red Hill Valley Trails, and other recreational sites be maintained. Specific locations identified in the Exemption Order included the pedestrian bridge over the QEW.

In December 2004, City Council developed a strategic goal for the creation of a pedestrian link over the QEW to connect the residential community of East Hamilton with the popular Hamilton Beach Waterfront Trail and Hamilton Beach area along Lake
Ontario. A budget of $150,000 was provided for preliminary design in 2005, and an estimate of $1.3M was forecast for construction of a strictly functional pedestrian bridge over the QEW. However, a recent review of other projects of this scope suggests that a budget in the range of $2.8M to $3.2M would be more probable for a strictly functional pedestrian bridge.

The Hamilton Trails Master Plan also supports the need for a pedestrian/cyclist connection from the east Hamilton neighbourhood to the Lake Ontario waterfront. During the spring of 2005, five public information centres on the Hamilton Trails Master Plan were held to consult with the public regarding potential recreational trail alignments and connections. The QEW barrier was identified as a limiting factor to the development of trail connections to the Hamilton Beach Waterfront Trail and to the completion of a trail network in this neighbourhood.

**Planning and Economic Development Department’s Gateway Study**

In 2001 Council identified the need to install civic gateway features at major highway entrances to the City. The intent was to develop a sense of entry into the City by enhancing these strategic locations in a way that would present a positive image to its citizens and visitors. A budget amount of $100,000 was allocated from the capital budget to study the issue and develop designs. This project is currently being managed by staff of the Planning and Economic Development Department. The Civic Gateway Design Study commenced in 2002 with a Terms of Reference for the design of gateway features at five major entry points to the City. A three phase process was identified as follows:

- Phase 1: site identification;
- Phase 2: develop design options for each site; and
- Phase 3: prepare cost estimates, and an implementation strategy for each site.

A consultant was retained in 2003 and the first phase of the study was completed in June 2004. This first phase identified a number of alternative locations and recommended preferred sites for gateway features based on MTO requirements and sightlines along the 400 series highways and Highway number 6 North. The general locations of these five sites are:

1. QEW and Fifty Road;
2. Highway 403 and Highway 6 interchange;
3. Highway 6 and Maddaugh Road;
4. Highway 403 and Highway 52 interchange; and
5. QEW at the new Burlington Street/Red Hill Valley Parkway/Centennial Parkway interchange.

In June 2005 a second consultant was retained by Community Planning and Design to complete phases 2 and 3 of the study. The RHVP and QEW interchange gateway locations, was not included in their consultant’s scope of work due to the current QEW and RHVP construction works. Community Planning and Design staff have, however, been meeting with the Red Hill Project Team to determine the most appropriate location and design for the feature.

An example of an identifiable gateway feature in Hamilton that grew out of necessity is the **High-Level Bridge**, which was borne of Thomas McQuesten’s vision for this major
entrance to the City. This precedent is captured in the existing Hamilton “H” logo which references Hamilton’s numerous vital elements that span the City, engage key landscape features, and create linkages between communities (“many communities bridged together”). Due to its location, the QEW pedestrian crossing will be perceived as a gateway to the City. The City has the opportunity to take the functional requirements of a pedestrian bridge and create a signature gateway feature, planned in the spirit of another significant gateway - the High-Level Bridge. The design of this critical pedestrian link could be elevated to an elegant, memorable gateway feature to be viewed daily by tens of thousands of motorists travelling under it along the QEW. Images of gateway feature precedents are provided in Appendix E.

This report is submitted to seek Council approval for staff to investigate the enhancement of the purely functional pedestrian bridge design to gateway feature bridge design, which will also serve to connect the Red Hill Valley Trails to the Lake Ontario waterfront. The trail alignment will provide a barrier-free (slope < 1:20) route from the parking area off Brampton Street within the Works Yard of the former Rennie and Brampton Streets Landfill, over the QEW to the Waterfront Trail. This alignment takes advantage of the topography of the former Brampton Street landfill to meet an elevated crossing over the QEW. Original planning in 1997 identified this crossing as strictly functional. Given current City of Hamilton policies for Civic Gateways, an enhanced bridge design could be pursued. The existing QEW / RHVP interchange contract includes the installation of a pedestrian bridge support pier in the highway median. Construction of the pedestrian bridge at the same time would, therefore, be time and cost effective.

The direction sought from this report is time sensitive to allow the bridge-pier construction to commence in February 2007, in conjunction with construction works that are already scheduled and underway. This requires that the pier design be finalized no later than November 2006.

