

***F.G. GARDINER EXPRESSWAY DISMANTLING PROJECT  
FROM THE DON ROADWAY TO LESLIE STREET***

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## Abstract

The F.G. Gardiner Expressway is an elevated highway built along the waterfront of the City of Toronto almost 40 years ago. This Expressway was planned to extend as the Scarborough Expressway, however in the early 1970's planning philosophy was changed by citizen activism and the ambitious expressway plan was abandoned. In the 1990's the City conducted a life cycle cost analysis and environmental assessment on the most easterly 1.4km of the elevated expressway and concluded that the best solution was to dismantle this section.

The dismantling project commenced in the fall of 1999 and will be completed in the spring of 2003. The scope of the work consisted of the demolition of 1.4km of the expressway and replacing it with new ramp access to and from the remaining section of the expressway and a reconstructed section of Lake Shore Boulevard East. The boulevard included walking and bike paths, a pedestrian bridge over the Don River, landscaping, streetscaping and public art components.

The proposed paper will document how the project team managed the engineering challenges of the project, including keeping to the schedule, rehabilitation of columns, the construction of the new ramp, construction methodologies used and recycling of material.

The actual dismantling and construction had a significant impact on the community. The proposed paper will describe how the project team managed public consultation, these social and environmental impacts and various challenges including maintaining access to the Gardiner Expressway, noise and dust concerns and dealing with contaminated soils in the boulevard.

## **INTRODUCTION**

The dismantling of the F.G. Gardiner Expressway cost and the construction of the replacement presented numerous engineering challenges. This paper will document these challenges and describe how they were met and managed by the project team.

The dismantling and construction also had a significant impact on the community. The project was extremely controversial because the local Councillors and public were concerned about the effect of construction on the local industry, traffic congestion, vibration and dust, the effect on cyclists in the corridor and the disturbance of property in the expressway corridor known to have a significant soil contamination. This paper will document these social and environmental concerns and impacts and describe how the project team dealt with them.

The paper will describe how this challenging transportation project has transformed the community it passes through.

## **BACKGROUND**

The F.G. Gardiner Expressway is an elevated highway built along the waterfront of the City of Toronto. Built almost 40 years ago, it was the component of an expressway grid planned to service the growing metropolis. This expressway was planned to extend from the Humber River in the west to the Scarborough Expressway and East Metro Freeway 20 km to the east. In the late 1960's and early 1970's however, planning philosophy was changed by citizen activism and the ambitious expressway plan for Toronto was abandoned in the face of public opposition.

The elevated portion of F.G. Gardiner Expressway which began at Dufferin Street had been terminated at Leslie Street with a pair of ramps providing the transition from the six lane elevated expressway to a four lane arterial road.

In the early 1990's most easterly 1.4 km of the elevated expressway leading to the ramps at Leslie Street was identified as requiring significant rehabilitation. In view of the relatively low traffic demand and the high cost of the repairs, the City conducted planning studies including a life cycle cost analysis and environmental assessment. The City concluded, on the basis of long-term savings and urban design considerations that the best solution was to dismantle the elevated expressway from the Don River to Leslie Street.

## **SCOPE OF WORK**

City of Toronto Council authorization to proceed with the dismantling project was received on June 9, 1999 with a budget of \$41,880,000.

The main scope of the work consisted of the demolition of 1.4 km of the expressway and replacing it with new ramp access to and from the remaining section of the expressway and the reconstruction of a section of Lake Shore Boulevard East.

The new ramp from the foot of Bouchette Street was designed for two lanes in each direction to and from the remaining expressway extending to the west from the Don Roadway.

The reconstruction of Lake Shore Boulevard East was from the Don Roadway in the west, with a slight horizontal realignment to accommodate the new ramp, to Leslie Street in the east.

The work required the relocation of the existing rail line located in the median of Lake Shore Boulevard East and a number of spur lines crossing Lake Shore Boulevard East. In addition, the work required relocation of gas, hydro and sewer utilities, as well as the reconstruction of a watermain from Logan Avenue to Carlaw Avenue.

The plan approved by City Council called for the boulevard on Lake Shore Boulevard East on both sides to have sidewalks, streetscaping and substantial landscaping. As well, a bike path was to be located along the entire north boulevard, from Leslie Street to the Don Roadway including a bike/pedestrian bridge over the Don River on the west side of the Don Roadway.

