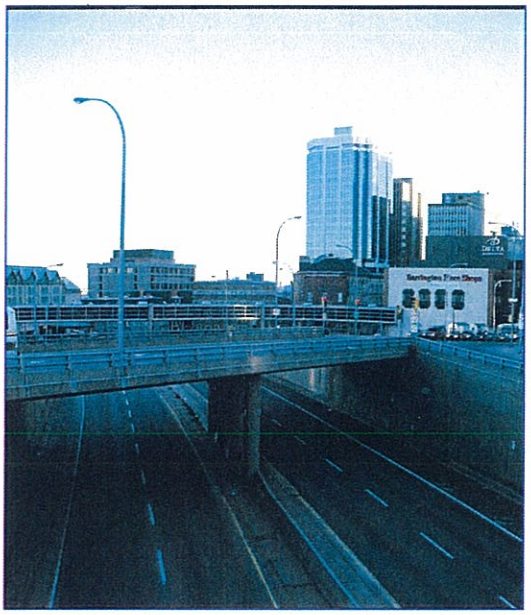
DRAFT

Final Report:
Cogswell Interchange Lands Best Practices Research Study



Cogswell Interchange Looking Southeast

Demolition of the Gardiner Expressway, Toronto, ON

Prepared for:
Halifax Regional Municipality Capital Commission Society

Aerial View of the Cogswell Interchange

Cantwell & Company

Real Estate
Tourism
Management Consulting

In association with
Bill Plaskett, Planner

May, 2004

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May 4, 2004

Ms. Jacqueline Hamilton, Planner
HRM Capital District
P.O. Box 1749
Halifax, NS

Re: Cogswell Interchange Best Practices Study

Dear Ms. Hamilton:

Please find the attached final draft report for the Cogswell Interchange Best Practices Study. This strategy provides a review of the planning process associated with similar projects elsewhere in North America, as well as a financial analysis of the redevelopment potential of the Cogswell Interchange, and an implementation strategy.

Please provide me with feedback so that the report can be finalized as soon as possible. As always, if you have any questions about this report, please contact me at 497-7338.

Sincerely,
Cantwell & Company Consulting

Ross Cantwell, President

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INTRODUCTION

The Cogswell Interchange is a 13 acre property just north of the Halifax Central Business District. Built in the late 1960's as phase 1 of an ambitious plan to build a freeway along the Halifax waterfront, the Interchange was orphaned almost as soon as it was built when community activists had the project terminated.

Today, there are numerous reasons to review the redevelopment potential of the Cogswell Interchange. HRM residents ranked removal of the Cogswell Interchange as one of the signature projects as part of the Capital District Task Force's public consultation process held in early 2002 (Capital District Vision). They argued that the removal of the Interchange would re-connect Gottingen Street to the downtown, and would allow the business district to expand without the negative impacts associated with construction adjacent to heritage buildings. The dwindling supply of land for development has also made the Cogswell Interchange a new target for real estate developers, with at least one unsolicited proposal to HRM arguing that the time is right to redevelop the property. Finally, the construction of the new sewage treatment plant at the corner of Cornwallis and Barrington Streets has forced HRM staff and council to consider the future of the Interchange as current construction activity will have an impact on the future development of the remaining lands. In all of these cases, the municipality is reacting to events, and not making proactive decisions.

This study is the second in the series of reports designed to provide advice to HRM staff and Council on the future of the Cogswell Interchange. In 2001, Vaughan Engineering prepared an assessment of the transportation implications of removing the interchange (it concluded it was physically feasible); it did not establish a final road configuration for the redevelopment. The intent of this study is to assess the planning process associated with the removal of the interchange, and to determine whether or not the project is financially feasible.

CASE STUDIES OF SIMILAR PROJECTS

In order to learn from the experience of others, the consultants conducted a literature review to determine if there were other communities in North America that had dealt with this same problem, and if so, what they learned during the demolition and redevelopment process. A total of six projects were reviewed, including:

1.	Gardiner East Expressway, Toronto, Ontario	Completed 2001.
2.	Park East Freeway, Milwaukee, Wisconsin	Completed April 2003.
3.	Central Freeway, San Francisco, California	Commenced April 2003.
4.	Embarcadero Freeway, San Francisco, California	Completed 1990/91.
5.	Interstate 30 Overhead, Fort Worth, Texas	Completed 2001.
6.	Akron Innerbelt Freeway, Akron, Ohio	Currently in planning phase.

Most of the case studies reviewed had a similar rationale for the demolition of the roadway.

- Reconnect the City
- Improve Quality of Life.
- Create New Land for Development
- Increase Property Tax Revenue
- Eliminate Future Maintenance Costs.

In the HRM context, these ideas are all pertinent to the Cogswell Interchange and have already been expressed in one way or another by HRM staff. Local observation would indicate that the removal of the Cogswell Interchange would:

- Reconnect the Brunswick/Gottingen area with downtown and the waterfront.
- Re-establish the original street pattern in the area, making it more pedestrian friendly.
- Improve the visual quality of the area and enable buildings to be re-oriented to the street.
- Create land for redevelopment as the logical extension of the Central Business District.
- Enhance the value of land surrounding the interchange, thereby generating more property taxes.
- Create a signature project for the Capital District, possibly symbolizing the future of the city.

Lessons Learned From the Case Studies

Based on a review of the case studies, the consultants identified the following common themes:

- A Project Champion Is Needed In Order to Make the project Happen.
- The Project Time Frame Can be Lengthy.
- Extensive Public Consultation Is Essential.
- A Comprehensive Traffic Analysis Is Needed.
- Cost Benefit Analysis Is a Key Decision Making Tool For These Projects
- A Plan is Essential: Masterplans and Design Guidelines are Needed
- Consider the Implications of Local Ownership
- Property Tax Revenue Can Justify the Project.
- Municipal Plan Review and Zoning and Create Value for the Municipality
- Make Sure Environmental Issues Are Thoroughly Researched
- Know Where Abandoned and Current Municipal Infrastructure Is Located
- Detailed Bidding Documents Can Generate Better Tender Prices
- Traffic Management Plans Are Needed to Avoid Gridlock
- Noise, Dust and Business Interruption Should Be Expected
- Recycling Materials Can Pay Dividends

FINANCIAL ANALYSIS

While there may many reasons why residents of HRM would want to proceed with the redevelopment of the Cogswell Interchange right away, the municipality has a limited amount of funding for capital projects. This is particularly true in 2004, as the municipality has just committed more than $250 million towards the financing and construction of the Halifax Harbour Clean-up. It is within this context that HRM Council has indicated that if the Cogswell Interchange project is to proceed, it must be self-financing. The following cost benefit analysis is intended to help Council make this decision.

ESTIMATED PROJECT COSTS

To date, only a cursory amount of work has been done assessing the cost of demolishing the interchange and rebuilding the new road network. A report by Vaughan Engineering in 2001 estimated the cost of the Cogswell project at $9.1 million, but did not include specific line items for environmental or archaeological work, which could be substantial.

In order to obtain a preliminary assessment of the site, HRM retained Maritime Testing in February 2004 to conduct a Phase I Environmental Assessment and a preliminary geotechnical / environmental investigation. The results of the Phase I report indicate that the Cogswell area was occupied by residential and commercial uses from the late 1700's until the early 1960's. A review of environmental data identified two well known hydrocarbon spills in the area: the lands around Metro Turning Point, and the former Irving Garage (now part of the sewage treatment site). Both spills were cleaned-up and were up gradient from the site, therefore they pose no risk of contamination to the remaining site. The area is underlain by Halifax Formation Slates (Pyretic Slate). If this material is excavated during the development process, it will require costly disposal. This is similar to most sites on the Peninsula. The Trade Mart building and Cogswell Tower both had old oil tanks removed in the past, and may pose some risk of contamination down gradient (i.e., within the Cogswell Interchange). The Cogswell Tower site previously housed a gas station.

Geotechnical and environmental samples were taken from six boreholes around the site. Overall, the environmental consultants were surprised at how little contamination was encountered, although the limited number of samples does not make this conclusive. The consultants recommend that some additional sampling work be conducted down gradient of the Trade Mart building and Cogswell Tower (to the depth of bedrock) to determine if any spills have occurred that would alter this preliminary analysis. Further work can then be done to refine a clean-up estimate once a physical masterplan has been prepared. It would appear that given the likely development format (medium to high rise urban buildings that require foundation piles), that most of the contaminants identified so far can be managed on-site as part of the development process.

It is too early to be able to make any reasonable estimates of the environmental cost associated with the clean-up of the Cogswell Interchange. The information derived from some additional site testing would help this appreciably. For now, a budget of $2 million is being carried. Given the low levels of existing contamination found in the initial samples, and assuming a managed approach to site remediation is used (i.e., leave contaminants where they are if they don't need to be moved, and bury others under road surfaces where appropriate), this should be sufficient.

Mitigation of Cultural Artifacts

Federal funding triggers a requirement to adhere to the Canadian Environmental Assessment Act (CEAA) which includes a review of archeological resources. Even without Federal Funding, the Nova Scotia Museum is becoming much more vigilant in the enforcement of the Special Places Act, and the need to conserve archaeological resources in high probability locations such as downtown Halifax. The Cogswell Interchange is such a location.

HRM recently spent $250,000 on archaeological assessments and mitigation work around the proposed sewage treatment plant site at Cornwallis and Barrington Streets, or $100,000 per acre for the 2.6 acre site. In order to refine this estimate further, a detailed phase 1 assessment of the remainder of the site will need to be conducted. This should cost approximately $25,000, and would include a paper review of historical maps, archives, the construction drawings for the Cogswell Interchange, etc. as well as a detailed mapping exercise to piece together the history of the area . The resulting report will be able to identify which areas were historically occupied, and given the likely damage caused by the construction of the interchange, which areas may still have a high probability of containing artifacts. At this point, it should be possible to further refine the budget needed to mitigate the site before construction can proceed. In the interim, we have added a line item in the cost estimate equal to $1,000,000.

Revised Cost Estimate

Based on the preceding analysis, it would appear prudent to amend the Vaughan Engineering cost estimate to provide specific line items for consultation, planning, design, engineering, archeology and environmental remediation. The revised cost estimate is $12.6 million dollars. As the 2004 Federal budget exempts municipalities from HST, the cost of this tax is not included in the calculation.

REVENUE FROM LAND SALES

The Cogswell lands contain 16.5 acres of raw land. Referring to the Vaughan Engineering study, 8.1 acres are needed for new roads, and 2.6 acres is set aside for the sewage treatment plant, leaving 5.8 acres available for development or use as openspace.

The Effect of Development Density On Land Value

Although the amount of land available for development is fairly certain, its future value is not. This is because the value of land can vary dramatically depending on the type of land uses are allowed to be built, and the kind of density that is allowed. The implication for HRM is that the more density that is allowed within the Cogswell Interchange, the more viable the project will be. As well, it also indicates that it would be possible to concentrate density on portion of the site, thereby increasing its value, and enabling another portion of the site to be kept as open space or provided at no cost to a public use such as a performing arts centre.

Estimated Revenue From Land Sales

Assuming that 100% of the lands created from the redevelopment of the Cogswell lands were developed from a combination of institutional, residential and commercial uses, it is reasonable to assume that the project can generate approximately $16 million of gross revenue . This does not take into account the time value of money, land sales absorption rates, or the cost of brokerage fees (if any). If 10% of the lands within the Interchange were assigned for public facilities that did not generate any revenue, the remaining 5.2 acres of residential and commercial land sales would still generate just over $14 million of revenue.

Possible Land Sales

Based on the research conducted for this study, the consultants identified a number government departments or agencies that may be interested in purchasing land in and around the Cogswell Interchange. Appendix B (Detailed Project Financial Information) contains a detailed description of the opportunity associated with the following groups. They include:

- Crombie Properties (formerly Halifax Developments Ltd)
- Trade Centre Limited (World Trade and Convention Centre)
- Nova Scotia Department of Justice (new Law Courts Facility)

PROPERTY TAX REVENUE

In order to assess the impact of this method on the Cogswell Interchange, the consultants drew a redevelopment boundary around all property south of Cornwallis Street, north of Duke Street, and from Brunswick Street to Halifax Harbour. A review of data from the HRM Finance Department indicates that the cumulative assessed value in this area includes $30.8 million of residential property (mostly large apartment buildings in Scotia Square and on Brunswick Street) as well as $262 million of commercial tax base, including Scotia Square, Purdy's Wharf and Casino Nova Scotia. There is an additional $85.7 million of tax base

associated with the Business Occupancy Tax. In total, this area contains $389.5 million of tax base, and generates $13.7 million of property and occupancy taxes a year, as outlined below.

Assuming the assessment base for just the residential and commercial components increase by 2.5% as a result of the redevelopment of the Cogswell Interchange, HRM would collect an additional $259,418 per year in property taxes. As this additional property tax revenue would be paid in perpetuity (i.e., forever), the present value of this revenue stream can be calculated by dividing the annual cash flow by the desired capitalization rate. For this calculation we have used 6%, or roughly the Municipality's cost of funds through the Municipal Finance Corporation. This analysis indicates that a 2.5% increase in property taxes for buildings in the two blocks around the Cogswell Interchange will support $4.3 million in capital spending.

Reduced Operating Costs and Avoided Capital Investment

HRM currently pays operating and maintenance cost that could be avoided if the Cogswell Interchange were demolished. These costs include landscape maintenance of the grass and trees within the Interchange (much of which is difficult to mow due to steep slopes), and additional snow dumping costs that are required as the road allowance adjacent to the retaining walls within the Interchange is not wide enough for snow storage. When taken together, it is reasonable to assume that a new at grade road system would be $40,000 per year less expensive to maintain than the current overpass system.

FUNDING OPTIONS

Financing Lessons from the Case Studies

- The US Federal Transportation Administration has billions of dollars earmarked fro highway renovation, and these funds are being use to help finance similar projects in the United States. Canada has the Federal Infrastructure Program, although funding is already allocated for the program that expires in 2007.
- City's that sold land to recover the costs of demolishing highways used planning tools such as rezoning, and fast track approval processes to add value to the land they sold to developers.
- Most municipalities used the incremental property tax revenue associated with the project (from new development and enhanced existing properties) to justify the costs associated with their project.
- The Gardiner Expressway in Toronto received no Federal or Provincial funding, and was justified solely on the cost savings associated with future capital maintenance (i.e., it was cheaper to demolish the elevated highway and rebuild an at grade road than it was to keep maintaining the existing infrastructure).

Federal Funding

The Infrastructure Canada Program (ICP) 2000-2007 provides $2 billion for large scale infrastructure projects. Funding for the program is allocated to the provinces using a population based formula. As a result of this formula, $65,282,000 was allocated to Nova Scotia. Once provincial and local matching funds are applied, the fund leverages a total of $195 million in spending. The program may invest in five categories of infrastructure that are vital to advancing Canada's social and economic objectives:

1. Highway and Railway Infrastructure..
2. Local Transportation Infrastructure.
3. Tourism or Urban Development Infrastructure
4. Water or Sewage Infrastructure.
5. Broadband.

To date the majority of this funding has been allocated for sewer and water projects within the municipality, therefore there is virtually no room to fund the Cogswell project before the program expires in 2007.

Provincial Funding

The Nova Scotia Gaming Corporation is the provincial entity that owns the Casino Nova Scotia, immediately adjacent to the Cogswell Interchange. The location of Casino Nova Scotia is not ideal. Although located directly on the harbour, this section of the waterfront does not have a large amount of pedestrian activity, and the casino's location is obscured by one of the retaining walls from the Cogswell Interchange. The redevelopment of the Cogswell Interchange would make the Casino much more visible within the downtown, which would translate into increased profits for the Province – thus justifying an investment on their behalf to accelerate the project. For these reasons, the Nova Scotia Gaming Corporation is very interested in helping to accelerate the removal of the Cogswell Interchange, and would make an excellent financial partner for HRM in this venture.

NET COST BENEFIT AND CONCLUSION

The report summarizes the detailed presented in the preceding analysis, including the estimated cost of demolishing the interchange, revenue from land sales and the additional annual cash flow to HRM from reduced maintenance costs and increased property tax revenue. These sources of revenue and expenses have been allocated over a nine year period, and then discounted back to determine its net present value. The following assumptions were used in developing this analysis:

1. The proposed timeframe allows for planning approvals, additional engineering studies, the preparation of design documents, demolition and road reconstruction.

2. Ninety percent (90%) of the land created by the redevelopment of the interchange is sold for development, with 10% retained for public uses;
3. The analysis assumes no Federal or Provincial support is provided, even though it would appear that at least some support should be forthcoming;
4. All land prices and cost estimates are stated in 2004 dollars and have not been inflated in future years. It is assumed that all of the institutional land is sold in year four (the first year land is available), while the residential land is sold equally in years five and six, and half of the commercial land is sold in year seven and the other half in year nine.
5. The estimate of incremental property tax revenue from existing properties ($259,418 per year), and saved maintenance costs ($40,000 per year) are all stated in 2004 dollars and have not been inflated in future years.
6. The future value of the property tax perpetuity is calculated in year nine by capitalizing the year eight figures. This calculates the NPV of this cash flow stream at year ten. This number is subsequently discounted back to 2004 dollars.
7. A discount rate of 6% is used to capitalize future cashflows (i.e., the property tax revenue and operating cost savings) and to calculate the net present value of the project.

Based on this analysis, the total project costs $12.6 million to implement, and generates $14.4 million of revenue from land sales, producing a $1.8 million cash surplus. However, when the time value of money is incorporated into this analysis, this $1.8 million surplus becomes a $935,000 shortfall.

However, in addition to the revenue from the sale of land, HRM will also enjoy an increase in the property tax assessment of existing lands around the interchange. This was previously estimate to be worth $259,000 per year. We have assumed HRM would start seeing this cashflow in year four (the first full year after the completion of the redevelopment project). In addition, we have previously estimated the annual cost savings from landscaping, snow plowing and deferred maintenance at $40,000 per year. When these two cashflows are discounted back to 2004 dollars, they generate just over $4 million of benefit to HRM.

Taken as a whole, the combined net present value from both income streams is $3.1 million over the life of the project. This means that revenue (land sale) projections could be reduced by about one third before the project would no longer generate a positive net present value. Based on this analysis, it is the consultants opinion that the redevelopment of the Cogswell Interchange is financially viable, and can be self financing.

FINANCING OPTIONS

Now that it has been determined that the redevelopment of the Cogswell Interchange is financially viable, this section will present some summary information about financing options that are available to HRM.

The Municipal Finance Corporation. The Municipal Finance Corporation (MFC) is the primary source of funds for most municipalities.

Commercial Banks. Depending on the specific needs of the development (i.e., if a high percentage of land has been sold and HRM only needs access to a small percentage of funds for a short period of time), this may be a useful source of financing.

Institutional Investors. Large institutional investors (insurance companies and pension funds) are a viable source of funding, but are a better match for the private sector development community.

Engineering Firms. Some large engineering firms such as SNC Lavalin finance the projects they design as a way to generate additional work. Based on conversations with several engineering firms, the Cogswell project would most likely not qualify for this type of financing.

Construction Firms. Some large construction firms have the ability to finance projects the size of the Cogswell Interchange. Under this scenario, the financing of the project would be included with the tender for project construction. This option could work well in a design build scenario.