**ANALYSIS/RATIONALE:***

Design Work to Date:

**Original Trail Alignment (Appendix A)**
The original proposed connection of the Red Hill Valley trail alignment over the QEW, followed the alignment of Brampton Street and crossed the Red Hill Creek to the east side. This crossing required the use of an existing maintenance bridge over the Red Hill Creek that had been used frequently by the public to connect the local neighbourhood to the waterfront. As part of the works required by Waste Management to remediate the Rennie and Brampton Streets Landfill, a realignment of the Red Hill Creek and widening of the floodplain necessitated the replacement of this crossing. The original (2001) budget for this crossing replacement was $150,000. Recent analysis has revealed this amount to be insufficient due to the widening of the flood plain, and subsequently increased bridge span. Funding received by the Waste Management Section of Public Works includes $400,000 that may be applied to a preferred crossing alignment. This alignment also required an additional smaller bridge along the old Nash Road allowance. This was required by MTO to regulate water flow to the Red Hill Marsh. This second crossing along the Nash Road allowance would be the responsibility of MTO. The alignment continued parallel, and directly adjacent to the traffic control barriers of
the QEW leading to the proposed QEW crossing point established by the MTO. This alignment approach required 2 creek crossings and several grade changes that would force pedestrians into a hostile environment adjacent to high speed traffic. To cross the QEW at an 8.5 metre height (which is the clearance required by MTO) from a stair/landing structure, or other ramp structure directly adjacent to the QEW, would preclude a barrier-free route. A slope of less than 1:20 would comply with the Barrier-Free Design Guidelines document (Report PW06056/FCS06045) approved on May 24, 2006. Furthermore, this functional crossing design would require an additional bridge pier within the Red Hill Marsh wetland complex creating a long term impact to the wetland community.

Preferred Trail Alignment (Appendix B)

The proposed pedestrian bridge would be located between the RHVP and Burlington Street interchanges with the QEW, over the QEW. The preferred alignment utilizes the redesign of the former Rennie and Brampton Streets Landfill site, taking advantage of the trail loop that accesses the top of the Brampton Street landfill adjacent to the Red Hill Marsh. Grades from the parking area to the top of the Brampton Street landfill provide a barrier-free route that can be extended across the marsh in the form of a bridge structure and ramp from the North End of the Brampton Street landfill northwards towards the Waterfront Trail. The preferred alignment allows for the elimination of the two proposed smaller bridge crossings of the Red Hill Creek and accommodates barrier-free access as required by the Barrier-Free Guidelines. The Barrier-Free Guidelines state that City projects shall adhere, where possible, to various principles for accessibility including exterior pedestrian routes that are open to the public. This was not attained with the proposed original trail alignment, shown in Appendix A.

The construction of a crossing from the former Brampton Street landfill site would require 3 bridge support piers: one located at the toe of the landfill slope; one located adjacent to the QEW right of way; and one located within the centre median of the QEW. The northern portion of the alignment can be accommodated by a retaining wall system and an at-grade trail alignment, to achieve barrier-free access to the Waterfront Trail at Lake Ontario. Installation of the bridge piers would require temporary construction access within the Red Hill Marsh. The Red Hill Marsh rehabilitation would continue during the existing Aecon contract period with MTO until the summer of 2009. To minimize disturbance to wetland plant communities, bridge pier construction should ideally occur prior to 2009 when rehabilitation works are in progress, and should be coordinated with pier construction. Construction of bridge piers after 2009 could negatively impact plant material in the Red Hill Marsh, and therefore, incur additional project costs due to rehabilitation requirements.

The strictly functional pedestrian crossing includes a two span pre-fabricated steel truss bridge. The construction of the centre pedestrian bridge pier, (that is the placing of a supportive pier in the open area in the centre of the QEW) has been included in the MTO contract for the construction of the QEW/RHVP interchange. The current construction contract runs until summer 2009. During this time, the existing contractor will be responsible for traffic controls on the QEW as part of the placement of the pier. If the bridge construction were to occur after the close of the contract 2009, traffic controls costs would occur for a second time. The traffic control cost is projected as a $100,000 increase to bridge construction costs. Consultation and special arrangements will be
required with our Financial Services Division to allow the existing contractor the first option to bid on construction of the pedestrian bridge as an extension to their existing contract with the MTO. The pedestrian bridge over the QEW will require an extension or second bridge structure to connect on the south side of the highway with the most northern tip of the Brampton Street portion of the former Rennie and Brampton Streets Landfill. Both structures should be designed and constructed with a consistent style in order to achieve a strong design statement. It is this second pedestrian bridge section, which connects to the Brampton Street portion of the former Rennie and Brampton Streets landfill that the municipality has the opportunity to enhance as a gateway feature.