There were also public art components included in the plan. This artwork consisted of features in the new ramp structure and an in-ground cast bronze mosaic to be located in the northwest corner of Lakeshore Boulevard East and Leslie Street. Also, twenty of the existing columns were to be retained with photo-etched panels and large granite boulders with inscribed poems were to be located along the north boulevard.

The aerial view below shows the F.G. Gardiner Expressway before dismantling.



## PROJECT TEAM

The challenges of this project were met and overcome through the joint efforts of the City of Toronto staff, its consultants, sub-consultants and contractors. The principal players of the project team were:

Owner:	City of Toronto Works & Emergency Services Department
Engineering Consultants:	USR Cole Sherman & Associates Limited Morris Hershfield Limited Shaheen & Peaker Limited Lura Consultants
Urban Design Consultants:	DuToit Allsopp Hillier
Artist:	John MacKinnon
Contractors:	Grascan Construction Ltd./ Torbridge Construction Ltd. (main contract)  North American Construction Limited (bike/pedestrian bridge)

## ENGINEERING CHALLENGES

The project team was faced with a number of constraints and challenges in the construction of the new ramp to the remaining section of the expressway, the rehabilitation of remaining sections of the expressway and the actual demolition of the existing structure. The following were the main aspects of these engineering challenges:

### 1. Construction of Ramp Structure

The new four-lane ramp structure consists of a continuous 200m long tangential section from the east abutment to the existing structure, approximately 9m above ground.

In order to fulfill the commitment of maintaining access to and from the remaining Gardiner Expressway at all times, the alignment of the new ramp structure was shifted approximately 10m to the south. This enabled the project team to maintain one lane of traffic in each direction on the existing Gardiner Expressway structure, while the south section of the new ramp was being constructed. Once the south section of the new ramp was completed, one lane of traffic in each direction, to and from the remaining section of the expressway was diverted to the new ramp structure so that main demolition work on the Gardiner could proceed. This schedule and staging also required that the full width of the new ramp approaches and supports be partially constructed in the confined space

under the existing structure and between existing piers. The picture below shows the completed south side of the ramp structure.



The shifting of the alignment of the new ramp structure to the south required the matching of the 10m displacement between the new ramp and the remaining expressway. Rather than fabricating costly new girders to achieve this, a 116m section of the existing deck was retrofitted to accommodate the required reverse curve profile. To achieve this, the existing girders were modified with raised T-sections along the top girders, as shown in the picture below. This innovative design work was done by Morrison Hershfield Limited and contributed to completing the south side of the ramp structure on schedule.



## **2. Rehabilitation of Remaining Sections of Expressway**

The scope of work of the project included the rehabilitation of the concrete on the bents, columns and the deck of a section of the remaining expressway extending to the west. This work was carried out at the same time that the new ramp construction was done.

In preparation for the rehabilitation work, all delaminated concrete and concrete that was no longer bonded to the reinforcing steel on the existing bents and columns was removed. The surfaces were then blast cleaned and coated with a cement-rich bonding slurry.

The reinforcing steel was then replaced, as required and retied to the existing reinforcing steel. Galvanized wire mesh and anchors were then placed over the surfaces. Silica fume concrete was then placed on the surfaces to provide the required cover over the reinforcing steel. The concrete was then cured and subsequently sealed with a primer and pigmented topcoat.

The picture below shows an existing column being rehabilitated.



## **3. Structural Elements for Public Art**

The relief in the abutment and retaining walls contains public artwork. This consists of rectangular panels, which is meant to depict the slicing of the dismantled columns of the expressway.

In addition, the north edge of the rehabilitated deck where the new ramp meets it, is cantilevered out due to the shifting of the alignment for the new ramp. The exposed

“trellis” like steel work of this cantilevered section, which juts out to the north of the main deck structure, has been retained as an architectural feature for the project.

Also, one of the public art components was to retain twenty of the existing columns to the east of the project. Some of these columns are to have a series of photo etched stainless steel panels depicting the industrial and residential history of the area, including the demolition of the expressway. The concrete of the existing columns that were retained, was in poor condition and had to be rehabilitated.

The pictures below show the relief work and the columns that were retained.



#### **4. Pedestrian Bridge**

The project included a new 2.5 km long bike and pedestrian path on the north side of Lakeshore Boulevard. This path provides a link for the existing bike trails in the Eastern Beaches and the existing trails leading to downtown Toronto, located east of the Don River. To complete the link, a bike/pedestrian bridge had to be installed over the Don River on the west side of the Don Roadway.