REDEVELOPMENT STRATEGY AND ACTION PLAN

Based on the cost benefit analysis conducted in the previous chapter, it would appear that the redevelopment of the Cogswell Interchange is a financially viable proposition, and can be self financing under the right terms and conditions. In addition to the financial (i.e., quantitative) argument, there are also a number of qualitative arguments that support the redevelopment of the Interchange. They include:

PROJECT RATIONALE

Removing Cogswell Supports Other Community Planning Initiatives

- Reconnects the Gottingen Street neighbourhood and the residential communities to the North, to the Central Business District.
- Its removal will also allow HRM to re-create the entrance to the Capital District and downtown Halifax.

A New Approach to Economic Development

- The use of industrial and business parks by municipalities as economic development tools has been prevalent for decades. While the argument for assembling and servicing industrial land has always been understood by Council, downtown has rarely received the same treatment.
- Council should consider using the land base within the Cogswell Interchange as a economic land reserve. This could provide HRM with a competitive advantage over other similar sized cities, and would allow HRM to achieve a state of readiness to support business attraction and retention

The Cogswell Interchange Can Help Manage Growth

- From a regional planning perspective, there will be a need for a new office tower in the Capital District at some point in the future. Although this is unlikely to occur during the next 5 to 10 years, if one takes a long term perspective (e.g., 25 years), it will happen at some point. The Cogswell is an excellent location for the expansion of the CBD.

The Cogswell Interchange is the Public's First Priority For The Capital District

- The Cogswell Interchange project was identified as the number one priority by HRM residents as part of the initial visioning process for the Capital District Commission.
- More than any other project, it represents the wishes of the community, and would symbolize the transformation of the District into the new downtown HRM.

\The Cogswell Is A Self Financing Proposition

- Based on the cost benefit analysis prepared in the previous chapter, under the right circumstances it appears that the redevelopment of the Cogswell Interchange is a self financing proposition.
- This will most likely include pre-selling a percentage of the land before the project proceeds.

PROJECT TIMING

When should HRM proceed with the redevelopment of the Cogswell Interchange? Engineering studies indicate that the overpass structures within the Cogswell Interchange are still in reasonably good shape and can probably continue to exist with fairly little capital maintenance for at least 10 to 15 years. Some might argue that HRM has more important things to focus on at the current time, and if the overpass structures

don't need any capital upgrades, why not just wait until they are ready to fall down, and redevelop the site at that time? Although there is a fair amount of logic to this argument, the biggest argument against it is that it does not take a proactive approach to the situation. This is a very important consideration, as even if HRM wanted to demolish the Interchange tomorrow it would take at least two years of consultation, planning and additional studies before the project was ready to proceed.

At this point, time is on HRM's side. Rather than wait until some sort of event makes the removal of the interchange an urgent proposition, HRM should move forward with the public consultation process, conduct some of the studies that will be needed in order to obtain regulatory approval to proceed, and negotiate with funding and financial partners in order to remove the uncertainty associated with the project (i.e., obtain funding agreements or purchase and sale agreements). If at any point, new information changes the financial analysis (e.g., new environmental data indicates a greatly increased cost), the project can be delayed, however the more information that is collected, the more the risk associated with the decision can be reduced.

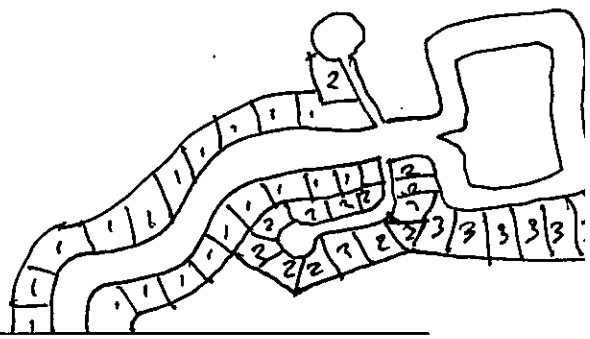
ADD comment on consideration to existing & impending priorities.

IMPLEMENTATION PLAN FOR THE COGSWELL INTERCHANGE

RC → & BEST PRACTISES

1. The Capital District Should Publish a Vision for the Cogswell Interchange
2. Appoint a Project Manager For the Project — RECOMMEND STEPS: 2.-5 ?
3. Refine The Cost Estimates Associated With the Project
4. Update the Cost Benefit Analysis From This Project
5. Present the Current Plan to the Public → EXPRESSION OF INTEREST FOR PARTNER RE: MASTER PLANNING PROCESS/EXERCISE
6. Determine the Viability of Several Major Anchor Projects
7. Identify Financial Partners For the Project
8. Apply for Federal Infrastructure Funding
9. Prepare A Masterplan And Design Guidelines
10. Solicit Public Consultation (Phase 2) Into the Masterplanning Process
11. Amend The Municipal Plan and Enable Fast-track Development
12. Determine If Additional Lands Need to Be Acquired
13. Prepare a Traffic Management Plan
14. Prepare a Communications Plan
15. Prepare a Detailed Tender Package and Call for Proposals

Review Vaughn options & determine quantity take-off & refine roadway costs; this will require review of Vaughn assumptions on roadway grades.



1.0 INTRODUCTION

1.1 BACKGROUND

In the late 1960's a plan was developed to build an expressway along the Halifax waterfront. This harbour front expressway would have provided a four lane expressway to connect the Port to the harbour bridges, and would have provided a bridge from the South End across the Northwest Arm. In preparation for this project, large tracts of land along the Halifax Waterfront were assembled, and the existing warehouses and industrial properties were razed. During the early 1970's, several components of the project were built (e.g., Cogswell Interchange, Northwest Arm Drive), but the main section along the Halifax waterfront was never completed. The project came unraveled when heritage advocates realized that parts of Historic Properties would have to be demolished in order to create a wide enough right of way for the new expressway.

Of the few pieces of infrastructure that were ever built as part of this plan, the Cogswell Interchange has by far been the most controversial. Today the Cogswell interchange stands as a monument to a failed vision. As the interchange is disconnected from other larger roadways, it only sees a fraction of the transportation volume that it was designed for. Unfortunately, the project influenced a number of other developments around it (Scotia Square, the Trade Mart Building, the second level of the Law Courts building) and the cumulative result is a section of the city that does not function well for pedestrians, and creates a barrier to human scale activity – right within the central business district.

Over the past decade numerous studies have identified the Cogswell Interchange as a redundant piece of municipal infrastructure that should be removed (Downtown Halifax Business Commission Development Strategy, NSCAD design studios, Halifax Waterfront Masterplan, etc). The site is viewed as having a large amount of redevelopment potential for a number of reasons: it would allow the reconnection of Gottingen Street to Downtown Halifax; it provides the ability for downtown to expand, without the heritage aspects of the old City (the original British grid); and it is outside the Citadel view planes, thus creating one of the few locations where any significant density can be achieved close to the downtown core. The 1998 Strategy for the Rejuvenation of Barrington Street also argued that the removal of the Cogswell Interchange would help create a multi-modal transition area for automobiles and cars coming into the downtown (i.e., visitors would walk from this destination). This idea was also included as part of the Halifax Waterfront and Openspace Plan published in 2001. Therefore it was not a surprise when the removal of the Cogswell Interchange was identified as one of the signature projects as part of the Capital District Task Force's public consultation process held in early 2002 (Capital District Vision).

Over the past few decades, one of the few groups that the Cogswell Interchange did not attract the attention of was the local real estate community. This was partly due to a large amount of undeveloped land in the downtown core, and the unfavourable development economics of the project. However, during the past decade even this dynamic has begun to change. With increasing land prices, developers are beginning to look at this property as a future land bank for the expansion of downtown. In fact, one local developer made an unsolicited offer to HRM to purchase and redevelop the property in the late 1990's.

All this activity has the effect of finding its way back to HRM Regional Council. The current planning for the new sewage treatment plant near Cornwallis and Barrington Streets is raising the issue of the Cogswell Interchange once again. In order to address this issue once and for all, Council has commissioned a series of studies, including an assessment of the transportation engineering aspects of the project (Vaughan Engineering), and an in-house review of the development potential of the property (HRM Real Estate and Asset Management). The Capital District Task Force is currently assessing the future need for municipal land in the downtown as part of an infrastructure opportunities study that has just been commissioned for the Capital District.

1.2 COGSWELL INTERCHANGE REDEVELOPMENT CONCEPT

In September 2002, the Capital District prepared a Draft Discussion Paper on the redevelopment of the Cogswell Interchange[1]. Although a short paper, this document did a good job of summarizing a number of key issues relative to the redevelopment of the site. Most importantly, the discussion paper provided a preliminary financial analysis of the redevelopment of the Interchange, and in doing so provided some justification to move forward with a more detailed analysis of the site.

The rationale for removing the Cogswell Interchange includes the following points:

- Concentrating new development on the Peninsula, where existing infrastructure and services are located, can be seen as smart growth, and reduces the impacts of urban sprawl;
- Redeveloping the Interchange has the potential to re-connect the Gottingen Street neighbourhood back to downtown;
- The lands within the Cogswell Interchange have the potential to allow and encourage the expansion of the existing Central Business District (CBD) in an area with minimum impacts on existing heritage buildings and outside the confines of the Citadel Hill view planes.

[1]. Cogswell Street Interchange Redevelopment Concept, Discussion Paper, HRM Capital District, September 2002.

- Redeveloping the lands within the Cogswell Interchange will enhance the value of the surrounding properties, thus providing more tax revenue to the Municipality.

It is within this context that HRM retained a consultant to assist them in refining their thinking on the redevelopment of the Cogswell Interchange. The goal of the study is to provide HRM Regional Council with an assessment of the planning process and financing options associated with the redevelopment of the Interchange. By reviewing what has been done elsewhere, HRM can benefit from the lessons others have learned, and develop and implement a plan for the eventual removal of the interchange.

1.3 GOALS AND OBJECTIVES OF THE REPORT

As described in the terms of reference, we understand the goals and objectives of the study to be as follows:

1.3.1 Study Goal

"To conduct best practices research two determine how similar projects were approached from a planning process and project implementation point of view, and to assess capital financing models for bringing a redevelopment project to fruition".

1.3.2 Objectives of the Study

- To enable strategic decision making with respect to the planning process and project implementation process that may be employed in determining redevelopment options (land uses) for the lands.
- to enable strategic decision making with respect to financing options for the construction of new facilities (land uses) on the lands.

1.4 ORGANIZATION OF THIS REPORT

This report is organized as follows. Chapter Two presents a summary of lessons learned from six case studies of similar highway demolition projects in North America. These lessons focus primarily on the planning and logistics associated with the demolition and redevelopment of a project similar to the Cogswell Interchange. The actual text of the case studies are presented as an appendix to this report. Chapter Three provides an assessment of the financing options for the Cogswell Interchange. It summarizes how some of the case study projects were financed, and provides an analysis of financing options available to HRM, as well as a recommended approach for this project. Based on the preceding analysis, Chapter Four presents a recommended action plan for the Cogswell Interchange project, including additional studies that need to be conducted, and a sequencing of events that need to occur for the project to move forward.

2.0 CASE STUDIES OF SIMILAR PROJECTS

This section provides a summary of six case studies that were prepared to examine how other communities in North America that have removed redundant highway infrastructure. The purpose of preparing these case studies is to review and analyse comparable projects so that HRM can benefit from the experience of others. Key lessons that the consultants were trying to identify were those that related to the planning process, as well an insight into the financing process.

2.1 SELECTION OF CASE STUDIES

Although there are dozens of old freeway spurs and isolated sections of highway infrastructure that have been declared redundant by municipalities across North America, to date, very few have actually been demolished. A literature search, and telephone calls to a number of large Canadian cities (Vancouver, Calgary, Toronto, Montreal) revealed that only one large highway project has been demolished in Canada so far; the Gardiner East Expressway in Toronto. Of those that have been taken down, most are located in the United States. With the exception of the "Big Dig" in Boston, the case studies presented in this report represent most of the major projects that are currently active in the United States. Given the scale of the Big Dig ($10 billion) it was felt to be too out of scale to be relevant to the HRM situation, and therefore was not included in this analysis.

With input from the Steering Committee, the cases selected for study were:

1.	Gardiner East Expressway, Toronto, Ontario	Completed 2001.
2.	Park East Freeway, Milwaukee, Wisconsin	Completed April 2003.
3.	Central Freeway, San Francisco, California	Phase 1 Complete 2003.
4.	Embarcadero Freeway, San Francisco, California	Completed 1990/91.
5.	Interstate 30 Overhead, Fort Worth, Texas	Completed 2001.
6.	Akron Innerbelt Freeway, Akron, Ohio	Currently in planning phase.

In an attempt to keep the total body of this report to a manageable size, the full text of case studies (including photos) are included for reference in Appendix A. This chapter presents a summary of lessons learned from these demolition projects, and is organized into a number of sections, each presented below.

2.2 RATIONALE FOR DEMOLITION

Most of the case studies reviewed had a similar rationale for the demolition of the roadway.

1. **Reconnect the City**. In most cases, the roadway was seen as a means for reconnecting parts of the city that were severed by the initial highway construction.
2. **Improve Quality of Life**. Related to issue number one, it was anticipated that the demolition of the highway would improve the quality of life in adjacent neighbourhoods, whether residential or commercial.
3. **Create New Land for Development**. In most cases, the demolition will create surplus land that can be redeveloped, with land sales being used to fund the demolition and reconstruction.
4. **Increase Property Tax Revenue**. Every municipality cited the potential for new or increased property taxes as a major justification for the removal of the highway.
5. **Eliminate Future Maintenance Costs**. Most communities noted that they would save or eliminate future maintenance costs by removing these old elevated structures and bridges. In the case of the Gardiner Expressway in Toronto, this was the sole justification for the demolition.

In the HRM context, these ideas are all pertinent to the Cogswell Interchange and have already been expressed in one way or another by HRM staff. Local observation would indicate that the removal of the Cogswell Interchange would:

- Reconnect the Brunswick/Gottingen area with downtown and the waterfront.
- Re-establish the original street pattern in the area, making it more pedestrian friendly.
- Improve the visual quality of the area and enable buildings to be re-oriented to the street.
- Create land for redevelopment as the logical extension of the Central Business District.
- Enhance the value of land surrounding the interchange, thereby generating more property taxes.
- Create a signature project for the Capital District, possibly symbolizing the future of the city.

The following conclusions were considered by the consultant as being common to most of the case studies reviewed for this report (attached as Appendix A).

2.3 A "PROJECT CHAMPION" IS NEEDED TO MAKE IT HAPPEN

There are a large number highway projects that have been declared redundant in North America. One only has to look as far as Fredericton or Bathurst, NB to find examples of highways that residents wish had never been built, or that should be removed. In the case of Fredericton, several studies have identified how the their riverfront roadway cuts off the downtown from the Saint John River, but to date, nothing has been done about it. This scenario has likely been replayed many times in other communities throughout North

America. So what separates the case studies outlined in this report (i.e., highways that have been or are being removed) from those that are talked about but not acted upon? A project champion!

In all of the cases presented in this report, there was someone (e.g., the mayor, a local councilor, or a strong minded municipal employee in the planning or engineering department), who believed in the long-term benefit of the project, and took that project on as a project champion. In the case of Toronto's Gardiner East Expressway, the initial advocate was a local councilor. In Milwaukee (Park East Freeway) it was the City's planning department and redevelopment agency. In San Francisco (Central and Embarcadero) the process was initiated by community groups opposed to the freeway, with their grass-roots vision slowly finding its way into the official bureaucracy, so that later on it was officially sanctioned by the planning department, department of transportation, transit authority and port authority. The champion in Fort Worth was a heritage preservation group with enough financial backing to take the issue to court and fight for their cause. In Akron (the Inner Belt), it is the mayor who has taken on the cause, and is now advocating the demolition of the freeway as part of a larger program for the revitalization of the City's downtown.

For many years Kate Carmichael was the champion for the removal of the Cogswell Interchange. Today the voice appears to have grown to include a wide range of local residents and stakeholders, as evidenced by the priorities established at the Capital District visioning session in early 2002, where the Cogswell Interchange was identified as the signature project for the new Capital District. As there no longer appears to be a single voice calling for the removal of the Cogswell Interchange, in order to make this project a reality, HRM regional council will need to "deputize" a particular department or group and give them a clear mandate to pursue this project.

2.4 THE PROJECT TIME FRAME CAN BE LENGHTLY

The decision-making and planning process for a project as large and complex as the removal of a section of highway can be quite lengthy. In many cases the idea of removing the highway or overpass was discussed almost as soon as the initial construction was completed. However, as the project was brand new, these calls were usually disregarded due to a lack of financial resources, or the risk of being seen as going backwards. What transpired was usually several decades of debate about the usefulness of the infrastructure, and the pro's and con's of its removal. What changed over time was the aging of the infrastructure, with the real and projected maintenance costs increasing over the years until the point where a major injection of capital was needed in order to maintain the project, or the benefits of removing the freeway (tax revenues, downtown revitalization, etc) outweighed the associated costs. In all cases, the project did not proceed until funding was secured to ensure the project's removal.

Therefore, for most of these projects, the time delay between the initial vision of removing the highway and its eventual demolition spanned a period of 15 to 20 years. For example, in Toronto the demolition of the Gardiner East Expressway and redevelopment of Lakeshore Boulevard was first promoted in 1986, but was not fully realized until 2003. It took eleven years to reach approval in principle, two years to complete technical planning, and two years of work to physically demolish and reconstruct the roadway.

2.5 EXTENSIVE PUBLIC CONSULTATION IS ESSENTIAL

All of the case studies demonstrate public consultation at various stages of the project, including early debates about the merits of demolition, the visioning and master planning process for redevelopment, and the logistical details of traffic management during demolition and reconstruction. In some cases, the consultation process was led by the city while in others consultants were hired. Consultation techniques included workshops, newsletters, web sites, and on-site field offices. The success of a project such as this depends on stakeholder consultation and public consensus. In the case of the Cogswell Interchange it would clearly be necessary to consult at least with:

- The downtown business community.
- The Brunswick/Gottingen community (residential and business).
- Adjacent property and business owners: the hotels, Trade Mart, Casino, Karlsen Shipping, etc.
- HRM Engineering staff and Metro Transit.

2.6 A COMPREHENSIVE TRAFFIC ANALYSIS IS NEEDED

In all cases the municipality undertook an analysis of traffic volume and movement and the options for reconfiguring the road system after demolition of the freeway. For Cogswell, this has already been done by Vaughan Engineering, although the study was strictly based on traffic considerations without any consideration of future land use (i.e., would the remaining land parcels be suitable for land development?).

2.7 COST BENEFIT ANALYSIS IS A KEY DECISION TOOL FOR THESE PROJECTS

Most municipalities used the cost benefit analysis technique to determine whether or not the project made sense. These analyses typically included a comparison of the long-term cost of maintaining the existing structure vs. the capital cost (and reduced maintenance cost) of the dismantling options. They also looked at possible revenue from land sales and the new property tax revenues that could be generated.