For the purposes of this report, the alignment of the new bridge is considered north-south, north being towards Lake Ontario. In addition to the section of the pedestrian bridge that will cross the QEW, the Red Hill Creek pedestrian bridge section will span the creek as well as the approximate 40 metres of marsh between the creek and the QEW.

The preferred option alignment achieves the project goals listed below.

Goals:
- Connect Red Hill Valley Trail and surrounding neighbourhoods to the Waterfront Trail with a pedestrian bridge over the QEW
- Provide an accessible link to the waterfront with a maximum 1:20 slope (barrier-free access), as per the recently approved Barrier-Free Guidelines (Report PW06056/FCS06045).
- Create a gateway feature visible to vehicles traveling both directions along the QEW
- Provide a positive visual asset to the east end of Hamilton (Gateway Feature)
- Ensure a design solution that is fiscally responsible
- Ensure a design that is aesthetically consistent across the entire bridge
- Investigate options for illuminating this asset, with consideration for potential impact on wildlife
- Investigate opportunities for interpretive signage.

Several designs for the pedestrian bridge were explored in order to identify the full range of potential structural concepts for this site. A preliminary study has commenced, which has taken the following list of items into consideration.

- Connection locations from the Rennie and Brampton Streets Landfill to the QEW
- Maximum total distance from North End of the Brampton Street landfill to QEW to be between 110 to 130 metres
- Nine (9) structure styles were reviewed, 3 were eliminated due to site constraints
- Six (6) alternatives compared
- Wetland crossing impacts
- Crossing of the QEW
- Van Wagners Pond and old rail line connections to the north of the QEW

Staff are seeking Council direction to investigate opportunities for designing the section of the proposed pedestrian bridge from the Rennie and Brampton Streets Landfill to the south edge of the QEW pedestrian bridge crossing, as a gateway or signature feature of the municipality. A preferred design concept for this bridge section has been included as
Appendix D, which illustrates an arch form as the gateway bridge statement. This concept achieves the goal of a Gateway Feature while providing a safe pedestrian/cyclist connection to the Waterfront Trail.

The section of the pedestrian bridge over the QEW itself must be a simple truss solution, as required by MTO. However, MTO has agreed to work with the City to explore opportunities for a gateway bridge within the section of the pedestrian bridge, where it does not cross the QEW itself. It is Public Works’ intention to ensure that the design of the gateway pedestrian bridge section and the pedestrian bridge section over the QEW, are unified in their design elements and compliment each other.

Staff are targeting the end of the 2006 as a deadline to confirm potential funding partners for the enhanced gateway feature bridge.

**ALTERNATIVES FOR CONSIDERATION:**

**Preferred Alignment - Strictly Functional Pedestrian Crossing (Appendix C)**

The pedestrian bridge can be designed as a simple truss structure which would not include a gateway design component. The strictly functional pedestrian crossing would provide barrier-free access for east Hamilton residents over the QEW to the Waterfront Trail. The linear, functional crossing style would require an additional bridge support pier to be constructed within the Red Hill Marsh, creating long term negative impacts to the wetland plant community. The bridge segment crossing the QEW could be constructed under the existing MTO contract to take advantage of existing construction timelines. Additional geotechnical work would be required to confirm conditions for pier locations. Consequently, construction costs are preliminary. The estimated cost for this alternative is $2.8M to $3.2M.

**Preferred Alignment - Enhanced “Gateway” Pedestrian Crossing (Appendix D)**

Staff have completed a preliminary review of design concepts to find that a modified arch-style structure would create a signature gateway feature for Hamilton’s east end, while providing barrier-free pedestrian access over the QEW to the Waterfront Trail. Since one less bridge pier is needed, this would mitigate any long term impact to the Red Hill Marsh plant community. This alternative would require negotiation with MTO’s existing RHVP and QEW contractor (Aecon) in order to take advantage of the existing construction timeline. Additional geotechnical work will be required to confirm conditions for pier locations. The cost for the enhanced pedestrian crossing alternative is estimated at $5.7M to $6M. Additional funding will be required, and staff will investigate funding partners. It should be noted that the proposed width of the pedestrian bridge is 3.0 metres. The Trails Master Plan identifies an ideal width of 4.0 metres; however, this would add approximately $1M to the cost of the bridge. A 3.0 metre width provides twice the width of a standard 1.5 metre wide sidewalk.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

Public Works has an existing functional design budget of $150,000 and a forecast budget of an additional $1,350,000 in 2007, which was identified to Council in the 2005 Capital Budget program.
A summary of estimated costs for each design option are presented in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Functional Design</th>
<th>Enhanced Gateway Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>$0.15M</td>
<td>$0.15M</td>
</tr>
<tr>
<td>Engineering</td>
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<tr>
<td>Construction</td>
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<td>$4.6M</td>
</tr>
<tr>
<td>Contingencies</td>
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<td>(15%) $0.7M</td>
</tr>
<tr>
<td>Total</td>
<td>$2.8M to $3.2M</td>
<td>$5.7M to $6.0M</td>
</tr>
</tbody>
</table>

There is no land purchase requirement.