The bridge design consisted of a 40m long prefabricated steel truss structure to be placed on the bridge abutments supported on H-piles driven into the shale bedrock.

The structural components of the truss was fabricated from Hollow Section Steel sections of self-weathering steel. The bridge deck consists of cast-in-place concrete with steel pipe handrails, which were welded in place after the installation of the bridge.

Algonquin Bridge Company, under contract to North American Construction Limited, fabricated and erected the bridge. The steel truss was delivered on site and set in place with two telescopic cranes and a track mounted excavator. The structure was launched from the west bank of the river, supported by a crane and pushed by the excavator. The second crane, on the east side of the river was attached to the structure at the halfway point of the launch. The structure was then fully lifted by the two cranes and manoeuvred onto the abutments. The installation was completed in July of 2000.



The pictures below show the installation of the steel truss and the completed bike/pedestrian bridge.



The mouth of the Don River at this location could be realigned as part of the Toronto Portlands redevelopment initiative. If this does happen the 40m steel truss could be moved intact to a new location.

## **5. Methodology Used for Dismantling**

Conventional crawler-mounted breakers or hoe rams were used by the sub-contractor, Core Excavating Ltd. to demolish the elevated deck structure, the concrete beams and the columns. Rubble from the operation was dropped onto the closed Lakeshore Boulevard below.

The majority of the steel support girders were lifted onto tractor-trailers and removed off site. Where tractor-trailer access was not feasible due to the demolition staging, girders were dropped onto the roadway below. A 1.5m thick bed of rubble and reinforcing steel cushioned the impact.

The manpower and equipment used for normal production operations consisted of the following:

- Two breakers (hoe rams) with capacity ranges between 5,000 and 11,000 ft-lbs mounted on excavators with minimum operating weights of up to 45,000 kg;
- a crawler-mounted concrete and steel shear;
- an excavator with a 1.1 cubic metre bucket and two bobcats for loading debris;
- 7 triaxle trucks for removal of debris off site;
- a sweeper, flusher, water truck and salter for dust control and
- a support crew consisting of two welders, two flagmen and two labourers.

Maximum production occurred during demolition above signalized intersections on Lakeshore Boulevard. The work was completed over weekends with traffic closures in place on the north/south roads. Under these conditions the equipment and manpower mobilized was approximately twice the amount used for normal production.

## **6. Recycling of Material**

Concrete rubble from the operation was dropped onto the closed Lakeshore Boulevard and hauled to crushers for reuse as granular road base material. Reinforcing steel was separated with use of crawler-mounted concrete and steel shears and sold for scrap.

The welded plate girders from Gardiner were mostly sold as scrap to steel mills. Reuse of the girders for a structural purpose was cost prohibitive. All original welds required certification as to structural integrity.

A local film studio under construction at the time did, however, purchase about 9 girders. The contractor has also kept about 20 girders for other, similar, future uses.

The material reused from demolition of the east Gardiner consisted of:

- 40,000 tonnes of crushed concrete;
- 14,000 tonnes of welded plate girder and
- 3,000 tonnes of reinforcing steel.

## **7. Tight Schedule for Completion of Project**

### **• Schedule Responded to Stakeholders Concerns**

The members of the public and the Councillors who did not support the dismantling project, put pressure on the team to minimize traffic disruption and construction effects by keeping the construction time as short as possible.

To meet their expectations, a tight construction schedule had to be maintained in order to complete each phase of the project within committed time frames.

Preliminary work on the preparation of the main detour along Commissioners Street, a parallel road to the south, and some rail relocation work that was necessary for the construction of the new ramp commenced in the fall of 1999.

The existing film studios along Lake Shore Boulevard had a requirement that the main demolition work only be carried out in the winter months, when film shoots were at a minimum, and so this demolition work was scheduled for the winter of 2000-2001. Another condition, imposed by City Council in order to minimize traffic congestion, was that access to and from the remaining Gardiner Expressway had to be maintained at all times. To comply with these conditions, the construction of the south side of the new ramp had to be completed in 2000.

### **• Consultants Prepared Designs and Tender Documents in Under 5 Months**

In order to meet this completion deadline, the main contract, which included the construction of the south side of the new ramp, the demolition of the expressway

structure and the reconstruction of Lake Shore Boulevard, had to be tendered and awarded in early 2000. To achieve this the consultant team of URS Cole Sherman & Associates and Morrison Hershfield Limited had to complete the detailed design and the tender document preparation for the project between September of 2000 and January of 2001. The consultants were successful in meeting this extremely tight deadline. Tenders closed in early March, 2000 and on April 11, 12 and 13, 2000, Council awarded the main Dismantling Contract to Grascan Construction Ltd./Torbridge Construction Ltd.