2.8 A PLAN IS ESSENTIAL: MASTERPLANS AND DESIGN GUIDELINES

All of the examples included analysis of existing land use and built context, a public discussion of options for future land use, and the preparation of a master plan for redevelopment. Some communities even went so far as to prepare design guidelines. In most cases, the analysis extended beyond the limits of the demolition site to include the surrounding area. For the Cogswell interchange, the study area would potentially include not only the Interchange site but also the entire Downtown North Side bounded by Cogswell, Brunswick, Cornwallis and the harbour. It is difficult to envision the redevelopment of the Cogswell interchange without taking the adjacent area into consideration, because the redeveloped site would have to be integrated carefully with its surroundings.

ADD: Urban Planning considerations Comments - public open space reductions plausible if private open space & ped-grade designs are well planned.

2.9 CONSIDER ADJACENT LAND OWNERSHIP

A review of the case studies shows that a detailed understanding of surrounding land ownership in relation to the proposed redevelopment is essential. Will extra land be needed to carry out the road realignment or other alterations to infrastructure? How might surplus land parcels be best consolidated with adjacent parcels to optimize development potential? These sorts of issues need to be decided before the project is "announced", otherwise the cost of assembling land at a later date could increase dramatically. For example, in the case of the Cogswell project, how will the NSPI sub-station be dealt with?

2.10 TAX REVENUE CAN JUSTIFY THE PROJECT

In several case studies, particularly the Milwaukee example, the rationale for demolition was based partly on the economic impact of new investment that would occur, as well as the increased property tax revenue from both new and existing properties. The assessment of property tax revenue will be an important consideration in the evaluation of the Cogswell project.

2.11 MUNICIPAL PLAN REVIEW AND ZONING AMENDMENTS

In some cases, the redevelopment potential of the site was tied into zoning amendments that were designed to encourage new development by allowing increased density and a greater range of permitted uses, or greater flexibility in the planning approval process. These techniques were used by the City of San Francisco for the Central Freeway/Octavia Boulevard project. As the project created new land that the City could sell, the implementation of these changes resulted in increased revenue from land sales. This is an especially relevant for the Cogswell Interchange, as land sales revenue will likely comprise a larger portion of the total project revenue, and therefore HRM should take steps to ensure it maximizes the revenue it gets for the land.

2.12 AN ENVIRONMENTAL ASSESSMENT IS ESSENTIAL

In some of the case studies, environmental contamination from past activities dramatically increased the original cost estimate of the project. For example, the excavation of an old pre-expressway factory significantly increased the cost of the Gardner Expressway project. Although these contingencies can never be completely ruled out, the use of environmental assessments to screen the Cogswell lands should dramatically reduce the risk of cost overruns at a later date, and would provide HRM with a reasonable estimate now for inclusion in the final cost benefit analysis.

2.13 KNOW WHERE THE MUNICIPAL INFRASTRUCTURE IS LOCATED

The existing infrastructure of sewer, water, electrical, drainage systems, etc. need to be thoroughly researched so that there are no costly surprises. This would include the identification of active and inactive water and sewer pipes, etc. Although it would appear that this will probably not be a problem within the Cogswell Interchange, unforeseen utility conflicts involving sewers and a water main resulted in a $1 million (2.5% of the total budget) cost overrun during the Gardner Expressway project. A possible risk in the Cogswell Interchange is the effect of a sewer easement over the tunnel currently being bored under the CDB and Cogswell site.

2.14 DETAILED BIDDING DOCUMENTS CAN GENERATE BETTER TENDER PRICES

Contractors don't like uncertainty, and when faced with it while bidding on a project, they typically increase their price to cover off any potential risk. The chance of this happening can be reduced if the municipality's bidding package is well documented, and the contractors are given an adequate amount of time to prepare their bids. In the case of the Gardiner Expressway, the successful contractor's bid for the demolition came in much lower than expected due in large part to the detailed engineering design and staging plan that was specified in the City's tender package, as well as the generous tender period of six weeks (which enabled the contractor to carry out detailed estimates and obtain firm commitments from his subcontractors). The *quid pro quo* of this, however, was that the project had to proceed according to a very strict timetable in order for the contractor to be able to deliver the project at such a low price.

2.15 TRAFFIC MANAGEMENT PLANS ARE NEEDED TO AVOID GRIDLOCK

The Gardiner, Milwaukee Park East and San Francisco Central Freeway experiences all show the value of working out a detailed Staging Plan before hand. His plan clearly itemizes the steps involved in the demolition, and provides a detailed Traffic Management Plan that addresses detours, temporary signaling, etc. In all cases the logistical details were made available to the public through liaison committee meetings,

newsletters, and websites, so that that anyone who was interested or affected could find out what was going on and participate in making logistical improvements.

2.16 NOISE, DUST & BUSINESS INTERRUPTION SHOULD BE EXPECTED

Highway demolition and reconstruction projects are noisy, dusty operations that can cause inconvenience and disruption to neighbouring residences and businesses. In the case of the Gardiner East demolition, noise was a big issue for a neighbouring film studio. Initial plans to muffle noise with movable acoustic fences proved unsatisfactory. After complaints and negotiations, a solution was found in coordinating the demolition operations with the filming operations to ensure that neither was happening at the same time. At Cogswell, this would be a significant matter, particularly in relation to the neighbouring hotels and Casino.

2.17 RECYCLING MATERIALS CAN PAY DIVIDENDS

The Gardiner East Expressway was composed of 60,000 tons of concrete, 8,000 tons of steel and about three tons of aluminum. More than 90% of this was recycled. Recycling was made easier because the structure was dismantled piece by piece. Much of the crushed concrete was used in the reconstruction of Lakeshore Boulevard. Also, some of the existing supports and beams at the western end of the expressway were tied in with the new ramp structures. The savings in both costs and environmental resources are obvious and should be a guiding principle in the Cogswell project.

3.0 FINANCIAL ANALYSIS

This chapter reviews the financial implications of demolishing the Cogswell Interchange, and provides a cost benefit analysis, a review of financing options, and a conclusion as to whether or not the project is financially self sustaining.

3.1 COST BENEFIT ANALYSIS

While there may many reasons why residents of HRM would want to proceed with the redevelopment of the Cogswell Interchange right away, the municipality has a limited amount of funding for capital projects. This is particularly true in 2004, as the municipality has just committed more than $250 million towards the financing and construction of the Halifax Harbour Clean-up. It is within this context that HRM Council has indicated that if the Cogswell Interchange project is to proceed, it must be self-financing. Therefore, this chapter presents a cost benefit analysis of the proposed project. Using this approach the following variables need to be assessed:

Costs

- The estimated cost of dismantling the existing Cogswell Interchange and building a new street network and serviced development parcels;

Benefits

- Revenue from land sales
- Increased property taxes associated with nearby buildings, due to the removal of the Interchange
- Property taxes from new development (to the extent this development would not have come to HRM otherwise)
- Capital cost savings associated with not maintaining or repairing the existing interchange
- Reduced operating costs associated with an at-grade road network
- Grants and/or subsidies from provincial and federal partners
- Others as identified

3.2 ESTIMATED PROJECT COSTS

3.2.1 Vaughan Engineering Feasibility Study, 2001

To date, only a cursory amount of work has been done assessing the cost of demolishing the interchange and rebuilding the new road network. In 2001, HRM retained Vaughan Engineering to prepare a transportation engineering feasibility assessment of removing the Cogswell Interchange. This study identified ten redevelopment concepts and assessed each in terms of its level of traffic service and conformance with the Road and Traffic Association of Canada (RTAC) and HRM road design standards. It must be stressed that this study did not attempt to resolve a number of urban design issues, and the proposed solutions in many cases did not optimize the resulting land for development purposes. As well, most of the design alternatives tended to be constrained by the acceptable future slope of Cogswell Street (8%), even though most of the major east-west streets below Citadel Hill (e.g., Prince, George, Duke) have grades well in excess of 10%. As a result, while the study proves the redevelopment of the Interchange is possible, it is highly unlikely that any of these scenarios would actually be used to redevelop the site.

The Vaughan study also provided a cost estimate for the demolition of the interchange and reconstruction of a new at-grade road network. It is presented below.

Vaughan Engineering Cost Estimate For Cogswell Interchange: March 2001

Earthwork and Demolition	$ 1,900,000
Municipal Services	$ 2,200,000
Street Construction	$ 2,500,000
Landscaping	$ 500,000
Intersection Signals & Lighting	$ 500,000
Contingency 20%	$ 1,500,000
TOTAL	$ 9,100,000

As a review of this table indicates, the cost estimates are very rough, and are rounded to the nearest $100,000. Representatives of Vaughan Engineering (now MacDonnell Engineering) indicate that the purpose of the study was to ascertain the feasibility of removing the interchange and replacing it with an at grade road network. They also indicate that estimating the cost of the project was not their primary task, although they feel that their estimates can be used to determine the order of magnitude of the task.

Although the Vaughan Engineering cost estimate provides a 20% contingency, they did not provide a specific line item to address the potential cost of environmental contamination (e.g. contaminated soil used to backfill behind the retaining walls when the structure was built), or possible archaeology costs associated

with the project. This is unfortunate, as the case studies of other similar projects identified environmental remediation as one of the biggest potential risks for cost overruns.

3.2.2 Maritime Testing Environmental Assessment, 2004

In order to obtain a preliminary assessment of the site, HRM retained Maritime Testing in February 2004 to conduct a Phase I Environmental Assessment and a preliminary geotechnical / environmental investigation. The site work included six bore holes with laboratory testing for total petroleum hydrocarbons (BTEX), metals and PAH. The results indicate the following:

Environmental Assessment

- The site was part of the original settlement of Halifax. Mapping at the turn of the 20th century (1895-1914) indicates previous occupation by warehouses, wholesale grocers, marine suppliers, retail stores, marine enterprises and residential dwellings.
- The site is underlain by Halifax Formation Slates (Pyretic Slate). If this material is excavated during the development process, it will require costly disposal. This is similar to most sites on the Peninsula.
- There have been two well known hydrocarbon spills in the area: the lands around Metro Turning Point, and the former Irving Garage (now part of the sewage treatment site). Both spills were cleaned-up and were up gradient from the site, therefore they pose no risk of contamination.
- The Trade Mart building and Cogswell Tower both had old oil tanks removed in the past, and may pose some risk of contamination down gradient (i.e., within the Cogswell Interchange). The Cogswell Tower site previously housed a gas station.

Geotechnical/Environmental Sampling

- Core samples indicate that the soil used to backfill the retaining wall is clean fill and in general is not contaminated. There is a thin layer of black organic sediment across the site that corresponds to the elevation that was occupied from the late 1700's until the mid 1950's. This layer tends to be contaminated, but is fairly easy to identify.
- All six samples tested for TPH met commercial guidelines. Only one sample did not meet the more stringent TPH residential guidelines.
- Some test results exceeded residential guidelines for arsenic, copper, lead and zinc, although background arsenic levels on the Halifax Peninsula are known to be elevated.
- Some samples showed PAH concentrations slightly in excess of residential guidelines.

Overall, the environmental consultants were surprised at how little contamination was encountered, although the limited number of samples does not make this conclusive. The consultants recommend that some additional sampling work be conducted down gradient of the Trade Mart building and Cogswell Tower (to the depth of bedrock) to determine if any spills have occurred that would alter this preliminary analysis. Further work can then be done to refine a clean-up estimate once a physical masterplan has been prepared. It would appear that given the likely development format (medium to high rise urban buildings that require foundation piles), that most of the contaminants identified so far can be managed on-site as part of the development process.

It is too early to be able to make any reasonable estimates of the environmental cost associated with the clean-up of the Cogswell Interchange. The information derived from some additional site testing would help this appreciably. For now, a budget of $2 million is being carried. Given the low levels of existing contamination found in the initial samples, and assuming a managed approach to site remediation is used (i.e., leave contaminants where they are if they don't need to be moved, and bury others under road surfaces where appropriate), this should be sufficient.

3.2.3 Mitigation of Cultural Artifacts

Federal funding triggers a requirement to adhere to the Canadian Environmental Assessment Act (CEAA) which includes a review of archeological resources. Even without Federal Funding, the Nova Scotia Museum is becoming much more vigilant in the enforcement of the Special Places Act, and the need to conserve archaeological resources in high probability locations such as downtown Halifax. The Cogswell Interchange is such a location.

The cost of this work is not cheap. Site preparation work for the proposed sewage treatment plant site at Cornwallis and Barrington Streets (the northern part of the Cogswell Interchange) included a detailed archaeological assessment. This assessment concluded that the site had a long history of past settlement, and physical mitigation work was required. The resulting process unearthed numerous 18th century commodes (privies) and artifacts which were catalogued and recorded. It is the consultants understanding that approximately $250,000 was spent on the study and site mitigation process, or $100,000 per acre for the 2.6 acre site.

In order to refine this estimate further, a detailed phase 1 assessment of the remainder of the site will need to be conducted. This should cost approximately $25,000, and would include a paper review of historical maps, archives, the construction drawings for the Cogswell Interchange, etc. as well as a detailed mapping

exercise to piece together the history of the area[2]. The resulting report will be able to identify which areas were historically occupied, and given the likely damage caused by the construction of the interchange, which areas may still have a high probability of containing artifacts. At this point, it should be possible to further refine the budget needed to mitigate the site before construction can proceed.

In the interim, we have added a line item in the cost estimate equal to $100,000 per acre, times the 13.9 remaining acres, times a 25% discount for the economies of scale of the project. This discount takes into account the fact that if new roads can be built without a substantially altering the existing grade of the Interchange, then these lands would not need to be included in the calculation. The product of this calculation was then rounded to the nearest $100,000 to achieve a result of $1,000,000.

3.2.4 Revised Cost Estimate

Based on the preceding analysis, it would appear prudent to amend the Vaughan Engineering cost estimate to provide specific line items for consultation, planning, design, engineering, archeology and environmental remediation. The results are as follows:

Revised Cost Estimate: Cogswell Interchange Redevelopment

Description	Vaughan	Cantwell	Total
Earthwork and Demolition	$ 1,900,000		1,900,000
Municipal Services	$ 2,200,000		2,200,000
Street Construction	$ 2,500,000		2,500,000
Landscaping	$ 500,000		500,000
Intersection Signals & Lighting	$ 500,000		500,000
Contingency	$ 1,500,000		1,500,000
Planning, Design and Consultation		500,000	500,000
Archeology Work		1,000,000	1,000,000
Environmental Remediation		2,000,000	2,000,000
Total Cost of Removal	$ 9,100,000	$ 3,500,000	$ 12,600,000

The revised cost estimate is $12.6 million dollars. As the 2004 Federal budget exempts municipalities from HST, the cost of this tax is not included in the calculation.

[2]. A portion of this background review was already completed as part of the Maritime Testing Phase 1 environmental Assessment for the property conducted in February 2004.

3.3 REVENUE FROM LAND SALES

The Cogswell lands contain 16.5 acres of raw land. Referring to the Vaughan Engineering study, 8.1 acres are needed for new roads, and 2.6 acres is set aside for the sewage treatment plant, leaving 5.8 acres available for development or use as openspace. This calculation is shown in the following table.

Description	Acres	Square Feet
Total Land	16.5	718,740
Less Roads and Infrastructure	(8.1)	(352,836)
Less Sewage Treatment Plant Site	(2.6)	(113,256)
Land Available for Development	5.8	252,648

The actual amount of land available for development may vary slightly depending on the efficiency of the final land use plan.

3.3.1 The Effect of Development Density On Land Value

Although the amount of land available for development is fairly certain, its future value is not. This is because the value of land can vary dramatically depending on the type of land uses are allowed to be built, and the kind of density that is allowed. Given a constant land use (e.g., residential), the greater the density, the more valuable the parcel of land becomes. For example, residential developers typically price the amount they will pay for a parcel of land based on the residential unit yield, not the price per square foot. Therefore if Parcel A has the capacity to support 100 units, while Parcel B has the capacity to support 150 units, all things being equal, a developer will pay a 50% premium for Parcel B. This is a good rule of thumb, although it cannot be used without limits, as every market has a limited capacity to absorb new development. So, while a parcel may be capable of having 300 residential units built on it, if the market cannot absorb that level of construction activity within a reasonable period of time, the carrying costs of interest and taxes on the un-used capacity will reduce the financial viability of the overall development, not increase it. The same argument correlating development density and land value can be made with office, retail and hotel uses.

One way to measure the density of a site is through the use of a floor area ratio or FAR. The graphic on the following page illustrates this concept.

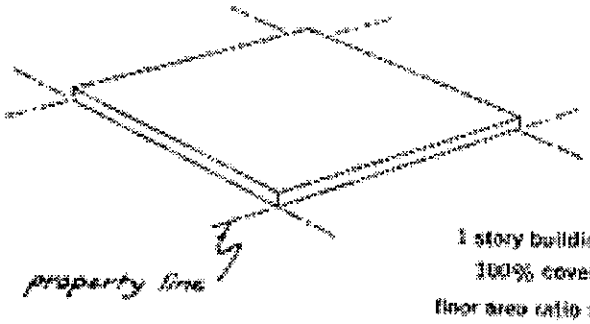
Floor Area Ratio = Total Gross Floor Area / Lot Size

Floor Area Ratio (F.A.R.)

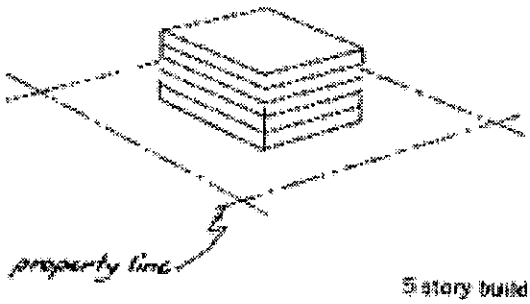
From Planning and Design Criteria by Joseph De Chiara and Lee Koppelm. Van Nostrand [1969].

Floor area ratio is the total floor area on a zoning lot, divided by the lot area of that zoning lot.

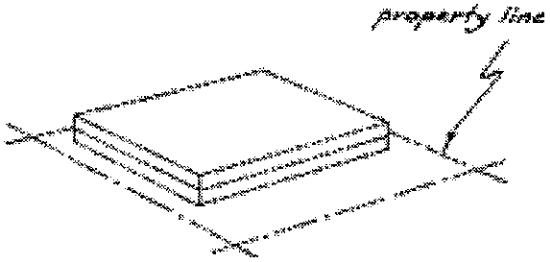
$$\text{FAR} = \frac{\text{total floor area}}{\text{total lot area}}$$



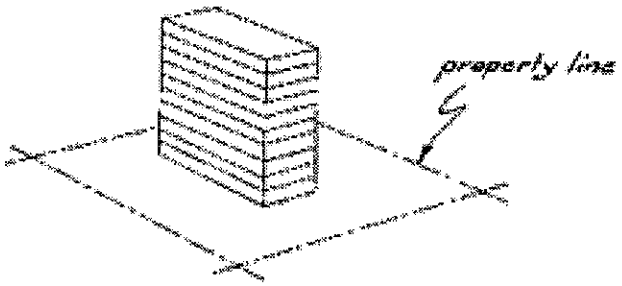
1 story building
100% cover
floor area ratio = 1.0



5 story building
20% cover
floor area ratio = 1.0



2 story building
50% cover
floor area ratio = 1.0



10 story building
10% cover
floor area ratio = 1.0

The FAR of a particular site is calculated by determining the total gross square footage of space in a building, and dividing it by the total size of the parcel the building is located on. For example, a 40,000 SF four storey building (10,000 SF footprint) that occupies half of a 20,000 SF site (the rest is surface parking) would achieve an FAR of two (e.g., 4 stories times 50% lot coverage = 2). Another way to look at this is that the total building square footage of 40,000 SF were laid out over the whole property footprint (20,000SF), how many times could it cover the site? In this case, twice. The FAR of a development is usually lower than the building height, and is proportional to the lot coverage of the building footprint.