If Council directs staff to investigate opportunities to design the section of the pedestrian bridge on the south side of the QEW as a gateway feature, staff will seek out funding partners and report back to Council.

Potential funding partners include: MTO (who had previously committed to construct a pedestrian crossing over the Red Hill Marsh), and other Ministries within the province; the Waterfront Regeneration Trust; the Hamilton Waterfront Trust; local industry; and the Hamilton Community Foundation. Waste Management had also previously committed to the construction of a pedestrian bridge over the Red Hill Creek, estimated at $400,000. The Red Hill Valley project office would project-lead the investigation of funding partners to determine the feasibility of a gateway program, within the MTO’s timeline for construction of the interchange.

**POLICIES AFFECTING PROPOSAL:**

Council approved the City of Hamilton Barrier-Free Design Guidelines document (Report PW06056/FCS06045) on May 24, 2006. This document outlines the requirement for City projects to adhere, where possible, to various principles for accessibility, including exterior pedestrian routes. The Barrier-Free Design Guidelines 2006 is intended for use by all Departments and Divisions of the City of Hamilton; involved in the planning, design, construction, and maintenance of physical facilities, including buildings, parks, and open spaces, infrastructure, and any other space that is to be open and fully accessible to the public.” (page 1, Section 1.0).

The document states that for:

“Grade and elevation changes shall, wherever possible, not exceed a 1:20 slope on pedestrian routes; shall, wherever possible, be minimized in order to maintain a level path of travel; shall provide *accessible ramps* close to where an elevation change of 1:20 or greater may not be avoided…” (page 33, Section 5.1.5).

An accessible ramp is defined as: “A continuous unobstructed path connection accessible elements and spaces…” (page 8).

The design requirements for ramps include:

“Any part of an accessible route with a slope steeper than 1:25 shall be considered a ramp and comply with this section. Accessible ramps shall be on an accessible route complying with *Section 5.1.4 Accessible Routes, Paths and Corridors*. The running slope shall have a maximum slope of 1:20 and the maximum horizontal length between landings shall not exceed 9 m (29 ft. 6 in.)” (page 57, Section 5.1.12).
The Community Services, Parks, Culture and Recreation Master Plan indicate Fifteen Strategic Directions that were approved by Council on June 18, 2002 in Report CS020050. One of the Strategic Directions indicated, “Increase public access to the waterfront”. The construction of a barrier-free pedestrian/cyclist crossing over the QEW would support this strategic direction.

**Vision 2020**

The draft Hamilton Trails Master Plan 2006 is intended to create a multi-purpose system that, wherever practical, caters to the broadest range of users possible. The system is intended to embrace people of varied levels of health, mobility, skill, age, and interests. Trails connect residential, employment, commercial, and institutional areas. These connections contribute to attainment of the City’s Municipal land use, sustainable development, transportation, and economic development goals, and help implement Vision 2020.

**Trails Master Plan Goals:**

- Connect significant environmental, cultural features, and parks while preserving their natural heritage values and ecological functions, enhancing their public appreciation. The QEW crossing connects the Red Hill Valley with Hamilton's Waterfront and the well used Waterfront Trail. The City of Hamilton’s Official Plan Review 2005 goals permit recreational uses within the Natural Heritage System where they do not impact natural heritage values, and where they do conserve the natural beauty, and distinctive character of Hamilton's landscape.

- Provide a safe cycling and pedestrian environment. Multi-purpose trails accommodate multiple recreational activities including cycling, inline skating, running, and walking. These trails are often within a common right of way. Congestion along trails can be mitigated with the use of appropriate trail widths.

- Promote physical activity, and healthy lifestyles. The American Journal of Health in 2003 identified that integrating physical activity into daily life is one of the 10 most important health challenges we face.

- Connect Hamilton’s trails to larger Provincial trail systems such as the Bruce Trail, the Escarpment Rail Trail, and the Lake Ontario Waterfront Trail.

The Ontario Trails Strategy connects with the long term Provincial Strategy which establishes direction for planning, managing, promoting, and using trails in Ontario.