- **Delays in the Field Added Pressure to Tight Schedule**

In the spring of 2000, there was a concrete strike that caused a delay in pouring the footings for the new ramp. Also, during the excavation for the footings for the ramp, the groundwater was found to be contaminated with hydrocarbons. This contaminated water had to be removed with proper environmental and safety procedures, which caused further delays.

After the concrete strike and the removal of the contaminated water, in order to keep on schedule, the project team decided to accelerate this work with weekend shift work.

The south side of the ramp, including asphaltting, was completed just on time and opened to one lane of traffic in each direction, in December, 2000 so that the main demolition work could commence.

In January 2001, when the main demolition of the deck commenced, there was a concern that the dust from breaking the concrete deck of the Gardiner Expressway may be contaminated with lead. Work was stopped while tests were taken, causing a delay in the work. In addition to this, the film studios had an unusually busy winter in shooting films. This caused further delays, as it had been agreed that work adjacent to the film studios would not proceed during film shoots.

Despite these delays and due to the co-operative efforts of the project team, the main demolition was completed on schedule in April, 2001.

- **Contractor Used Innovative Techniques to Maintain Schedule**

During the actual demolition, the contractor also made a considerable contribution to completing this phase of work within the limited time frame. This was achieved by using hoe rams to break up the concrete deck and the concrete columns and by dropping the steel girders onto the ground below the expressway instead of lifting each of the girders down with cranes.

## **SOCIAL AND ENVIRONMENTAL IMPACTS DURING CONSTRUCTION**

The dismantling project was extremely controversial because the local Councillors and public were concerned about the effect of construction on local industry, traffic congestion, local railway traffic, vibration and dust, the effect on cyclists in the corridor

and the disturbance of property in the Expressway corridor known to have significant soil contamination.

How the project team managed public consultation, and these social and environmental impacts and challenges are discussed in the following sections.

## **1. The Establishment of an Extensive Public Consultation Program**

Throughout the project, an extensive public consultation program was maintained.

During the planning and Environmental Assessment phases of the project, the project team made a commitment to ongoing public consultation. To accomplish this a Design and Construction Liaison Group was established. When construction commenced a public advisory committee called the Construction Monitoring Committee (CMC) was formed as a sub-committee of the Design and Construction Liaison Group.

Specifically the CMC was set up to liaise with staff and the contractor to monitor construction during the project, focusing on noise reduction so that the filming and local communities are not disrupted, traffic management and congestion, dust and any other issues.

CMC participants included representatives from adjacent business and industry, residents and cycling and other local organizations. In general, the CMC consisted of concerned public members and City staff and had monthly meetings to discuss construction issues, noise concerns and jointly work out solutions.

The meetings were well attended and usually resulted in lively debate on all the issues affecting the community. In addition, public workshops were held regarding the more controversial issues.

The City also prepared newsletters at key “milestones” in the project. These newsletters were distributed over an extensive residential and business area adjacent to the project. A total of four newsletters have been issued to date, with a fifth and final one planned for the completion of all the landscaping and public art in June of 2003. Press releases and meetings were also arranged at the completion of each “milestone.”

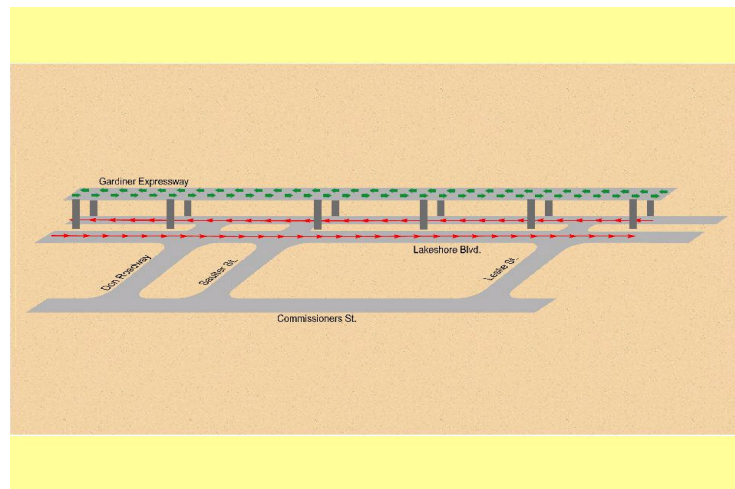
## **2. Traffic Management and Safety Performance**

The contractor worked on an ongoing basis with the City traffic operations staff to ensure that the traffic management plan was in place, monitored and fine tuned throughout all phases of construction.