The following table illustrates the connection between development density and the value of the lands within the Cogswell Interchange. It assesses the total build out of the 5.8 acres (252,648 SF) of land within the Cogswell Interchange using various FAR's (development densities). To keep the analysis simple, the whole site is assumed to be developed for residential uses.

Demonstration of the Effect of Density on Residential Land Value

FAR	Total Floor Area	Units @ 1,500 SF	Units Per Acre	People Per Acre	$ 20,000 Per Unit	Value Per SF
2	505,296	337	58	145	$ 6,740,000	$ 26.68
3	757,944	505	87	218	$10,100,000	$ 39.98
4	1,010,592	674	116	290	$13,480,000	$ 53.35
5	1,263,240	842	145	363	$16,840,000	$ 66.65
6	1,515,888	1,011	174	435	$20,220,000	$ 80.03

The mechanics of the table work as follows. The total land available (252,648) is multiplied times an FAR ranging from 2 to 6. This provides approximately 500,000 SF to 1.5 million square feet of floor area. If 1,500 SF is allocated for each residential unit (1,000 SF apartment, 150 SF circulation and 350 SF parking space) the parcel can support 337 to 1,011 units. This is the equivalent of 58 to 174 units per acre, or 145 to 435 people per acre (assuming 2.5 people per dwelling). Applying an average land value of $20,000 per unit generates a total value of $6.7 to $20.2 million or $27 to $80 per square foot of land.

Although the numbers have not been calibrated to a specific design, and it is not intended that the Cogswell be developed solely for residential, they do demonstrate the impact of density and height on land value. The implication for HRM is that the more density that is allowed within the Cogswell Interchange, the more viable the project will be. As well, it also indicates that it would be possible to concentrate density on portion of the site, thereby increasing its value, and enabling another portion of the site to be kept as open space or provided at no cost to a public use such as a performing arts centre.

NOTE: HRM does not currently regulate development density based on FAR's. For example, in the core part of the Halifax Peninsula, residential development density is limited to 250 persons per acre, an FAR of approximately 3.5, however this calculation completely ignores the commercial aspects of the project. For example, hotel rooms and office space are not covered by the 250 persons per acre calculation. The current density calculation is also based on the number of inhabited rooms in the unit, not its total square footage. This tends to encourage large inefficient units, which can cover more of the site, and do not optimize the number of people living downtown.

3.3.2 Estimated Revenue From Land Sales

Assuming that 100% of the lands created from the redevelopment of the Cogswell lands were developed from a combination of institutional, residential and commercial uses, it is reasonable to assume that the project can generate approximately $16 million of gross revenue[3]. This does not take into account the time value of money, land sales absorption rates, or the cost of brokerage fees (if any).

Land Use	Acres	S.F.	Value Per SF	Total
Institutional (Law Courts, Performing Arts)	2.0	87,120	$ 65	5,662,800
Residential (High Rise Apt. or Condo)	1.8	78,408	$ 45	3,528,360
Commercial (Hotel, Convention, Office)	2.0	87,120	$ 80	6,969,600
Total	5.8	252,648		16,160,760

If 10% of the lands within the Interchange were assigned for public facilities that did not generate any revenue, the remaining 5.2 acres of residential and commercial land sales would still generate just over $14 million of revenue.

Based on the research conducted for this study, the consultants identified a number government departments or agencies that may be interested in purchasing land in and around the Cogswell Interchange. Appendix B (Detailed Project Financial Information) contains a detailed description of the opportunity associated with the following groups. They include:

- Crombie Properties (formerly Halifax Developments Ltd)
- Trade Centre Limited (World Trade and Convention Centre)
- Nova Scotia Department of Justice (new Law Courts Facility)

[3]. These estimates are based on recent financial data, however Cantwell & Company Consulting Ltd is not a real estate appraisal firm, and makes no assurances about the accuracy of the numbers. HRM should retain an appraiser to prepare an estimate of value for the lands once a masterplan for the lands has been completed.

3.4 PROPERTY TAX REVENUE

3.4.1 Incremental Tax Revenue From Existing Properties

Tax Increment Financing is the dominant form of financing used in the United States to support the redevelopment of inner cities. The mechanics of this financing mechanism are as follows. The municipality identifies a particular area of the city that is in need of gentrification, and draws a redevelopment boundary around it. The total assessed value of all real estate within this redevelopment district is then calculated. The municipality then constructs a series of infrastructure improvements designed to encourage private sector development (e.g., parks, convention centres, etc.). As the total assessed value of the redevelopment district increases from new development, the incremental tax revenue (i.e., the annual tax payments over and above those received prior to the redevelopment) is set aside and then used to pay off the loan or bond used to construct the improvements.

In order to assess the impact of this method on the Cogswell Interchange, the consultants drew a redevelopment boundary around all property south of Cornwallis Street, north of Duke Street, and from Brunswick Street to Halifax Harbour. A review of data from the HRM Finance Department indicates that the cumulative assessed value in this area includes $30.8 million of residential property (mostly large apartment buildings in Scotia Square and on Brunswick Street) as well as $262 million of commercial tax base, including Scotia Square, Purdy's Wharf and Casino Nova Scotia. There is an additional $85.7 million of tax base associated with the Business Occupancy Tax. In total, this area contains $389.5 million of tax base, and generates $13.7 million of property and occupancy taxes a year, as outlined below.

Incremental Property Tax Revenue From Land Within One Block of the Cogswell Interchange

Property Type	Assessed Value	2003 Taxes	Additional Taxes 2.5%	NPV at 6.0%
Residential	$30,867,900	$449,745	$11,244	$187,394
Commercial	$262,612,653	$9,926,964	$248,174	$4,136,235
Tax Exempt	$10,293,800	$0	N/A	N/A
Business Occupancy	$85,742,353	$3,337,778	N/A	N/A
TOTAL	$389,516,706	$13,714,487	$259,418	**$4,323,629**

Source of Data: HRM Finance Department

Assuming the assessment base for just the residential and commercial components increase by 2.5% as a result of the redevelopment of the Cogswell Interchange, HRM would collect an additional $259,418 per year in property taxes. In order to be conservative, we have assumed that any redevelopment activity in the Cogswell Interchange would not increase the business occupancy assessment of properties around it, just the

base building assessment. As this additional property tax revenue would be paid in perpetuity (i.e., forever), the present value of this revenue stream can be calculated by dividing the annual cash flow by the desired capitalization rate. For this calculation we have used 6%, or roughly the Municipality's cost of funds through the Municipal Finance Corporation. This analysis indicates that a 2.5% increase in property taxes for buildings in the two blocks around the Cogswell Interchange will support $4.3 million in capital spending.

The following table illustrates the sensitivity of the previous analysis to different assumptions about the increase in property taxes (1.5% to 4.5%) and different capitalization rates (4% to 8%). This dollar figure represents the NPV of each property tax stream in perpetuity, and would support a similar level of construction.

Sensitivity of Property Tax Revenue to the % Tax Increase and Discount Rate

	4.0%	6.0%	8.0%
1.5% Increase	$3,891,266	$2,594,177	$1,945,633
2.5% Increase	$6,485,443	**$4,323,629**	$3,242,722
3.5% Increase	$9,079,620	$6,053,080	$4,539,810
4.5% Increase	$11,673,798	$7,782,532	$5,836,899

3.4.2 Property Tax Revenue From New Development

Although the U.S. model of tax increment financing incorporates property taxes from new development, the consultant's considered this to be a double counting of revenue and did not include it. In other words, if the Cogswell Interchange lands were not available for development, business and residents would purchase property elsewhere in the city, so the Cogswell Project is really not stimulating any new development activity, just re-locating revenue HRM was going to get anyway.

On the other hand, it is realistic to include property tax revenue generated by new firms who move into the region as a result of the Cogswell Interchange project. For example, say a company in the United States or Central Canada is interested in setting up a new corporate office in a city with similar attributes to Halifax. They might review locations such as Victoria, BC, London, ON, and Moncton, NB. As part of their site selection criteria they may want to be in a downtown location, but need to be able to construct their facility in a short period of time. Currently, Halifax is not able to accommodate this type of scenario, as the municipality does not control any large parcels of land for development within the Capital District, and the current planning framework within the Central Business District does not allow the fast approval of new projects. If by having serviced lands available within the Cogswell Interchange HRM were able to attract this hypothetical company, then the property tax revenue associated with this project could be attributed

towards the Cogswell redevelopment. In order to keep this analysis simple and conservative, we have assumed that none of the land developed in the Cogswell Interchange meets these criteria, however it is realistic to assume that this may happen.

3.4.3 Reduced Operating Costs and Avoided Capital Investment

HRM currently pays operating and maintenance cost that could be avoided if the Cogswell Interchange were demolished. These costs include landscape maintenance of the grass and trees within the Interchange (much of which is difficult to mow due to steep slopes), and additional snow dumping costs that are required as the road allowance adjacent to the retaining walls within the Interchange is not wide enough for snow storage.

Past engineering assessments conducted of the Cogswell Interchange structures indicate that they can probably survive until 2020 without any major capital improvements, however there is a certain amount of short term maintenance that is required. This includes proper maintenance of expansion joints, bearings in the overpass structures, and concrete repair work. Although there are no exact figures available, it is reasonable to assume that this could amount to $20,000 per year.

Annual Cost Savings From Demolition

Landscape Costs	$10,000
Snow Plowing	$10,000
Structural Maintenance	$20,000
Total Annual Cost Savings	$40,000

Source: HRM Transportation Engineering and Parks and Recreation

When taken together, it is reasonable to assume that a new at grade road system would be $40,000 per year less expensive to maintain than the current overpass system.

3.5 GOVERNMENT FUNDING

3.5.1 Financing Lessons from the Case Studies

As part of the review of other highway demolition projects (i.e., the case studies presented in Chapter 2), the consultants reviewed the cost and sources of financing for six projects. Unfortunately, as only one Canadian project was identified, most of the information relates to examples from the United States, where the financing component is not directly applicable to the Canadian situation. For instance, the U.S. Federal Transit Administration has several large funding programs in place at the current time that many cities are

accessing to finance these projects. These programs are not available in Canada, although the Infrastructure Canada Program does support transportation projects.

Gardiner Expressway, Toronto, Ontario. Although the City of Toronto applied for Federal and Provincial funding, its application was denied. Ultimately the City financed the $44 million project by itself through the issuance of bonds. In order to justify this investment, the City prepared a cost benefit analysis of the capital and operating costs of the project over a 50 year time frame (e.g., repairing the existing structure versus tearing it down and rebuilding at grade). This analysis indicated a $14 million cost saving to the City if the structures were demolished. According to staff, the main point was that the "argument" was won on the basis of comparing the capital costs of asset management of the two options over the 50 year period, not the operating costs, which are really just snow clearing, salting and minor repairs. This assessment was bolstered by the fact that the section of expressway to be dismantled was under utilized, and that there was no projected negative traffic impact from dismantling it.

Central Freeway, San Francisco, California. The City of San Francisco paid for 100% of the $45 million cost of dismantling this inner city freeway in 2003 (the only one of the five U.S. projects where there was no Federal financial support). In order to maximize the value of the seven acres of new land that was created, the municipality assessed the development capacity of each parcel and modified the zoning and land use by-laws to add as much value to this land as possible. This included the elimination of density limits, reduced minimum parking requirements, and the streamlining of the development approvals process. These techniques have a lot of applicability to the Cogswell Interchange project, as they provide the potential to enhance the value of the resulting land development parcels, thus improving HRM's ability to self finance this project.

Park East Freeway, Milwaukee, Wisconsin The original budget for this project was $25 million which was cost shared 80% by the Federal government (through the Interstate Construction Estimate Agreement) and 20% by the State of Wisconsin. Unfortunately, the cost of the project increased by $11 million after this funding had been approved. These additional costs were attributable land acquisition costs, additional bridge structure costs, and unforeseen environmental costs (asbestos contaminants in the sealants used as part of the original construction). Using tax increment financing bonds, the City of Milwaukee paid for 100% of these project cost overruns. The rationale to support this funding was that the incremental property tax revenues the project would generate for the City.

3.5.2 Federal Funding

A literature search revealed that there are not a lot of funding programs in place for infrastructure projects at the current time. That is not to say that there is not a fair amount of money, as the Canada Infrastructure Program has provided $2.6 billion dollars of Federal funds for the 2000-2007 funding period. This a national initiative, intended to complement and augment the existing capacity of provincial, territorial, and municipal governments to invest in physical infrastructure. The program has two components:

1. Infrastructure Canada Program (ICP), a $2.05 billion program for municipal infrastructure. and
2. Strategic Highway Infrastructure Program (SHIP), a $600 million highways program administered by Transport Canada.

Infrastructure Canada Program (ICP) 2000-2007. This fund provides $2 billion for large scale infrastructure projects. Under CSIF, the Federal government will contribute up to a maximum of 50% of the total project cost for projects that incorporate partnerships between government and other groups, and fulfill regional priorities. As this fund has been designated for large infrastructure projects, the size of the minimum project varies by the total population of the province based. In the case of Nova Scotia, the minimum total project size is $25 million. Although the total estimated project cost of approximately $10 to $15 million is below the threshold for projects under this fund, by combining the Cogswell component with one or more eligible projects such as a multi-modal transit terminal, or new arena/convention centre, the overall project cost could be made large enough to qualify.

Eligible Projects. The new program may invest in five categories of infrastructure that are vital to advancing Canada's social and economic objectives:

1. Highway and Railway Infrastructure..
2. Local Transportation Infrastructure.
3. Tourism or Urban Development Infrastructure
4. Water or Sewage Infrastructure.
5. Broadband.

Examples of Projects Funding Under the Infrastructure Program. Examples of projects funded to date under this program include the following:

- Kingston Ontario Wastewater Treatment plant. $25 million. July 2003.
- Thunder Bay water and sewage treatment project. $25 million. July 2003
- Expansion of Ottawa Congress Centre, Ottawa, ON. $30 Million. May 2003

- Twinning of the Trans-Canada Highway in New Brunswick . $400 million. April 2003
- Various highway improvement projects in Nova Scotia (twinning of Highway 101, and a portion of Highway 104 north of New Glasgow). $61 million. April 2003
- Red River Floodway expansion. $160 million. April 2003.
- Improvements to GO Transit & York Region Transit networks. $435 million, March 2003.
- Sewage treatment & water distribution for Summerside, PEI. $30 million, February 2003.
- Convention Centre Expansion, Vancouver, British Columbia. $500 million, Dec 2002

Funding for the program is allocated to the provinces using a population based formula. As a result of this formula, $65,282,000 was allocated to Nova Scotia. Once provincial and local matching funds are applied, the fund leverages a total of $195 million in spending. To date the majority of this funding has been allocated for sewer and water projects within the municipality, therefore there is virtually no room to fund the Cogswell project before the program expires in 2007.

Strategic Highway Infrastructure Fund (SHIP) 2002-2007. The SHIP fund is a component of the Canada Infrastructure Program and is administered by Transport Canada. This fund will provide $600 million for national highway infrastructure projects, primarily the upgrading of the Trans Canada Highway. The SHIP fund is oriented primarily towards the upgrading of national highway infrastructure (e.g., the Trans Canada Highway) and as such would not be a good match for the Cogswell Interchange project.

As the funding allocation under the 2000-2007 agreements may already be placed, if HRM wants to use these types of funding mechanisms, it may have to wait until the next round of subsidies are available (if in fact these programs are renewed). This may not be a problem, as the complexity of the Cogswell Interchange project may require 2 to 3 years of ground work before its is ready for implementation.

3.5.3 Provincial Funding

Other than matching funds under the Canada Infrastructure Program, the consultant's are not aware of any provincial funding sources that can be accessed for the Cogswell project, however, we believe that the Nova Scotia Gaming Corporation) could be a good partner for this project.

The Nova Scotia Gaming Corporation is the provincial entity that owns the Casino Nova Scotia, immediately adjacent to the Cogswell Interchange. The location of Casino Nova Scotia is not ideal. Although located directly on the harbour, this section of the waterfront does not have a large amount of pedestrian activity, and the casino's location is obscured by one of the retaining walls from the Cogswell Interchange. The

redevelopment of the Cogswell Interchange would make the Casino much more visible within the downtown, which would translate into increased profits for the Province – thus justifying an investment on their behalf to accelerate the project. For these reasons, the Nova Scotia Gaming Corporation is very interested in helping to accelerate the removal of the Cogswell Interchange, and would make an excellent financial partner for HRM in this venture.

3.6 NET COST BENEFIT AND CONCLUSION

The attached table summarizes the detailed presented in the preceding analysis, including the estimated cost of demolishing the interchange, revenue from land sales and the additional annual cash flow to HRM from reduced maintenance costs and increased property tax revenue. These sources of revenue and expenses have been allocated over a nine year period, and then discounted back to determine its net present value. The following assumptions were used in developing this analysis:

1. The proposed timeframe allows for planning approvals, additional engineering studies, the preparation of design documents, demolition and road reconstruction.
2. Ninety percent (90%) of the land created by the redevelopment of the interchange is sold for development, with 10% retained for public uses;
3. The analysis assumes no Federal or Provincial support is provided, even though it would appear that at least some support should be forthcoming;
4. All land prices and cost estimates are stated in 2004 dollars and have not been inflated in future years. It is assumed that all of the institutional land is sold in year four (the first year land is available), while the residential land is sold equally in years five and six, and half of the commercial land is sold in year seven and the other half in year nine.
5. The estimate of incremental property tax revenue from existing properties ($259,418 per year), and saved maintenance costs ($40,000 per year) are all stated in 2004 dollars and have not been inflated in future years.
6. The future value of the property tax perpetuity is calculated in year nine by capitalizing the year eight figures. This calculates the NPV of this cash flow stream at year ten. This number is subsequently discounted back to 2004 dollars.
7. A discount rate of 6% is used to capitalize future cashflows (i.e., the property tax revenue and operating cost savings) and to calculate the net present value of the project.