**Purchasing Policy**

Purchasing Policy Section 4.11, Policy for Negotiations – Single Source, subsection (f) allows for City staff to enter into negotiations when a single source for the supply of a particular Good and/or Service is recommended due to its increased cost effectiveness and/or benefit for the City. For any Single Source contract which is greater than $250,000 the client department must receive Council approval prior to engaging in any negotiation with a vendor. In keeping with this policy, Public Works staff recommends negotiating with existing RHVP and QEW contractor, Aecon, for a favourable price to construct the QEW crossing. The City would, therefore, realize various benefits including increased cost effectiveness and timely construction completion.
CITY STRATEGIC COMMITMENT:

By evaluating the “Triple Bottom Line”, (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

Community Well-Being is enhanced. ☑ Yes ☐ No
Participation in community life is accessible to all Hamiltonians.
The pedestrian link across the QEW restores the 1958 precedent of providing public access to Hamilton's waterfront. The 1958 bridge provided access across the busy roadway and alleviated traffic congestion to Burlington Beach Amusement Park.

Environmental Well-Being is enhanced. ☑ Yes ☐ No
A sustainable transportation network provides many options for people and goods movement; vehicle-dependency is reduced.
The QEW crossing will provide a pedestrian route to East Hamilton's waterfront between Gray's Road and Woodward Avenue.

Economic Well-Being is enhanced. ☑ Yes ☐ No
Hamilton's high-quality environmental amenities are maintained and enhanced.
The pedestrian link will provide access to the Red Hill Valley and the 7 kilometre interpretive trail from the Waterfront trail, therefore, creating a regional connection.

Does the option you are recommending create value across all three bottom lines? ☑ Yes ☐ No
The QEW crossing provides value across the triple bottom line.

Do the options you are recommending make Hamilton a City of choice for high performance public servants? ☐ Yes ☑ No
Queen Elizabeth Way Pedestrian Crossing

WASTE MANAGEMENT CROSSING REHABILITATION OF LANDFILL TO INCLUDE TRAIL SYSTEM

MTO CROSSING INITIATIVE

CONNECTION TO WATERFRONT TRAIL

RED HILL VALLEY PROJECT CROSSING INITIATIVE INCLUDING CONTRIBUTION FROM WASTE MANAGEMENT INCLUDES GATEWAY COMPONENT

Capital Planning and Implementation,
Open Space Development and Park Planning

Hamilton Public Works

General Manager
Scott Stewart, C.E.T.

QEW Pedestrian Crossing
Preferred Trail Alignment

Appendix B
June 2006
N.T.S.
**Subject:** Queen Elizabeth Way Pedestrian Crossing

**Location:** McCoy Drive Pedestrian Bridge

- **Name:** McCoy Drive Pedestrian Bridge
- **Location:** Aurora, Illinois
- **Year Constructed:** 2002
- **Type:** Prefabricated Truss
- **Length:** 40 m
- **Width:** 3.0 m
- **Cost (USD):** $383,000
- **Cost (CAD):** $440,000
- **Unit Cost (CAD/m²):** $3,700 /m²

**Estimated Costs in 2006 Canadian Dollars**

- **Total:** $490,000
- **Unit Price:** $4,100 /m²

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**Name:** San Joaquin Bike/Pedestrian Bridge

- **Location:** San Joaquin, California
- **Year Constructed:** 2004
- **Type:** Prefabricated Truss
- **Length:** 61 m
- **Width:** Unknown
- **Cost (USD):** $1,500,000
- **Cost (CAD):** $1,700,000
- **Unit Cost (CAD/m²):** Unknown

**Estimated Costs in 2006 Canadian Dollars**

- **Total:** $1,800,000
- **Unit Price:** Unknown

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**Example Simple Truss Structure Design**
Simulated view of pedestrian crossing and tilted arch as seen from QEW traveling Eastbound to Niagara

Gateway arch facing North

Simulated view crossing the arch

Capital Planning and implementation,
Open Space Development and Park Planning

Hamilton Public Works

General Manager
Scott Stewart, C.E.T.

Appendix D
June 2006
N.T.S.
New Icon for Hamilton

Hamilton has a history of planned Gateways such as the north-west entrance of the City at the "High-Level Bridge" under the direction of Thomas McQuesten. The precedent is captured in the existing Hamilton "H" logo referencing the numerous elements throughout the Hamilton area that span key parts of the city, engage key landscape features, and create links between communities ("many communities bridged together").

T.B. McQuesten - York Boulevard High Level Bridge
Hamilton, Ontario

Examples of arch style pedestrian crossings

Capital Planning and Implementation,
Open Space Development and Park Planning

QEW Pedestrian Crossing
Gateway Precedents

Appendix E
June 2006
N.T.S.