Commissioners Street, a parallel route to the south of the project, was used as the main detour route through the community. One of the commitments made to the community during the project’s planning and approval, was that access to and from the remaining Gardiner Expressway be maintained at all times. This required, particularly after the

south side of the new ramp was opened to traffic, that Lake Shore Boulevard East be maintained for some of the traffic at all times. To get access to and from the new ramp and the remaining Gardiner Expressway, one lane of the traffic in each direction had to be maintained on Lakeshore Boulevard East. The contractor had to ensure at all times during the demolition of the overhead deck, that this traffic was not subject to falling concrete and debris.

The sketch below shows the Commissioners Street detour.



To reduce traffic congestion from road closures during the demolition of the deck over the major roadways of Carlaw Avenue and Leslie Street, the project team decided that the demolition over these intersections had to be carried out over weekends.

During demolition, the workers were subject to dust, falling debris, noise and detoured traffic. At all times the contractor had to ensure the workers were using the appropriate safety clothing, masks and equipment and following the Ministry of Labour safety procedures.

During the excavation for the footings for the ramp, the groundwater was found to be contaminated with hydrocarbons. This contaminated water had to be removed using the Ministry of the Environment and Ministry of Labour safety procedures, which required that the workers wear masks and the safety clothing. The same procedures were required when contaminated soils had to be removed and where soil-capping procedures were implemented in areas where the contaminated soil was to be kept in place.

### **3. Concerns About Concrete Containing Lead**

In January, 2001, the main demolition of the deck commenced westwards from Leslie Street. The hoe rams used for breaking up the concrete caused a considerable amount of dust, which raised concerns with a few members of the community. A local environmental consultant wrote a letter of complaint to the City's Medical Office of

Health claiming that tests indicated the dust contained a high concentration of lead. The issue received considerable media attention, as shown at the end of the text, as article (i) from The Toronto Star, dated January 23, 2001.

As a result of these concerns, a meeting was arranged with City staff, Toronto Public Health and the Ministry of the Environment. Soon after the meeting, the project team decided to halt work until tests were taken on the dust to determine if the lead concentration in the dust exceeded the permissible levels. At the end of the text see article (ii) from The Toronto Star dated January 24, 2001.

The City's consultants, undertook this testing and prepared a report with the results. The air quality test results for lead, total suspended particles and asbestos were found to be below the current Ministry of Labour occupational exposure limits.

Based on these results, City staff, in consultation with Public Health decided to re-commence the demolition work. A press release was issued and work resumed on January 31, 2001. At the end of the text see article (iii) from The Toronto Star, dated February 1, 2001.

#### **4. Mitigating Noise and Dust Impacts**

Before any construction commenced, the project team realized that noise would be a major concern with the community and, in particular, the local film industry.

As a result, the contract specifications were prepared with performance based noise and vibration specifications and stringent working protocols. The specifications included the following:

- requirements that contractors limit all noise related to the construction or demolition to levels no greater than the existing peak period ambient noise levels;
- a provision that all contractors cease work within 15 minutes of a designated City official being notified by a designated film studio official that the work significantly interferes with filming; and that
- demolition within 200m of the film studios will occur only in the months from December to March inclusive.

During the demolition work, the contractor had regular meetings with representatives from the two film studios. During film shoots and any demolition work, there was constant communication with the use of walkie-talkie radios to ensure the agreed upon noise protocols were being adhered to. In general most of the demolition work was carried out during the weekends when no film shoots were being conducted.

With regard to the impact of noise on the adjacent residents, the contractor had to comply as far as it was possible, to the City noise bylaws.

At one stage, the contractor started to carry out demolition work all night. The complaints from the residents were so numerous that the contractor had to cease all late night work.

Dust from the hoe rams breaking up the concrete was another concern and a contentious issue with the adjacent businesses.

As a result of these complaints, City staff monitored the dust levels and in consultation with Public Health, developed an enhanced set of dust mitigating measures for the contractor to follow. These measures included:

- the application of water (heated when necessary) to the point of hoe ram impact;
- the application of water to debris piles;
- the use of sweepers and flushes on travelled roadways;
- more extensive use of dust screens;
- more extensive clean up of adjacent properties and parking lots and
- the use of tarpaulins on a trial basis.