Cogswell Interchange - Cost Benefit Analysis
Cantwell & Company Consulting Limited
May, 2004

EXPENSES

Description	Vaughan	Cantwell	Total	2005 Year 1	2005 Year 2	2006 Year 3	2007 Year 4	2008 Year 5	2009 Year 6	2010 Year 7	2011 Year 8	2012 Year 9	Total
Earthwork and Demolition	$ (1,900,000)		(1,900,000)										
Municipal Services	$ (2,200,000)		(2,200,000)										
Street Construction	$ (2,500,000)		(2,500,000)										
Landscaping	$ (500,000)		(500,000)										
Intersection Signals & Lighting	$ (500,000)		(500,000)										
Contingency	$ (1,500,000)		(1,500,000)										
Planning, Design and Consultation		(500,000)	(500,000)										
Archeology Work		(1,000,000)	(1,000,000)										
Environmental Remediation		(2,000,000)	(2,000,000)										
Total Cost of Removal	$ (9,100,000)	$ (3,500,000)	$ (12,600,000)	(250,000)	(500,000)	(11,850,000)							(12,600,000)

LAND SALES

Description	Acres	S.F.
Total Land	16.50	718,740
Less Roads and Infrastructure	(8.10)	(352,836)
Less Sewage Treatment Plant Site	(2.60)	(113,256)
Land Available for Development	5.80	252,648

Land Use	Acres	S.F.	Value Per SF	Total	2005 Year 1	2005 Year 2	2006 Year 3	2007 Year 4	2008 Year 5	2009 Year 6	2010 Year 7	2011 Year 8	2012 Year 9	Total
Institutional (Law Courts, Performing Arts)	2.0	87,120	$ 65	5,662,800				5,662,800						5,662,800
Residential (High Rise Apt. or Condo)	1.8	78,408	$ 45	3,528,360					1,764,180	1,764,180				3,528,360
Commercial (Hotel, Convention, Office)	1.5	65,340	$ 80	5,227,200							2,613,600		2,613,600	5,227,200
Undeveloped Public Lands (10%)	0.5	21,780	$ -	-										
TOTAL REVENUE	5.8	252,648		14,418,360	-	-	-	5,662,800	1,764,180	1,764,180	2,613,600	-	2,613,600	14,418,360
NET CASH FLOW					$ (250,000)	$ (500,000)	$ (11,850,000)	$ 5,662,800	$ 1,764,180	$ 1,764,180	$ 2,613,600	$ -	$ 2,613,600	$ 1,818,360
Present Value Interest Factor (PVIF)	6.0%				1.0000	0.9434	0.8900	0.7921	0.7473	0.7050	0.6651	0.6274	0.5919	
Present Value of Cash Flow					$ (250,000)	$ (471,698)	$ (10,546,458)	$ 4,485,468	$ 1,318,298	$ 1,243,677	$ 1,738,193	$ -	$ 1,546,986	$ (935,534)

NET PRESENT VALUE OF THE REAL ESTATE DEAL **$ (935,534)**

ANNUAL REVENUE AND COST SAVINGS

	2005 Year 1	2005 Year 2	2006 Year 3	2007 Year 4	2008 Year 5	2009 Year 6	2010 Year 7	2011 Year 8	2012 Year 9	Total
Incremental Property Taxes - Surrounding Lands				259,418	259,418	259,418	259,418	259,418		1,297,089
Cost Savings - Landscape, Snow and Maintenance			40,000	40,000	40,000	40,000	40,000	40,000		240,000
PV of Perpetuity in Year 10 @ 6%			-	-	-	-	-	-	4,990,295	4,990,295
Total	-	-	40,000	299,418	299,418	299,418	299,418	299,418	4,990,295	6,527,384
Present Value Interest Factor	1.0000	0.9434	0.8900	0.7921	0.7473	0.7050	0.6651	0.6274	0.5919	
Present Value of Cash Flow	$ -	$ -	$ 35,600	$ 237,167	$ 223,742	$ 211,078	$ 199,130	$ 187,858	$ 2,953,748	$ 4,048,323

NET PRESENT VALUE OF THE ANNUAL PROPERTY TAXES AND COST SAVINGS **$ 4,048,323**

	2005 Year 1	2005 Year 2	2006 Year 3	2007 Year 4	2008 Year 5	2009 Year 6	2010 Year 7	2011 Year 8	2012 Year 9	Total
NET PRESENT VALUE OF ALL CASHFLOWS	(250,000)	(471,698)	(10,510,858)	4,722,635	1,542,040	1,454,755	1,937,323	187,858	4,500,734	**$ 3,112,790**

3.6.1 Net Present Value of the Real Estate Deal

Based on this analysis, the total project costs $12.6 million to implement, and generates $14.4 million of revenue from land sales, producing a $1.8 million cash surplus. However, when the time value of money is incorporated into this analysis, this $1.8 million surplus becomes a $935,000 shortfall. The reason for this is that the cost of construction occurs upfront, while revenue from land sales are not collected until a later date. Depending on the timing of land sales, these numbers could change. For example, if more land were pre-sold upfront, it is likely that just the real estate component would generate a positive net present value.

3.6.2 Net Present Value of Incremental Property Taxes and Cost Savings

However, in addition to the revenue from the sale of land, HRM will also enjoy an increase in the property tax assessment of existing lands around the interchange. This was previously estimate to be worth $259,000 per year. We have assumed HRM would start seeing this cashflow in year four (the first full year after the completion of the redevelopment project). In addition, we have previously estimated the annual cost savings from landscaping, snow plowing and deferred maintenance at $40,000 per year. When these two cashflows are discounted back to 2004 dollars, they generate just over $4 million of benefit to HRM.

Taken as a whole, the combined net present value from both income streams is $3.1 million over the life of the project. This means that revenue (land sale) projections could be reduced by about one third before the project would no longer generate a positive net present value. Based on this analysis, it is the consultants opinion that the redevelopment of the Cogswell Interchange is financially viable, and can be self financing.

3.7 FINANCING OPTIONS

Now that it has been determined that the redevelopment of the Cogswell Interchange is financially viable, this section will present some summary information about financing options that are available to HRM. For a more detailed description of financing options available, please refer to Appendix B.

3.71. The Municipal Finance Corporation

The Municipal Finance Corporation (MFC) is the primary source of funds for most municipalities. HRM regularly borrows funds from this Provincial agency, and it is highly likely that this could be used as a source of funds for the redevelopment of the Cogswell Interchange.

3.7.2 Commercial Banks

Under certain exceptions to the Municipal Government Act, municipalities are permitted to borrow from commercial banks. These exceptions typically relate to the need for short term funds. Depending on the

specific needs of the development (i.e., if a high percentage of land has been sold and HRM only needs access to a small percentage of funds for a short period of time), this may be a useful source of financing.

3.7.3 Institutional Investors

Large institutional investors (insurance companies and pension funds) are a source of financing for the private sector real estate community. For example, pension funds are behind the ownership of the Purdy's Wharf complex. While this is a viable source of funding, it is not one that makes sense for a municipality, and is a better match for the private sector development community.

3.7.4 Engineering Firms

Some large engineering firms such as SNC Lavalin finance the projects they design as a way to generate additional work. Research into this practice reveals that this type of financing is typically used to secure large contracts in target sectors such as toll roads, dams, bridges, etc., especially those that generate future revenue/tolls. Based on conversations with several engineering firms, the Cogswell project would most likely not qualify for this type of financing.

3.7.5 Construction Firms

Some large construction firms have the ability to finance projects the size of the Cogswell Interchange. Under this scenario, the financing of the project would be included with the tender for project construction. Most likely the terms of this arrangement would require HRM to be the project proponent, and that the cost of construction would be re-paid to the contractor over five years with interest. This option would work well in a design build scenario.

4.0 REDEVELOPMENT STRATEGY AND ACTION PLAN

4.1 PROJECT RATIONALE

Based on the cost benefit analysis conducted in the previous chapter, it would appear that the redevelopment of the Cogswell Interchange is a financially viable proposition, and can be self financing under the right terms and conditions. In addition to the financial (i.e., quantitative) argument, there are also a number of qualitative arguments that support the redevelopment of the Interchange. They include:

4.1.1 Removing Cogswell Supports Other Community Planning Initiatives

From a community and town planning perspective, the removal of the Cogswell Interchange will reconnect the Gottingen Street neighbourhood and the residential communities to the North, to the Central Business District. Its removal will also allow HRM to re-create the entrance to the Capital District and downtown Halifax. This is particularly important, as the current entrance into downtown via the Cogswell Interchange presents a unattractive image, with wide areas of pavement, high retaining walls, and very little vehicular or pedestrian activity; not an appropriate image for the Capital city of Atlantic Canada.

4.1.2 A New Approach to Economic Development

The use of industrial and business parks by municipalities as economic development tools has been prevalent for decades. In HRM, the Burnside Business Park has attracted hundreds of local and out of province businesses and is now responsible for a large percentage of HRM's employment and commercial tax base. While the argument for assembling and servicing industrial land has always been understood by Council, downtown has rarely received the same treatment. This is all the more critical when one considers the problems associated assembling land downtown, and the long time associated with the development agreement process. In order to ensure that HRM is able to capitalize on companies from outside the region looking at establishing an office in Halifax, Council should consider using the land base within the Cogswell Interchange as a economic land reserve. This could provide HRM with a competitive advantage over other similar sized cities, and would allow HRM to achieve a state of readiness to support business attraction and retention

4.1.3 The Cogswell Interchange Can Help Manage Growth

From a regional planning perspective, there will be a need for a new office tower in the Capital District at some point in the future. Although this is unlikely to occur during the next 5 to 10 years, if one takes a long term perspective (e.g., 25 years), it will happen at some point. This means that the Central Business District

will need to expand, which may not be an easy task given the constraints imposed by heritage buildings in the downtown core, and view plane restrictions from Citadel Hill. The Cogswell Interchange is a very appropriate location for a new office tower, as it sits outside the Citadel Hill view planes, and with the exception of the southern border (Historic Properties), has virtually no heritage restrictions that will need to be addressed. For these reasons, some portion of the Cogswell lands should be reserved for the future development of office space, thus helping to keep some portion of the future demand for new office space in an urban location.

4.1.4 The Cogswell Interchange is the Public's First Priority For The Capital District

The Cogswell Interchange project was identified as the number one priority by HRM residents as part of the initial visioning process for the Capital District Commission. More than any other project, it represents the wishes of the community, and would symbolize the transformation of the District into the new downtown HRM.

4.1.5 The Cogswell Is A Self Financing Proposition

Based on the cost benefit analysis prepared in the previous chapter, under the right circumstances it appears that the redevelopment of the Cogswell Interchange is a self financing proposition. In order to move the project forward, HRM needs to refine several aspects of this cost benefit analysis to eliminate the risk of cost overruns or inadequate sales. This will most likely include pre-selling a percentage of the land before the project proceeds.

4.2 PROJECT TIMING

When should HRM proceed with the redevelopment of the Cogswell Interchange? Engineering studies indicate that the overpass structures within the Cogswell Interchange are still in reasonably good shape and can probably continue to exist with fairly little capital maintenance for at least 10 to 15 years. Some might argue that HRM has more important things to focus on at the current time, and if the overpass structures don't need any capital upgrades, why not just wait until they are ready to fall down, and redevelop the site at that time? Although there is a fair amount of logic to this argument, the biggest argument against it is that it does not take a proactive approach to the situation. This is a very important consideration, as even if HRM wanted to demolish the Interchange tomorrow it would take at least two years of consultation, planning and additional studies before the project was ready to proceed.

At this point, time is on HRM's side. Rather than wait until some sort of event makes the removal of the interchange an urgent proposition, HRM should move forward with the public consultation process, conduct

some of the studies that will be needed in order to obtain regulatory approval to proceed, and negotiate with funding and financial partners in order to remove the uncertainty associated with the project (i.e., obtain funding agreements or purchase and sale agreements). If at any point, new information changes the financial analysis (e.g., new environmental data indicates a greatly increased cost), the project can be delayed, however the more information that is collected, the more the risk associated with the decision can be reduced.

4.3 IMPLEMENTATION PLAN FOR THE COGSWELL INTERCHANGE

HRM should commit funds for the Cogswell Interchange to the Capital District Commission for a multi-year period so that it can move forward with the implementation of the public consultation process and the additional studies needed in order to finalize the decision to remove the interchange. This section outlines a step by step approach towards achieving this goal.

4.3.1 The Capital District Should Publish a Vision for the Cogswell Interchange

A vision statement is needed for the redevelopment of the site. This statement would set a broad goal and several objectives for the redevelopment of the interchange, and would help the Capital District Commission communicate Council's intent for the property. In some respects, this was completed as part of Capital District Vision report prepared in 2002, and the subsequent report for this project prepared by staff from the Capital District Commission, but this should be updated based on the results of this study.

4.3.2 Appoint a Project Manager For the Project

In order for the project to move forward at a steady pace, and to ensure that the process is managed properly, HRM should dedicate someone to the Cogswell Interchange project. While this could be an HRM staff person, given the current regional planning workload, and the specialized requirements associated with the project, it probably makes more sense to contract this task out. The project manager should have a background in real estate development, contract negotiations, and public masterplanning processes. This person/group would hire and manage the background consulting studies identified in this section, coordinate the masterplanning process, negotiate the sale of property, and management demolition and road reconstruction process. There are opportunities at every stop of this project to save money, or increase the financing return to HRM, and the person/group assigned to this task will easily pay for their fee through the enhanced financing performance of the project.

4.3.3 Refine The Cost Estimates Associated With the Project

Any significant change in the underlying cost structure could have a substantial impact on the economic viability of the project (or Council's decision using a cost benefit analysis). To reduce the likelihood of this, HRM should commission some additional engineering feasibility studies to refine existing cost estimates. By purchasing additional information, the risk associated with the project can be reduced. Work to be commissioned should include the following:

- Prepare a detailed land ownership survey of the Interchange. This would identify current owners, if parcels of land are missing from the base layer (unclaimed), and could include digitized old maps of the area (1919 and 1961). This work should also identify the local of abandoned and active municipal infrastructure such as water and sewer lines. These maps will form the digital foundation for other consultants to work from.
- Additional environmental sampling is needed to ensure that the areas down gradient of the Cogswell Tower (site of a former gas station) and Trade Mart Building are relatively free of environmental contamination.
- Prepare an archaeological screening of the property. This phase one report will help identify how much of the Interchange is likely to harbour artifacts, and will help determine which areas should be sampled during construction. This will also help refine the current cost estimates.
- A quantity survey of demolition costs and municipal road construction (preferably this should be conducted by municipal construction firm with experience in large scale demolition projects) should be prepared for the proposed Vaughan configuration. This only needs be a Class C estimate that updates the existing information until a proper masterplan is prepared for the property.
- Others as identified

4.3.4 Update the Cost Benefit Analysis From This Project

Once the above noted studies have been completed, the cost benefit analysis included in this report should be updated to make sure that the basic economic argument has not changed dramatically.

4.3.5 Present the Current Plan to the Public

The Cogswell Interchange is a very high profile project, and has been the topic of discussion at the Capital District visioning workshop, as well as past studies by HRM and the Downtown Halifax Business Commission. In order keep the community informed, HRM should communicate to the public the results of this feasibility study, and outline the series of steps that will be taken over the next 12 to 24 months. This could take the form of a public meeting, a press release, or the distribution of information through a newsletter; preferably all of the above.

4.3.6 Determine the Viability of Several Major Anchor Projects

the financial analysis indicates that HRM should identify at least one major anchor project before moving forward with the project. Possible anchors include: a performing arts centre, new consolidated provincial law court, or some component of the Metro Centre/World Trade and Convention Centre complex. The approach for each is different. As identified in the Capital District Infrastructure Needs Assessment (Cantwell & Company 2004), HRM should commission a feasibility study for a new performing arts centre. The NS Department of Justice is currently preparing a masterplan for its four courthouse facilities in HRM. The Cogswell Interchange site has emerged as one of the top potential sites for a new facility. Finally, Trade Centre Limited has been publicly discussing the need for new facilities. Although there are urban design concerns about the ability of the Cogswell lands to host a new Metro Centre or convention facility (i.e., it may be so large as to overwhelm the site), some preliminary work should be (e., massing studies) done to determine whether or not this is even possible on the site.

4.3.7 Identify Financial Partners For the Project

HRM should approach the Greater Halifax Partnership, the Nova Scotia Gaming Corporation, NS Department of Justice, Trade Centre Limited, and adjacent property owners (e.g., Halifax Developments Limited, Great West Life, Karlsen's Wharf, DND, etc) about becoming partners in the redevelopment of the project. This may involve letters of intent, or current commitments to purchase land at an appraised value once the project is complete.

4.3.8 Apply for Federal Infrastructure Funding

A funding application should be submitted to the Federal Government to obtain assistance in subsidizing the cost of the demolition and redevelopment of the site. This might be possible through the Canada Strategic Infrastructure Fund if it is extended past 2007, and if the Cogswell Interchange were combined with another project (i.e., a convention centre of performing arts facility) in order to get the size of the project beyond the minimum funding criteria ($25 million).

4.3.9 Prepare A Masterplan And Design Guidelines

A consulting team consisting of architects, landscape architects, engineers and urban designers will need to be retained in order to prepare a comprehensive masterplan for the Cogswell lands. Ideally, this plan would be specifically tailored to the needs of the anchor tenants that have been identified for the project. This process should include input from HRM's project manager, HRM planning and engineering staff, and a substantial amount of public consultation (see below).

4.3.10 Solicit Public Consultation (Phase 2) Into the Masterplanning Process

The masterplanning process should include a significant public consultation component. HRM regional council will need to decide whether or not they wish to provide funding for public open space within the redevelopment area before the public is asked to provide input into the plan. In this way, the public can be given some parameters about what can be supported financially (i.e., HRM needs to achieve an FAR of 4 over 90% of the site, etc.). Based on this process, the final mix of land uses for the property would be determined.

4.3.11 Amend The Municipal Plan and Enable Fast-track Development

HRM has the opportunity to add value to the Cogswell lands by up-zoning the density of development that is allowed on the property. The sale of the resulting land parcels would also be enhanced through the streamlining of the development approvals process.

4.3.12 Determine If Additional Lands Need to Be Acquired

It would be appropriate to conduct a detailed land ownership survey of the Cogswell lands before any property is made available for sale. HRM should ensure that clean title to the property exists, and that there are not old easements or right of ways that could slow down the land sales process.

4.3.13 Prepare a Traffic Management Plan

A Traffic Management Plan should be prepared that addresses how traffic will be re-directly during the construction period. This re-routing will most likely have a negative effect on most of the streets running parallel to Barrington Street, including Brunswick, Gottingen, Agricola and Robie Streets.

4.3.14 Prepare a Communications Plan

A communications plan will need to be developed. This will provide information to the public on the timeframe for demolition and redevelopment, and provide updates on construction activity, traffic detours, etc. This plan can be prepared in-house, or outsourced to a consulting group. A section of the HRM web page should be set up to display this information. Flyers can be used to direct interested people to the web page.

4.3.15 Prepare a Detailed Tender Package and Call for Proposals

At this point the project is ready to proceed. HRM should prepare detailed bid specifications for the demolition of the overpasses, remediation of contaminated soil, and reconstruction of the necessary at grade road network.

APPENDIX A
COGSWELL INTERCHANGE BEST PRACTICES STUDY

CASE STUDIES: EXAMPLES OF HIGHWAY DEMOLITION PROJECTS

In this section we examine the planning process, planning context and funding of six highway demolition projects in six cities:

1.1	Gardiner Expressway, Toronto, Ontario.....	Completed 2001
1.2	Park East Freeway, Milwaukee, Wisconsin.....	Completed April 2003
1.3	Central Freeway, San Francisco, California.	Phase 1 Completed 2003
1.4	Embarcadero Freeway, San Francisco, California.	Completed 1990/91
1.5	Interstate 30 Overhead/Lancaster Avenue, Fort Worth, Texas.	Completed 2001
1.6	Akron Innerbelt Freeway, Akron, Ohio	Currently under study

These examples were chosen primarily for their currency, except for the Embarcadero in San Francisco, which was selected because it was the first demolition of this type to take place in North America (in 1990). However, even the Embarcadero has currency because the redevelopment that followed the demolition is still going on, with elements of the project only now having the right combination of funding and partners to bring them to fruition.

All of the examples have the common thread that the demolition of the highway infrastructure is a means for reconnecting (and healing) parts of the city that were severed by the initial highway construction.

The Gardiner Expressway demolition is the only Canadian example and offers useful, detailed information about the demolition process, the studies that led up to it, the content of traffic management plans, and the types of things that led to delays and unforeseen costs.

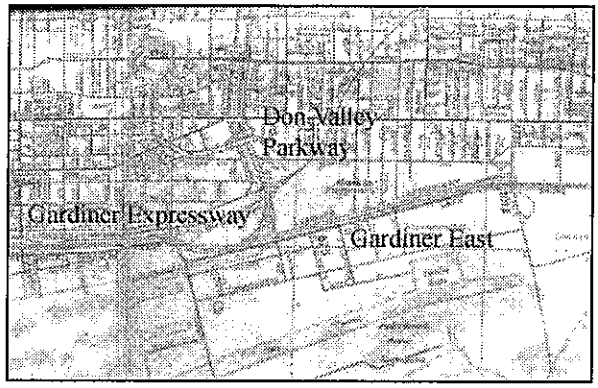
The Park East example, from Milwaukee, yields useful information about the rationale for demolition, the phasing of demolition, the master planning process for redevelopment, including the process of urban design, and the use of planning and zoning tools to encourage redevelopment.

The Central Freeway in San Francisco and Interstate 30 in Fort Worth provide useful illustrations of the link between removal of inappropriate, aging highway infrastructure and neighbourhood revitalization, as well as the use of zoning tools to encourage redevelopment.

The example of Akron was chosen because it is at a similar stage as Halifax, i.e., currently considering demolition of a functioning piece of highway infrastructure that is expected to become costly to maintain in the future and which has the potential to release surplus land for development on the edge of the downtown. While offering no experience of demolition practice, the Akron example does illustrate the value of advocacy by a leading political figure (in this case the mayor) in promoting the idea and using it as a means to encourage public interest in downtown revitalization.

A.1 GARDINER EXPRESSWAY DEMOLITION, TORONTO, ONTARIO

Demolition of the eastern segment of the Gardiner Expressway in Toronto was completed in 2001 and Lakeshore Boulevard, the existing road below and beside the expressway, has been reconstructed to take all of the Gardiner East traffic. Final landscaping of the reconstructed boulevard is currently nearing completion. The 1.3 km-long elevated freeway was built in 1964 and was originally intended to extend all the way through from the Don Valley Parkway to Scarborough where it would connect up with Highway 401. The project ran out of money, however, and was abandoned in the 1970s, leaving the Gardiner East as an orphaned stub.



Planning Process

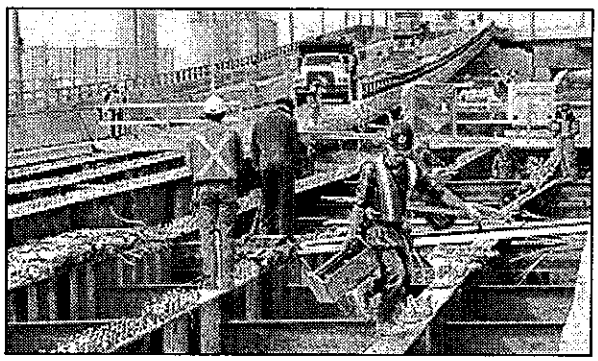
According to project engineer, George Rozanski, the idea to demolish the elevated freeway was first put forth in 1986 by a local councillor, who argued that it was an eyesore and that its removal would lead to a revitalization of the surrounding area. A report in 1988 by architect, Roger duToit, envisioned "returning the sunshine" to Lakeshore Boulevard and enhancing it with new, pedestrian friendly landscaping and bicycle lanes. The proposal was opposed by some other councillors and community interests, however, who argued that the expressway was needed for commuter traffic. A series of reports and a process of public consultation over subsequent years eventually resulted in approval of the project by Toronto City Council and Metro Toronto Council in 1997 and the Council of the newly amalgamated City in 1998. Detailed engineering and design work was carried out in 1999. Dismantling and reconstruction began in Spring 2000 and was substantially completed in Fall 2001. The "greening phase" ... landscaping, etc., was commenced in 2002 and is just wrapping up now in Spring 2003.

Dismantling Study

A detailed study of the proposed demolition was carried out for the City in 1997 by consultants, URS Cole Sherman. The study included roadway, structural, and traffic engineering, life cycle cost analysis, urban design, and public consultation.

As part of their traffic analysis, the consultants undertook a micro-simulation of traffic operations on Lakeshore Boulevard under three scenarios: 1) Do nothing; 2) Dismantle and provide new ramps onto the main part of the expressway to the west; or 3) Dismantle and provide no new ramps. The TRAF-NETSIM micro-simulation software package was used to assess levels of congestion and travel times under the three scenarios, and included consideration of the effects of recurring congestion at signalized intersections, the impacts of traffic signal cycle failures, and gridlock conditions.

Life cycle cost analysis was used to compare the long-term costs of the alternatives over a 20-year period, comparing the cost of maintaining the existing structure with the capital cost (and reduced maintenance cost) of the dismantling options. The conclusion was that demolition would save money in the long run.

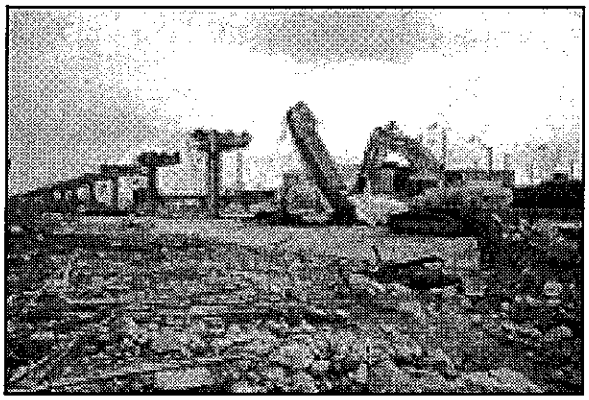


The design component of the study, which included comprehensive public involvement, led to a conclusive recommendation to dismantle the freeway, rebuild and enhance Lakeshore Boulevard at grade and connect it to the main part of the Gardiner and the Don Valley Parkway with a new set of ramps. In addition, the enhancements to Lakeshore Boulevard included new walkways, a bicycle path (including a new bridge over the Don River), landscaping, and public art in the form of concrete support pillars left standing as a sculptural

memorial to the dismantled expressway.

Staging Plan

The dismantling project was divided into three stages:



Stage 1: Commenced Fall 1999.
- Advance rail relocation.
- Minor improvements to the roads at each end of the Expressway, in anticipation of traffic detours during dismantling/reconstruction.

Stage 2: Commenced April 2000.
- Detour eastbound traffic along a parallel road (Commissioners Rd.).
- Dismantle the western end of the elevated structure and begin construction of a new eastbound off-ramp from the main Gardiner Expressway down to Lakeshore Boulevard.
- Begin construction of a pedestrian and bicycle bridge over Don River.

Stage 3: Commenced November 2000.
- Detour eastbound **and** westbound traffic along Commissioners Road.
- Begin construction of a new westbound on-ramp from Lakeshore Boulevard up to the main Gardiner Expressway.

The dismantling of the elevated structure was completed in May 2001. The reconstruction of Lakeshore Boulevard was completed in December 2001, leaving sections of sidewalk, the walkway, bicycle path, landscaping, and public art as the remaining components. These were delayed through to the Fall of 2002, however, by the discovery of heavy metal contamination in the soils next to the pedestrian areas, and the final landscaping components are only now reaching completion (see discussion below under *Contamination*).

Traffic Management Plan

Each stage was accompanied by a detailed traffic management plan including:
- Temporary traffic signals.
- Exclusive right turn/left turn lanes to increase intersection capacity.
- Pedestrian crossing prohibitions.
- Turn prohibitions at certain signalized intersections.
- Right turn on red prohibitions at a certain intersections due to restricted sight lines.
- U-turn prohibitions on the detour street (Commissioners Road) due to increased traffic volumes.
- Public meetings to gain input and feedback from the public on traffic issues.
- Adjustment of certain traffic bylaws to facilitate effective traffic movement during detours.

Public Liaison

A public Consultation Program was maintained throughout the project, consisting of periodic newsletters and a Construction Monitoring Committee, which met monthly to discuss construction issues, raise concerns and jointly work out solutions.

Property Acquisition

Small areas of additional property outside the existing Gardiner and Lakeshore highway right-of-way had to be acquired to facilitate completion of the project. Some were permanent acquisitions necessary for additions to the right-of-way or for utility realignment; others were temporary acquisitions for traffic detours during construction.

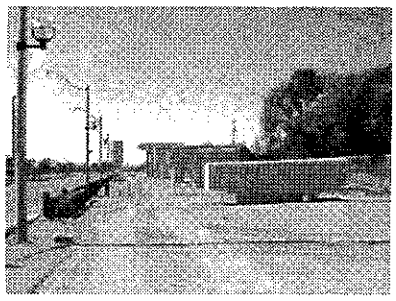
Noise
Dismantling Gardiner East was a noisy operation, involving hydraulic hole rams applying brute force to break up the concrete structure. Although the expressway ran through a predominantly industrial area, noise was still an issue, particularly in relation to a cluster of film studios located nearby. Engineering reports initially proposed that the studios be protected from noise by movable fences draped with acoustic blankets, but this proved unsatisfactory and resulted in complaints, delays and complicated negotiations with the studio owners. The eventual solution was to co-ordinate the hole-ramming with the filming schedule during the daytime, and agreement that there would no night work on the demolition.

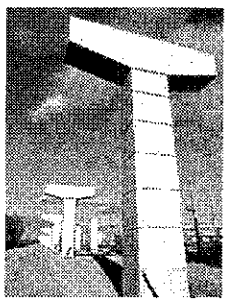
Dust
The project also generated a lot of dust, which was minimized by continuous hosing down. In January 2001, there was concern that the dust may be contaminated with lead, and work was stopped while tests were taken. The tests showed that lead concentrations were well below allowable limits. The standby costs for the stopped work amounted to $138,000.

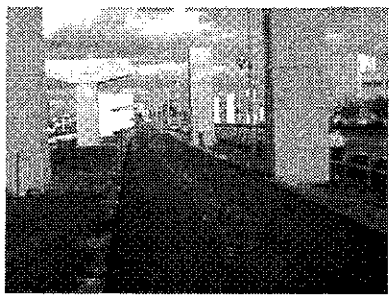
Soil Contamination
As mentioned above, in the latter stages of the project, soil contaminated with lead and hydrocarbons was discovered near the new pedestrian walkway, bike path and public landscaped areas at the eastern end of the dismantled freeway near Leslie Street. Due to public concern about this, the project was halted until solutions acceptable to the community could be found. According to the project engineer, trucking the contaminated material away would have cost $12 million whereas capping it with 5 feet of good soil to acceptable environmental standards cost $1.5 million. It took 8 months and $500,000 in consultant's fees to convince the community that capping would be acceptable. This was one of a number of unanticipated factors that led to delays and additional costs (see below).

Recycling materials
The Gardiner East Expressway was composed of 60,000 tons of concrete, 8,000 tons of steel and about three tons of aluminum. More than 90% of this was recycled. Recycling was made easier because the structure was dismantled piece by piece. Much of the crushed concrete was used in the reconstruction of Lakeshore Boulevard. Also, some of the existing supports and beams at the western end of the expressway were tied in with the new ramp structures.

Landscaping, Pedestrian Walkway, Bike Path and Public Art
The removal of the elevated expressway freed up a wide section of right-of-way that enabled construction of a landscaped pedestrian walkway and bike path, the latter being part of a Toronto-wide bike path network. A number of pillars and ramp support structures were kept as public art beside these paths.







Total Cost
The first estimate of the cost of the project, in 1998, was $35, 630, 000. Detailed engineering design work in 1999 raised this to $41,880,000. By August 2002 the estimated cost had risen to $44,289,000, including $600,000 for ongoing planting care between 2003 and 2005.

Some elements of the project ended up costing less than expected. For example, the successful contractor's bid for the demolition came in much lower than expected at $28,750,900. This was due in large part to the detailed engineering design and staging plan that was specified in the City's tender package as well as the long tender period of six weeks. The tender package and long tender period permitted the successful contractor to obtain firm commitments from his subcontractors, such as the foundation company and structural steel supplier. The *quid pro quo* of this, however, was that the project had to proceed according to a very strict timetable in order for the contractor to be able to deliver at the low price.

The main demolition contract accounted for about 75% of the total price. Engineering and design fees accounted for about 10%. Landscaping, the walkway and bike path, including the pedestrian & bike bridge over the Don River and the public art component accounted for about 8%. The remaining 7% was accounted for by items such as land acquisition, public consultation, utility relocation, geo-technical testing, traffic signals, etc.

Unforeseen costs and delays

- In addition to the items mentioned above, there were a number of unforeseen factors that resulted in delays and cost increases.
- In the spring of 2000, there was a concrete strike that caused a delay in pouring the footings for the new ramp. In order to keep on schedule, this work had to be accelerated once the strike was over with weekend shift work. The cost for this accelerated work amounted to approximately $320,000.
- During the excavation for the footings for the ramp, the groundwater was found to be contaminated with hydrocarbons. The cost to remove this contaminated water with the proper environmental procedures amounted to approximately $639,000.
- There were a number of unforeseen underground utility conflicts involving sewers and a water main. This resulted in considerable design modifications and utility relocation work in the amount of approximately $1,200,000.
- Additional design and construction supervision was also required for extra landscaping work authorized by Council in April 2000, and for an irrigation system requested by the Parks and Recreation Division of the Economic Development, Culture and Tourism Department.

Improved Property Values

Although no studies have been done on the effect of the removal of the elevated expressway upon adjacent property values, according to the project engineer there is anecdotal evidence that values have improved. Since the removal of the expressway a new grocery store has been built on nearby property, and the Canadian Tire Corporation has shown interest in building a new store on the site of an abandoned warehouse on property that was essentially blighted by the expressway. Since the removal of the expressway, there has been a general feeling in the abutting neighbourhoods that the whole appearance of the Lakeshore Boulevard area has been transformed for the better.

Future Expressway Removal Projects

The success of the removal of Gardiner East has triggered debate about of the possibility of removing the rest of the Gardiner Expressway through Downtown Toronto as part of a new Toronto Waterfront Development Plan. This would be a very much larger project than the Gardiner East removal, however. because of the huge amount of traffic (over 200,000 vehicles per day). It presently costs $25 million per year to maintain the downtown portion of the Expressway. In 2000, the Waterfront Development Task Force recommended that it should be removed and replaced with a through traffic tunnel, leaving the surface free for redevelopment and reconnection of the local downtown street network. The vision is that the removal of the overhead would reconnect downtown Toronto with its waterfront and reclaim a large amount of land for public open space, public facilities, new housing and business development, possibly in time for the 2008 Olympics (should the City be successful in its bid).

According to the project engineer, the removal of the downtown portion would be exceedingly complex from a technical point of view, and would require extraordinary measures for dust and noise control and traffic management. The City is in a good position to plan for this, however, having just gone through the experience of the Gardiner East removal.

Sources:

George Ryzanski, Senior Project Engineer, City of Toronto
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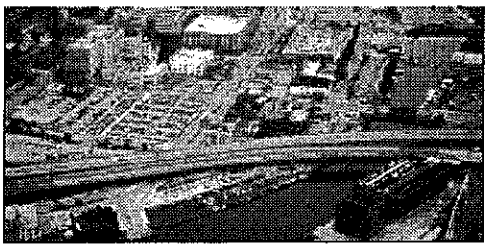
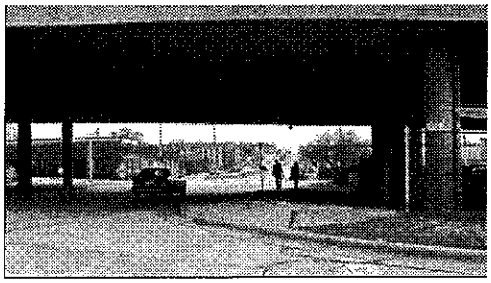
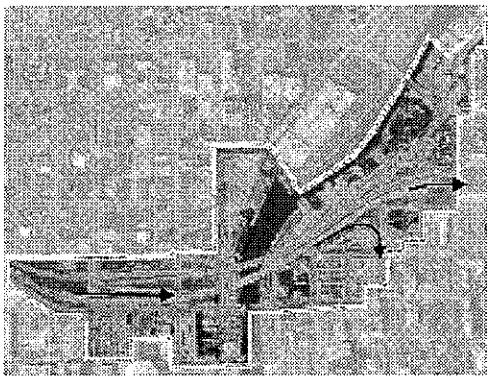
A.2 PARK EAST FREEWAY SPUR, MILWAUKEE



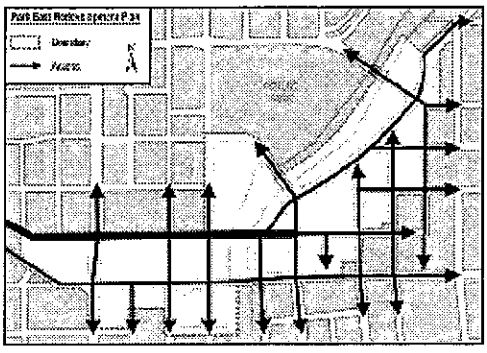
The City of Milwaukee has recently completed demolition of the Park East Freeway spur - an elevated road that is a remnant of an aborted 1960s plan to encircle downtown Milwaukee with freeways. An extensive freeway corridor was cleared in the mid-1970s in preparation for construction but only a one-mile segment was completed before the project came to a halt in response to local opposition.



The City has recognized that over its 30-year history, the six-lane, elevated freeway has been a blighting influence, devaluing property and inhibiting development on nearby land parcels, many of which have remained vacant and been used only for surface parking. The freeway created a physical barrier between the downtown and adjacent neighbourhoods, and provided only three exits into downtown streets. It was designed to carry a high volume of regional traffic but ended up carrying only about 39,000 vehicles a day and was no longer needed from a traffic-engineering point of view. The Wisconsin State Department of Transportation was initially opposed to the removal of the freeway, but was eventually persuaded by the low traffic volume and the realization that an at-grade urban street could handle it just as well.



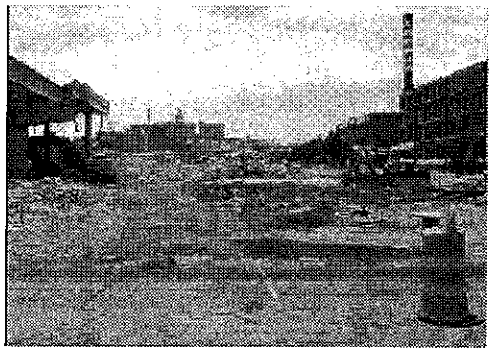
The concept for removal of the elevated freeway evolved from an extensive visioning and public consultation process leading up to the 1999 *Milwaukee Downtown Plan*. The Downtown Plan was prepared by consultants (A. Nelessen of New Jersey) in collaboration with the City and the Milwaukee Redevelopment Corporation (MRC) and identified the freeway removal as a key catalyst for continued investment in the downtown. The plan identified other catalytic projects as well, including a new public market, a riverside walk, new public squares, a museum and entertainment complex and a multi-model transit terminal and parking structure, but the freeway removal was key to all of these.