These measures were not completely successful in mitigating the dust, however they did keep the problem within acceptable standards. One of the factors taken into consideration, was that due to the winter work there were not a lot of people in the vicinity of the dust.

## **5. Site Specific Risk Assessment (SSRA)**

In May of 2001, the dismantling was completed together with the construction of access ramps between the new end of the elevated expressway and Lake Shore Boulevard. In December of 2001 the reconstruction of Lake Shore Boulevard was completed, leaving sections of sidewalk, the walkway, bicycle path, landscaping and public art as the only remaining components.

Throughout the project, a public consultation program was maintained. This included the CMC, which met on a regular basis to discuss construction issues, raise concerns and jointly work out solutions.

It was through these meetings that a local community committee, the South Riverdale Environmental Liaison Committee expressed concerns about the possibility of lead contamination in the boulevard adjacent to the former Canada Metals plant on the north side of Lake Shore Boulevard East, west of Leslie Street. To respond to the public concerns, City staff arranged for a series of additional soil investigations which, once completed, indicated an exceedence in Ministry of Environment criteria in the soils at two locations for heavy metals (mainly lead) and hydrocarbons. Based on limited sampling results, however, no exceedences were detected in the groundwater.

The two impacted areas were the north boulevard of Lake Shore Boulevard East between the Toronto Film Studios and Leslie Street and the southeast corner of Lake Shore

Boulevard East and Leslie Street. In the north boulevard, the soil was contaminated with lead close to the surface and with hydrocarbons at depth. In the other area, the soil is contaminated with hydrocarbons at depth.

The project was essentially halted at this stage until a solution could be found to deal with the contaminated soil.

In September 2001, City staff authorized its consultants to develop a Level 2 Risk Management Plan for these areas and to proceed with a Site Specific Risk Assessment SSRA on the proposed plan. This decision was made based on the rationale that this was the only option that would allow for the Gardiner Expressway East Dismantling Project, including the landscaping, bicycle path and public art, to be completed on schedule and reasonably close to budget.

The proposed risk management plan recommended capping of the site with 300 mm of clean fill and top soil, isolating sections of the impacted soil with geotextile filter and limited excavation and replacement with clean fill those areas where trees were to be planted. All areas under trees and shrubs were to be lined with geotextile filter to prevent any potential contact between the roots and the impacted soils. The intent of all this is to limit all potential avenues of contact between the impacted soils to humans, wild life, plants and pets.

The Level 2 Risk Management Plan described in the SSRA requires long-term monitoring of the site. This monitoring will include regular inspections of the soil cap to ensure it is intact and the establishment of health and safety procedures for contractors to follow for any excavations required for utility maintenance and repairs.

The proposed Level 2 Risk Management Plan and the preliminary findings of the SSRA were presented to the public at a CMC meeting in October of 2001. Members of the committee were extremely concerned about the proposal and felt that the City staff were not examining all potential alternatives. Subsequently, and in response to the concerns raised, City staff authorized its consultants to prepare an evaluation of potential remedial alternatives with respect to technical feasibility, safety, socio-economic issues and cost. A public meeting was held in December to debate the issue. The community still had concerns.

After consideration of all the comments and concerns from the CMC, the draft SSRA was completed in March of 2002 and forwarded for a third party Peer Review in accordance with the MOE requirements for this type of study. It was also sent to Toronto Public Health for comments.

In May of 2002, the SSRA document was reformatted and completed to respond to all the comments received from the Peer Review and Toronto Public Health. On May 14, 2002, the Peer Review and Toronto Public Health indicated that their comments had been addressed and that the SSRA was acceptable to them. The completed SSRA was forwarded to the MOE for their review in late May of 2002.



In May of 2002, another community meeting was held to discuss the SSRA. In general the community was dissatisfied with both the process and the proposed method for dealing with the contaminated soils. They felt more time was required for them to review the SSRA and it was agreed to hold a community workshop in June of 2002, to discuss the issue. Following the June, 2002 public meeting, which still did not alleviate the concerns, staff prepared a report to the Works Committee recommending the SSRA course of action to complete the project.

The picture below shows graffiti which appeared on the retained columns in the area of the SSRA.



In late July, 2002, Council authorized staff to proceed with this capping option.

In December, 2002, the project was substantially completed. All that remained was some sodding and the completion of the public art components of the project.

An official media project completion event has been scheduled for June of 2003.