The 1 kilometre-long freeway will be replaced by an at-grade, six-lane boulevard (the existing McKinley Avenue, which will be widened), and the system of city blocks and street intersections that existed before the freeway was built will be re-established. This will reconnect downtown neighbourhoods, enhance local street access and increase the value and development potential of the land currently encumbered by the freeway. A new lift bridge (Knapp Street) will be built across the Milwaukee River to replace the existing freeway bridges.

The removal of the freeway will reclaim 11 city blocks (about 26 acres) for redevelopment and is expected to yield more than $250 million in new investment.
Demolition began in June 2002 and was completed on schedule in April 2003. Reconstruction of streets and related infrastructure is expected to be complete by June 2004. Once street reconstruction is complete, the reclaimed property will be made available for redevelopment by the private sector.

Phasing of Demolition and Redevelopment



This complex development project has two phases with different parties responsible for implementation in each phase.

Phase One is the removal of the elevated freeway and reconstruction of the historic street grid. This has required inter-governmental agreements between the City of Milwaukee, County of Milwaukee, Wisconsin Department of Transportation and the U.S. Department of Transportation on the removal, on changes to the surface streets to accommodate existing traffic, and on the disposition of the land occupied by the freeway. The redevelopment area encompasses approximately 64 acres exclusive of public right-of-way. The transportation easement underneath the freeway spur occupies about 16 acres and is owned by the State of Wisconsin. Following demolition, the property underneath the freeway spur will revert to Milwaukee County ownership and some or all of the land will become available for development once public improvements are completed and the easement is lifted. The City of Milwaukee/Redevelopment Authority owns approximately 3.7 acres of land within the redevelopment boundary, outside the transportation corridor. Much of the remaining privately owned land - approximately 37 acres - is either vacant or underutilized. It is the combination and assembly of these property interests that underpins the area's redevelopment potential.

Phase Two is the redevelopment of the reclaimed property. This principally will be a private sector undertaking with the development process negotiated and managed by the Redevelopment Authority of the City of Milwaukee (RACM), an arms-length redevelopment agency funded by the City. The Redevelopment Authority has statutory power to carry out renewal activities within the redevelopment area, including acquisition and disposition of property, and development and improvement of streets, utilities, parks, etc. deemed necessary to carry out the objectives of the redevelopment plan and to support new uses in the area. The RACM will be the lead agency in the implementation of the redevelopment plan.

Planning Process

Following the adoption of the 1999 *Downtown Master Plan* and the inter-governmental agreements, a planning team of state, county and city staff, as well as two consulting firms was created and a process of public consultation was initiated. The planning process involved participation and input by property owners, business leaders, residents, neighborhood organizations and elected officials. A web site was created and several newsletters were sent out to provide updates on the process and document review.

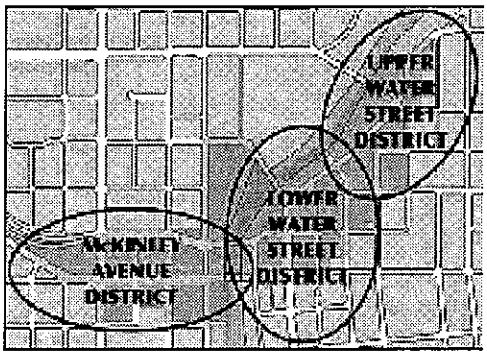
In 2001, the ***Park East Renewal Plan*** was prepared. This document:

- Defined the limits of the redevelopment area.
- Articulated overall objectives.
- Proposed changing the traditional zoning to a single, mixed-use zone.
- Surveyed the condition and code compliance of all properties within the redevelopment area
- Identified the properties that would have to be acquired by the Redevelopment Authority in order to carry out the project, with a detailed map and schedule of takings.
- Required all remaining properties within the area to be brought up to code at the owners' expense.
- Made provision for relocation payments to people and businesses displaced by the redevelopment.
- Outlined proposed public improvements including streets, signalized intersections and under-grounding of all utility distribution lines.

This was followed by the ***Park East Redevelopment Plan***, which was adopted in November 2002. The redevelopment plan consists of *Document 1: Renewal Plan; Document 2: Master Plan* and *Document 3: Development Code.*

The ***Master Plan*** provides detailed site analysis and proposes future land uses for three inter-related mixed-use districts within the redevelopment area. The *Development Code* provides detailed design guidelines for each district on a block by block basis.

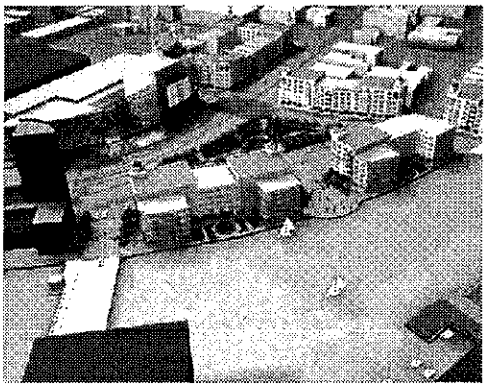
The ***McKinley Avenue District*** is envisioned as a gateway into the downtown, consisting of a new urban pedestrian boulevard with a "positive street edge design", lots of public landscaping and a mixture of residential, entertainment and office uses. The ***Lower Water Street District*** is an existing entertainment district, which until now has been cut off from the river by the freeway. The removal of the freeway will enable development of a riverside walk, new public plazas and green spaces and new office, entertainment, nightlife, retail and residential uses. The ***Upper Water Street District*** is a primarily residential district where the removal of the freeway will enable new in-fill residential, retail and live/work uses, as well as a continuation of the new, river walk. New landmark buildings and public plazas are envisioned in all three districts.



Redevelopment Master Plan Site Analysis

The analysis of the Park East Redevelopment Area included analysis of:

- Existing character and surrounding built context
- Site access for vehicles, pedestrians, bicycles, transit and parking as well as access to the riverfront.
- Infrastructure: utilities, sewer, water, streets and lighting.
- Environmental contamination, with prior uses of all blocks before the freeway was built being looked at closely.
- Historic resources.
- Quality of existing public spaces.
- Land ownership.
- Related policies and regulations, including the Downtown Plan, River Link Guidelines and zoning.



Redevelopment Master Plan for Land Use

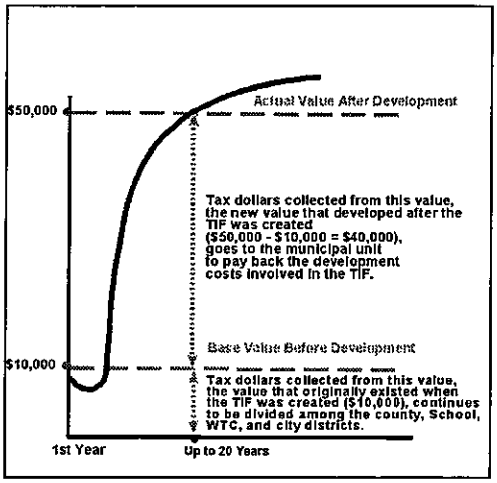
The underlying premise of the *Park East Redevelopment Master Plan* is that replacement and regeneration of the historic infrastructure of blocks, lots, and streets that was disrupted when the freeway was built will create the highest long-term value for the downtown and the surrounding metropolitan community. The proposed future land use scheme is framed in terms of:

- Precedents: "An effective land use plan responds to traditional patterns of urban development and identifies opportunities for innovation."
- Creation of critical public spaces "located such that they add value to surrounding buildings and facilitate visual linkages between sites."
- Encouragement of high quality urban experience and social and economic activity at street level through careful consideration of windows, entries, signage and other urban design details.

Financing

The original budget for demolition and street reconstruction was estimated at $25 million, with Federal money paying for about 80% under the Interstate Construction Estimate Agreement (an annual disposition of federal funds for transportation projects) and the City contributing $4.4 million through Tax Increment Financing (TIF). TIF is a mechanism for financing local economic development projects in underdeveloped and blighted areas. Future taxes generated by increased property values pay for land acquisition or needed public works. A TIF is based on two working principles:

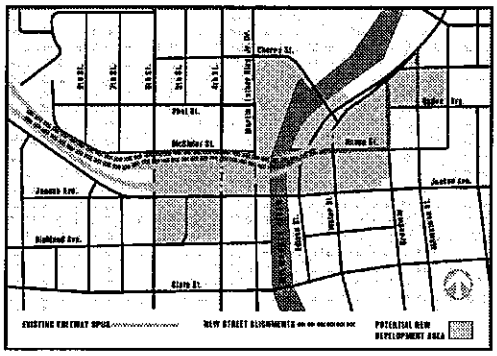
- New private development expands the municipality's tax base, thereby increasing property tax revenues over time.
- If the municipality must provide public improvements to attract the development, the overlying tax districts that benefit from the resulting increase in the community's tax base should share in the cost of the public improvements.



Once the project got underway, however, it became clear that an additional $11 million would be needed, due to under-estimates of the cost of property acquisition, unforeseen engineering details for bridge construction (water velocity on a fast-flowing bend in the river), and unforeseen environmental issues (disposal of asbestos-contaminated sealants used in the original, freeway construction). There was no problem raising this money through TIF, however, because the City is confident that its total $15 million investment will yield up to $1 billion in new assessment over the next 10 to fifteen years.

Demolition Process and Traffic Management

This began with demolition of the westbound lanes and the north section of the bridge, with traffic re-routed along the eastbound lanes (June-Sept 2002) and construction of the new roadway west of the river (June-Dec 2002). The new Knapp Street Bridge was begun in August 2002 and will open to traffic in Dec 2003 with finishing work continuing to May 2004. Demolition of the eastbound lanes commenced in January 2003 and concluded in April. Road modifications east of the river will continue to Nov 2003. The new street and bridge will be fully open in Dec 2003. Traffic details, re-routings, etc. are posted on the City's web site.



Planning Tools to Encourage Private Investment

The Master Plan identifies the following:

- *Public investment* in high quality urban design of streets, plazas and other public amenities adds value to surrounding private development. A clear plan optimizes the long-term value of public and private investments. Press articles at the time of the announcement of the Park East Freeway demolition confirm a hot real estate market positioning itself around the project in the expectation of increased property values.
- *Predictable Regulatory Process.* The detailed analysis, visioning and encoding of urban design guidelines articulated in the *Park East Redevelopment Plan,* lets the private sector know the parameters for development in any part of the district and encourages investor confidence.
- The creation of a *single, mixed-use zone* for the entire redevelopment area creates the greatest flexibility for land use proposals and encourages development.
- *Variety in Parcel Size.* The removal of the freeway will create a variety of parcel sizes for redevelopment. Smaller parcels will encourage in-fill retail and residential development. Larger parcels will enable larger footprint buildings and will attract bigger companies that currently operate in the suburbs.

- *Tax Incentives.* A portion of the Redevelopment Area lies within a newly created Renewal Community (RC) Area, which triggers certain federal tax incentives through the Department of Housing and Urban Development (HUD). These include: wage credits for new and existing employees who live and work in the RC; zero percent capital gains for RC assets; accelerated deprecation for machinery and equipment; and accelerated depreciation for new construction and rehabilitation projects.

The Park East planning process has been thoroughly documented with detailed reports, analysis, maps and computer-generated renderings of sites and proposals. A 10ft x 18ft scale model of the Redevelopment Area was the centrepiece of the formal unveiling of the project in November 2002. These details have helped the public and property developers understand and buy into the vision.

Redevelopment Projects

- The Harley Davidson Motorcycle Company plans to develop a $30 million motorcycle museum in or near the Park East Corridor. An initial plan to locate the museum in the former Schlitz Brewhouse just north of the district fell through in November 2002 because of higher than anticipated development costs. However, it is reported that the company is actively seeking another location nearby. This project was one of the early development proposals that helped persuade the City to pursue the freeway demolition.
- One developer plans to build a mix of 560 apartments and condominiums worth $90 million on the former Pfister & Vogel tannery site just north of the Upper Water Street district. The company bought the property a year before the freeway demolition was started and their decision to carry out the project was directly related to the potential generated by the freeway removal.
- Another developer plans to convert the former Pabst Brewery into a $300 million complex of restaurants, nightclubs, loft apartments and offices. This site is also just north of Park East and sold for $10.3 million in September 2002 as the freeway demolition was getting under way. The Redevelopment Authority had earlier commissioned a study outlining parameters for redevelopment of the Brewery.

Critics

Some critics have argued that the demolition of the freeway should not have occurred without firm commitments from developers to build on all of the parcels that will become available, citing the uncertainty created by the Harley Davidson decision. Others have stated that developers will need subsidy if they are to be expected to satisfy the requirements for high quality design and materials called for in *the Park East Development Code.* It has also been argued that the redevelopment will lead to gentrification by providing only high-end housing in the redevelopment area.

To date, however, the City's response to these criticisms has been optimism that the project is well founded. Planning Director, Peter Park has referred to the success of the East Pointe mixed residential / commercial neighbourhood, which is located on the portion of the Park East Corridor that was originally cleared but never developed as a freeway. The 2000 assessed value of this once blighted land was almost $52 million. He also counters the gentrification argument by saying that it is better to have high-end residential in the redevelopment area than no residential at all, which would be the case if the freeway had remained standing. Mayor John Norquist has also expressed confidence that design subsidies are not necessary because developers will be attracted to the area because they know they can make a profit.

Sources:

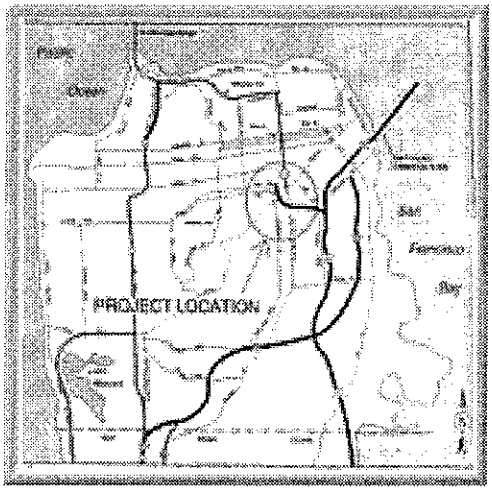
Peter Park, Director of Planning, City of Milwaukee
http://www.mkedccd.org
http://www.mkedcd.org/news/2002/ParkEast.html
http://www.jsonline.com/news/metro/nov02/94110.asp

A.3 CENTRAL FREEWAY, SAN FRANCISCO, CALIFORNIA

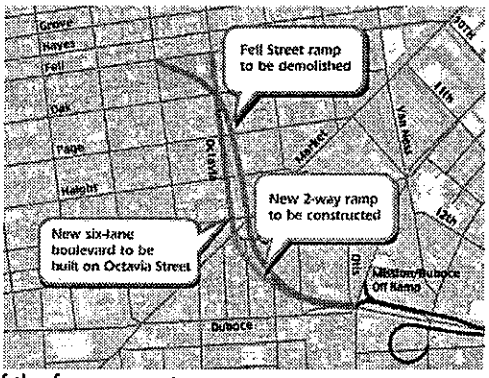
The Central Freeway in San Francisco is currently being demolished. Work began in April 2003 and is scheduled for completion in September 2003. The demolition is the culmination of a long process of technical analysis and public discussion, and is part of a larger plan to replace the freeway with an enhanced, at-grade boulevard (Octavia Boulevard) and also to use the freeway demolition as the catalyst for neighbourhood revitalization.

History & Planning Process

The Central Freeway was built in 1959 as part of a proposed overall freeway system for San Francisco. As originally planned, it would have extended northward through the centre of the city to connect with the Golden Gate Bridge. The "Freeway Revolt" of the 1960s intervened, however, and the project, along with several others, was halted. The two storey, elevated structure thus became a freeway "stub" which terminated in ramps connecting with city streets.



The structure was badly damaged in the 1989 Loma Prieta earthquake. The northernmost section was closed immediately and taken down three years later in 1992 and, following public hearings, the City decided that it would not be rebuilt. The section south of Fell Street remained open, however, after being braced to provide interim seismic support. In 1994, the California Department of Transportation (Caltrans) made a proposal to rebuild the freeway and began preparation of an environmental impact study analyzing the effects of various alternative scenarios. This study was prepared with public input from a Citizens Advisory Task Force that held a series of meetings in 1995/96. It was at this point that the debate about whether the freeway should be rebuilt began to heat up.



In 1996, Caltrans removed the upper deck of the freeway for safety reasons, intending to re-open the two-lane lower deck following demolition. The City intervened, however, and requested that the Fell Street ramp remain closed pending full consideration of the alternatives. In 1997, following completion of the Environmental Impact Study, the matter (Proposition H) was put to a vote and the decision was made to rebuild. However, in 1998 this decision was repealed by Proposition E, which favoured replacing the section north of Market Street with an at-grade boulevard (Octavia) and constructing a new single deck, elevated freeway south of Market to connect up with the rest of the freeway system.

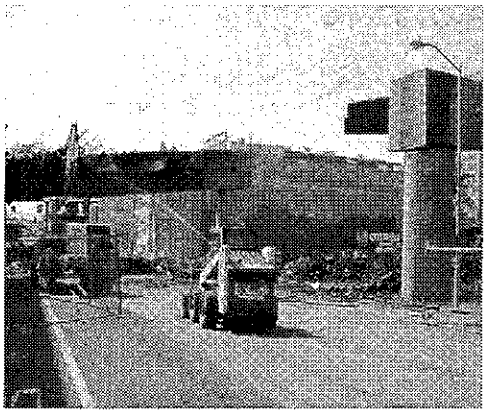
The demolition work (first stage of this plan) was completed in 2003. Octavia Boulevard will be re-constructed between Spring 2004 and Fall 2005. The new ramps south of Market Street will be completed by Spring 2006.

Environmental Impact Statement

The 1997 Caltrans Environmental Impact Statement looked at a wide range of factors related to the demolition and reconstruction project, including:

- Environmental setting: Geology, topography, etc.
- Seismicity. Making any new structure earthquake proof
- Air Quality: Assessing the effect of the various redevelopment scenarios using CALINE 4, a computerized dispersion model.

- Noise: Using the SOUND 2 computer program (Caltrans version of STAMINA2/OPTIMA).
- Visual resources: an analysis of the visual impacts of the various redevelopment scenarios.
- Traffic & Circulation: The traffic volume on the freeway in 1995 was 138,000 vehicles per day. The study looked at how each redevelopment scenario could absorb this amount of traffic.
- Land use, Economic and Social Effects: An analysis of the social structure of the areas bordering the freeway and the effect of the redevelopment on neighbourhoods and businesses, particularly with regard to accessibility, travel times, etc. A survey of merchant's associations showed that there had been positive changes in the commercial districts since the closure of the freeway., a finding that clearly reinforced the argument for not rebuilding it.
- Right of Way: The project did not require acquisition of any additional right of way. In fact, the reverse was true, in that the demolition of the freeway created surplus land that could be conveyed to the City for redevelopment for other uses (see discussion below).