## **SUMMARY AND CONCLUSION**

The enormous challenges of this project were met and overcome through the joint efforts of the City of Toronto staff, its consultants, sub consultants and contractors. Recognizing that this complex project could only be successful if we worked in partnership, each party worked hard at open communication and careful documentation of decisions in the field and office.

The success of the project can be measured by its adherence to the budget and timing commitments despite weather, strikes and unforeseen environmental problems. The major components of the project were completed on time and the total projected cost is

\$41,301,000, under the budget of \$41,880,000. It can also be measured by the achievement of the City's objectives of emphasizing pedestrian and bicycle facilities instead of private automobiles.

Finally, the Gardiner Dismantling project surprised its most vocal opponents by minimizing disruption to the community during construction and by cleaning and greening the adjacent neighbourhood with improved urban design, public art and park space.

The aerial view below show the landscape architect's rendering of the completed project.



# Dust from busting Gardiner prompts city health probe

Environment expert reports lead in demolition debris

BY JOSEPH HALL  
TRANSPORTATION REPORTER

Toronto's public health department is investigating complaints that the demolition of the Gardiner Expressway's eastern leg is sending dangerous, lead-infused dust on to adjoining movie studios and other businesses.

But the head of the \$34 million dismantling project said yesterday little can be done to suppress demolition dust, short of enclosing the elevated roadway in a canvas tent as it comes down.

"We're reviewing this whole issue of the dust control during the demolition of the Gardiner, we've received a bunch of complaints from people in the area," said city health inspector Reg Ayre.

"Public health is going to be looking at the safety of the surrounding businesses plus the safety

of the workers on the site."

Ayre said Toronto health staff will meet today with city works officials and demolition contractors beneath the crumbling Gardiner to discuss the problem and possible dust-control strategies.

"Clearly from what we can determine the dust-control plan needs some beefing up," he said.

But Dave Crichton, who runs the demolition project for the works department, said there's little that can be done during winter to keep dust down as the huge concrete structure is pounded into rubble.

Crichton says that dust can be controlled in warmer weather by hosing down the construction area with water. But in winter, he said, this soaking would create an immovable mound of frozen debris beneath the roadway.

"The only way you could (control the dust) completely is if you completely enclosed the working area in a tent or canvas," Crichton said. "And that's not really feasible because they're dismantling the Gardiner at different points all the time."

Crichton said the road is being demolished in winter, when dust suppression is most difficult, at the bequest of area studio operators, who feared construction hammering would interfere with heavy summer movie schedules.

He also said the particular segment of roadway to be demolished can change daily in response to nearby movie shoots.

The city agreed in its demolition plans to refrain from pounding the pavement down within 200 metres of any active movie shoots.

Crichton said that site managers also keep an eye on wind conditions and can stop demolition when dust is seen blowing on to neighbouring properties.

Today's meeting follows complaints by an area environmental consultant that such dust, bearing high levels of lead, was landing near her offices along Lakeshore Blvd. E. amid the studio district.

"I implore you to use your powers to stop this job until adequate dust control measures are in place," consultant Linda Lynch wrote Dr. Sheela Basrur, the city's

medical officer of health, last week. "I implore you to analyze further and test for dioxins and furons."

Lynch told Basrur that a sample of snow she'd had analyzed, representing a day's worth of dust, showed extraordinary amounts of lead.

Ayre says high levels of the heavy metal might be expected from a road opened in the 1960s during the era of leaded gasoline.

"It wouldn't surprise me but I can't confirm it without having seen some samples," he said.

Ayre says provincial environment ministry officials took tests near the demolition over the weekend but that he'd yet to see results.

Area councillor Jack Layton (Ward 30, Broadview-Greenwood) says he's concerned about the dust issue and he'll make sure the situation is dealt with.

"I want to see the medical officer of health comment on the test of the dust and see if there's any further steps we should be taking."

The three easternmost kilometres of the Gardiner are scheduled to be down by May or June.

Article (i) – The Toronto Star – January 23, 2001

# Dust testing halts demolition

## Gardiner project neighbours fear contaminants

BY JOSEPH HALL  
TRANSPORTATION REPORTER

Demolition of the Gardiner Expressway's eastern rump will be halted until contamination testing is completed on dust the project is spreading over adjoining movie studios and businesses, a spokesperson for the city's works department says.

The huge power hoes that have been pounding the elevated roadway to bits this month will likely fall silent for a week or more until results of provincial environment ministry tests for lead and other contaminants are in, says

Dave Crichton, in charge of the \$34 million project.

"We might postpone any further demolition until we get a clear picture (of what's in the dust)," said Crichton, who acknowledged the heavy equipment would be idled for the time being.

"It may be a week or something like that until we get results."

Crichton said tests done previously on the roadbed showed lead at acceptable levels. He hoped the dust tests could be taken today.

The decision to halt demolition was made yesterday after a meeting between works department, environment ministry and public health officials at the site.

The meeting came after complaints from local businesses that demolition dust

was billowing on to their properties, generating fears of heavy metal pollution.

Public health officials said this week that the road, constructed in the mid-1960s when during the era of leaded gasoline, may well be contaminated with the heavy metal.

Local councillor Jack Layton (Ward 30, Broadview-Greenwood) said further dismantling would be irresponsible until contamination levels were determined. "I think it is much more sensible to stop if we have any reason to be at all concerned about the dust ... and I think we have an obligation to stop the production of the dust until we have an analysis of what's in it."

Crichton said he may have to order some "test demolition" be done to generate dust for ministry officials to collect,

but that work crews will likely be confined to clearing away the rubble already generated until an analysis is in.

Not clear what can be done if contamination is too high

He said no further demolition had been scheduled through the rest of this week anyway, but that it would not likely resume next week if test results were still unavailable.

Linda Lynch, an environmental consultant with offices in the studio district, had some independent analysis of the dust done this month.

In a letter to Dr. Sheela Basrur, the city's medical officer of health, Lynch said dust

she'd had analyzed had extraordinary levels of lead. She also urged Basrur to order testing for dioxins and furans.

Crichton said it is not clear what can be done to suppress the dust if ministry tests show unacceptable levels of contamination.

Typically, dust containment involves hosing down areas under construction with water, he said. But in winter, this would result in an immovable mound of frozen rubble.

He said covering construction with a dust-busting tent would not be practical because the parts of roadway being demolished can change daily in response to nearby movie shoots.

Demolition of the three-kilometre Gardiner stretch is expected to continue until May or June.

Article (ii) – The Toronto Star – January 24, 2001

# Dust settles over Gardiner

## Expressway demolition work to be hosed down

BY JOSEPH HALL  
TRANSPORTATION REPORTER

Demolition of the Gardiner Expressway's eastern rump was to resume last night after tests showed contaminants in the dust clouds being raised there pose no health dangers, a works department official said.

But dust complaints from movie studios and other businesses adjoining the crumbling roadway will still place the project in hot water — literally.

"We'll be bringing tankers of heated water in to spray on the dust to help keep it down," says Dave Crichton, who is in charge of roadway removal.

"We've found that water is a very useful way of suppressing (the dust), but because of the cold temperature we haven't been able to use it," he said.

Crichton says the short halt will not affect the demolition, which is expected to be completed by May or June. He did not know yet how much the hot water bill will add to the \$34 million project.

The huge machines that had been pounding the three-kilometre stretch of elevated roadway to bits since mid-January fell silent last week after an area environmental consultant said high lead levels were found in dust she had collected from beneath the site.

Linda Lynch, whose offices are located in the studio district, had some independent analysis of the dust done earlier this month that showed extraordinary lead levels.

In a letter to Dr. Sheela Bas-

sur, the city's medical officer of health, Lynch urged a halt to the dismantling until a proper dust containment strategy could be devised.

After a meeting with city health and environment ministry officials, Crichton postponed any heavy demolition work until the city could have its own tests conducted.

"And the results are all positive so we are going to be proceeding with work," Crichton said.

"The tests . . . found the lead levels were well below the allowable limits."

## Health department will monitor dust reduction strategy

Tests for asbestos and other suspended particles were also well within safety standards set by the province, Crichton said.

But, he said, the "nuisance factor" that the demolition was causing made the works department rethink its dust containment strategy.

Crichton said contractors working on the Gardiner were to begin using warmed water last night, barring rain or wet snow. It's hoped the warm water, which will be hosed directly on the breaking concrete, will remain liquid long enough to coat the resulting dust.

Health department officials say they will monitor the hot water strategy to ensure that a goal of 70 per cent dust reduction is achieved.

Local Councillor Jack Layton (Ward 30, Broadview-Greenwood) said he was happy the works department voluntarily halted demolition to seek a dust-reduction solution.

"I said to them (the works department) before the delay that we're not being good neighbours if we allow this kind of dust to blow around."

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