- Architectural resources: assessing the effect of the freeway on nearby historic buildings and districts.
- Archeological resources: establishing a procedure for archeological investigation where ground is disturbed during construction.
- Hazardous Materials: an investigation of prior land uses, and establishment of procedures for monitoring and containing any hazardous materials turned up during construction.
- Energy: the effect of the various redevelopment scenarios on energy consumption.

Partners in the Project

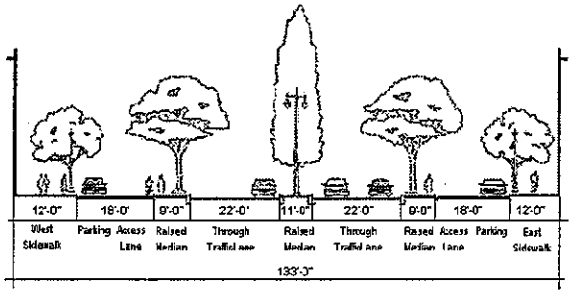
The demolition and reconstruction project is being jointly carried out as a partnership between Caltrans, the City and County of San Francisco, and the San Francisco County Transportation Authority. Caltrans is primarily responsible for demolition and reconstruction of the freeway and freeway ramps; the City is primarily responsible for the reconstruction of Octavia Boulevard.

Traffic Management Plan/Community Outreach Office

- A Traffic Management Plan has been implemented including: intersection reconstruction and channelization changes and ramp modification at all entrances to the freeway, traffic routing and signage changes, new traffic signals, traffic signals timing changes, curb parking prohibitions and transit-only lanes.
- The project has established a website, which posts transit schedules, detour information, and links for "alternatives to driving" as well as other information about the project.
- A multi-lingual, community outreach office has been established in the neighbourhood for the duration of the project.
- A professional, public relations firm has been hired to co-ordinate the public awareness campaign.

Planning and Design Process for Octavia Boulevard

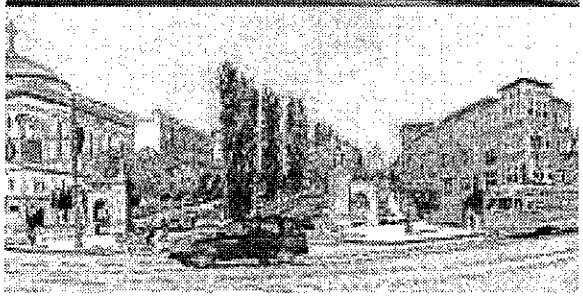
In 1999, following the approval of proposition E, the City's Transportation Authority established the Central Freeway Citizens Advisory Committee (CFCAC) to provide a forum for public input into planning for the demolition and reconstruction project. The 13-member committee was deliberately set up to include representatives from all neighbourhood interest groups, including residential area representatives and advocates for business, urban design, pedestrians, cyclists, seniors, and



disabled.

In order to facilitate through traffic movement as well as slower local traffic and parking, Octavia Street was redesigned as a multi-lane boulevard. The central realm will have two moving lanes in each direction, separated by a central median. The neighbourhood-oriented side realms/pedestrian realms will each have one moving lane, one parking lane and a tree-lined sidewalk.

The boulevard will be narrower than the combined width of the former street right-of-way and freeway right-of-way. This will leave some surplus land along the eastern edge of the right-of-way, which will become available for new infill development (see discussion below under *Market & Octavia Plan*).

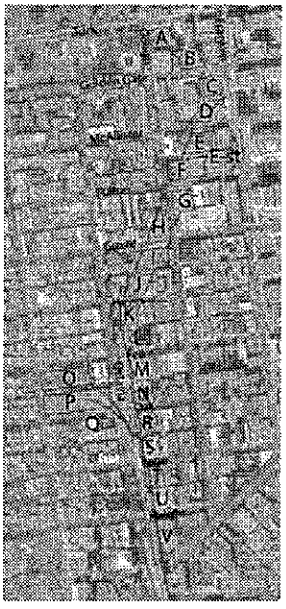


Transitional Parks and Public Art
Also, because the boulevard will be considerably wider than most city streets it will be integrated with the normal city grid at each end with transitional areas including a park at the northern end (Hayes Green), and landmark public artworks. These will be paid for through the City's Art Enrichment Ordinance, which calls for 2% of eligible construction costs to be allocated for public art.

Planning Process for Market & Octavia Neighbourhood Plan.

As plans for the removal of the freeway took shape, the City Planning Department initiated a series of meetings to discuss the opportunities this presented as a catalyst for revitalization of the Market & Octavia neighbourhood.

- May 2000-January 2001: Three Neighbourhood Planning Workshops.
- June 2000: Neighbourhood Bus Tour and Walking Tour.
- June 2001: Meeting regarding disposition of surplus freeway parcels.
- December 2001: Fourth Neighbourhood Planning Workshop.
- December 2002: Presentation of Draft Neighbourhood Plan.



The reintegration of the more than 7 acres of surplus freeway lands into the urban fabric is a core element of the plan that has evolved out of these community discussions. The surplus lands (23 parcels in all) have a variety of potentials based on their varied size and context. In each case, the plan identifies the potentials and sets out allowable building envelopes and design guidelines. In some cases the potential is for residential infill, fitting in with the fine grain of the surrounding residential neighbourhoods. In others, it is for mixed commercial and residential development, with active uses at street level and residential above. In some cases the potential is for public open space to complement and add amenity value to surrounding development.

Another underlying principle of the plan is that development will be encouraged through relaxation of traditional zoning rules, including:

- Eliminating housing density limits, encouraging a variety of creative housing types to be developed and added to existing buildings within a coherent urban design program.

- Replacing minimum parking requirements with parking maximums, thus allowing the flexibility to build more housing more affordably, freeing up ground floor space for retail and community services and supporting more frequent and reliable public transit.
- Improving streets and public spaces as the setting for public life in the area and minimizing the negative impacts of auto traffic by rationalizing its movement and reducing conflicts with other street users. (The removal of the freeway and its replacement with an enhanced Octavia Boulevard is the direct expression of this principle).
- Eliminating discretionary review and replacing it with a system of Conditional Use Permits and Expediting & Fast Tracking the permitting process.

Sale of Surplus Land pays for the Redevelopment of Octavia Boulevard
To finance the $45 million Octavia Boulevard redevelopment, the City will sell about one half of the surplus land parcels (the other half are encumbered by long term leases that make immediate development problematic). The parcels will not be sold however until the new zoning rules are in place. These new rules will favour development and add value to the land, enabling the City to maximize its asking price. All sales of surplus land will include the condition that approximately one half of all residential units must be affordable housing.

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http://www.ci.sf.ca.us/

Octavia Boulevard
http://www.ci.sf.ca.us/site/octavia_blvd_index.asp
http://www.sfcta.org/Projects/Octavia%20Blvd/OctaviaPage.htm

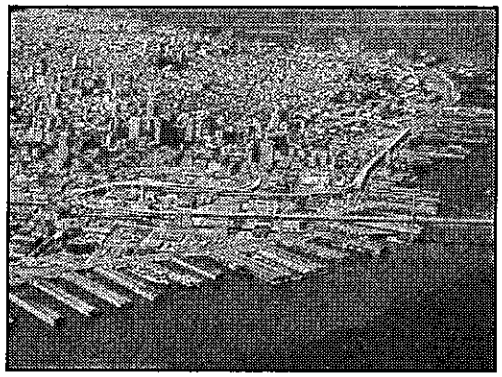
Environmental Impact Statement
http://www.dot.ca.gov/dist4/sf101cnt.htm
http://www.dot.ca.gov/dist4/centeis.htm

Street Party
http://www.mistersf.com/notorious/index.html?notfreeway02.htm

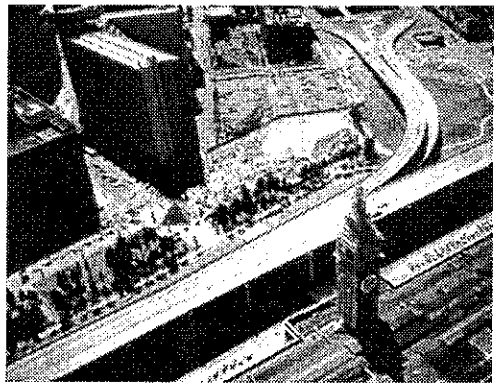
A.4 EMBARCADERO FREEWAY/WATERFRONT REVITALIZATION, SAN FRANCISCO

Freeway Demolition

Like the Central Freeway, San Francisco's Embarcadero Freeway was built in the early 1960s as part of a plan to link the Bay Bridge to the Golden Gate Bridge with freeways running through the northern part of the peninsula on which the city is situated. This is analogous to wanting to build a freeway through the Halifax peninsula to connect the MacDonald Bridge to the Armdale Rotary. The proposal met huge public opposition however (the Freeway Revolt), and the project was stopped, but not before a one-mile-long section had been completed. The result was a two-tiered freeway that ended mid-air on the edge of the downtown, cutting off access from the financial district to the waterfront, and in particular, the historic Ferry Terminal Building



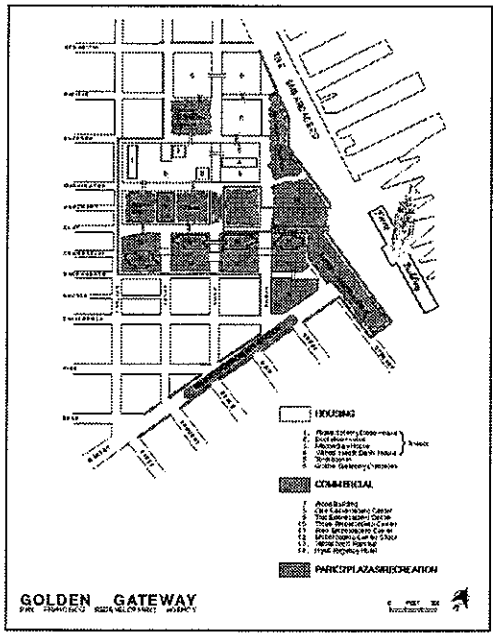
In 1973, plans were unveiled to demolish the much-maligned structure and rebuild the street (the Embarcadero Roadway) as a multi-modal boulevard for cars, bicycles, pedestrians and trolleys (the city's *Muni* public transit system). But, because of lack of funding and competing viewpoints, it took twelve years before these plans were approved, and even then no action was taken until 1989 when the Loma Prieta earthquake rendered the structure unstable. Although there were some who argued that the freeway was not damaged beyond repair, public sentiment against the structure was strong enough that it was taken down in 1990/91.



Waterfront Revitalization

The removal of the freeway opened the opportunity for the downtown business district to be reconnected with the waterfront from which it had been severed for thirty years - a period within which several parallel processes of urban change had occurred.

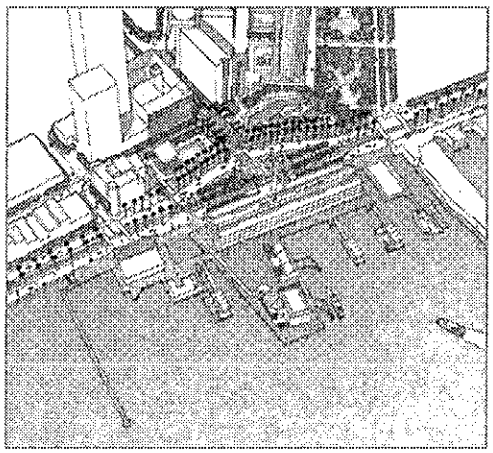
On the inland side of Embarcadero, the financial district had grown considerably and the "Golden Gateway" urban renewal area had developed with new housing (4000 units) and new commercial development. One of the most significant commercial developments was the Embarcadero Centre: a six-block complex, built in phases between 1968 and 1989, and containing 3.5 million sq.ft. of office space, 350,000 sq.ft. of restaurant and retail space, and 200,000 sq.ft. of landscaped public areas. On the waterfront side of Embarcadero, however, the once busy port had declined due to the development of container terminals elsewhere in San Francisco Bay, leaving many wharves and warehouses vacant. The nearby development of the financial district had also made the waterfront less accessible for cargo handling. As well, the development of the bay bridges and the freeway system had virtually put an end to the Bay Area's highly developed ferry service, which once centred on the Ferry Terminal building.



In the 1980s, the City initiated a planning process to look at how to 'reposition' the waterfront area in the midst of these changes. This

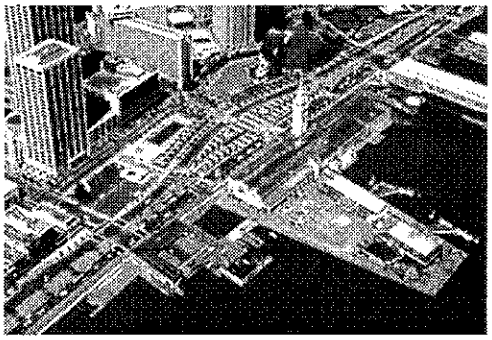
resulted in the publishing of *the Northeast Waterfront Plan*, which envisioned the removal of the freeway, the redevelopment of the Embarcadero Roadway as a tree-lined, multi modal boulevard, and the restoration of the Ferry Terminal as a catalyst for waterfront revitalization.

When the Loma Prieta earthquake hit in 1989, it damaged not only the freeway but the Bay Bridge as well. This emergency led rapidly to the renaissance of the ferry service, which for a period after the earthquake was the only way that commuters from the east side of the Bay could reach the downtown. This led in turn to the idea of making long-term investments in improved public transit, using the enhanced ferry system in combination with *Muni* and *BART* (Bay Area Rapid Transit). The Ferry Terminal building and the roadway immediately in front of it became crucial elements in this vision. The consultants (ROMA Design Group) emphasized that "the idea of creating ferry service as the 'system of choice but not the system of last resort' means creating an overall ambience facilitating pedestrian access, and developing an environment where riders feel comfortable going to and coming from the ferries."[1] This meant transforming the former freeway into a public plaza worthy of the vision.



In parallel with the City's efforts, in 1990 the Port of San Francisco initiated its own planning process for redevelopment of the port lands adjacent to the Embarcadero, establishing a Waterfront Planning Advisory Committee representing a multitude of stakeholders. The vision that evolved was of a mix of maritime industry, commercial uses, restaurants, recreational uses and public waterfront access, all accessible via an enhanced Embarcadero Boulevard.

In 1994, the Department of Transportation launched its own process of public debate about what form the Embarcadero Roadway improvements should take, both from an aesthetic point of view and in terms of how it was to link with other streets and the freeway system. There was no question that the street was heavily used and would have to be able to handle large volumes of traffic. At the same time, the City's vision was that expansion of private automobile use could be contained through development of efficient public transit. Even as late as 1998 proposals were fielded for development of a tunnel beneath the surface street to substitute for the freeway but, to date, these have come to nothing.



A key player in the redevelopment of the boulevard has been *Muni* - the San Francisco Municipal Railway Company, which operates the City's light rail trolley system. When the freeway was standing, *Muni*'s Embarcadero Terminal was located on the inland side of the freeway. In 1996, after the freeway was removed, however, *Muni* decided that it would relocate its terminal to the water side of the street in front of the Ferry Building, and it called for proposals to redevelop its inland terminal site. The idea was that this would generate funds for transit improvements and contribute to the general revitalization of the plaza area. This led to a proposal by Joie de Vivre hotels to build a 222-room boutique hotel, a project that is currently coming to fruition. On top of the real estate transaction, the hotel company contributed $1.5 million towards the relocation of the transit terminal and development of a transit-related retail store, as well as providing perks for transit employees who use the new hotel facilities. Some of the funds from this deal have gone towards *Muni*'s extension of a historic trolley line - the F Line - along the Embarcadero, which has enhanced the attractiveness of the area for tourism.

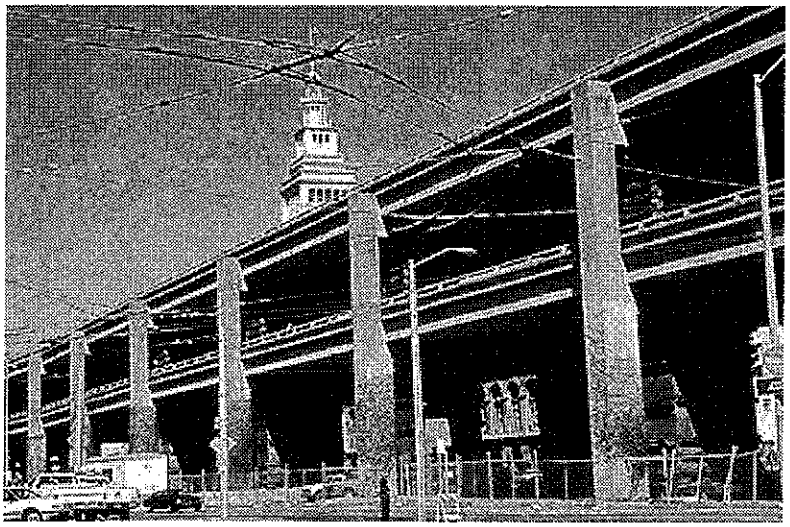
[1] Boris Dramov, President of ROMA Design Group, quoted in http://www.baycrossings.com/Archives/2000/09_October/newsmaker.htm

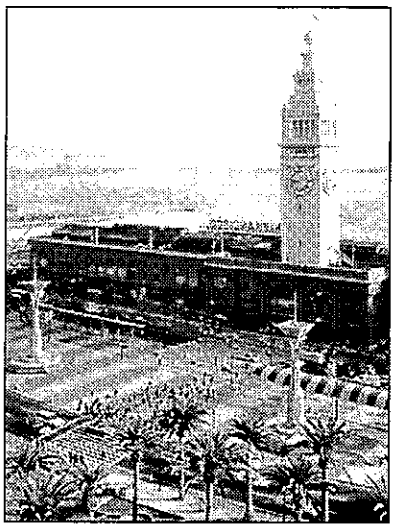
In 1997, the San Francisco Farmers Market decided to relocate to the Ferry Building, assuring a core long-term tenancy and forming a core element in the restoration plan.

Several significant developments happened in 2000/2001.

- The Port Authority updated its Waterfront Plan in 2000 to synchronize its objectives with those of other organizations involved in the area's redevelopment, reaching agreement on future public plazas, open water basins and public access improvements along the entire waterfront. The updated plan also included detailed design guidance for all sites along the waterfront, both north of the Ferry Terminal to the Fisherman's Wharf tourist area and south towards the Bay Bridge.
- The Pacific Bell Park, a 40,000-seat baseball stadium, home of the San Francisco Giants baseball team and located just to the south of the Ferry Terminal Plaza was completed in 2000.
- New, covered ferry terminal landing facilities were constructed in 2000/2001, giving passengers complete weather protection.
- New headquarters for the GAP Corporation were built in 2001 on a site near the Ferry Terminal.
- Plans were laid in 2001 for a new Waterfront Pavilion in the Ferry Terminal Plaza, to be the permanent home of a historic organ and a year-round location for free public concerts.

In March 2003 the $80 million restoration of the Ferry Terminal building was completed through a public private partnership, with leased office space on the second floor and world class restaurants, an upscale market, and retail establishments on the ground floor. This restoration is the culmination of a twenty-year planning process that has involved numerous interests and organizations in an iterative debate about what was needed. From the question of whether to demolish the freeway in the first place, to the question of what to replace it with - a process described by a recent, round-table participant as "process until it hurts."





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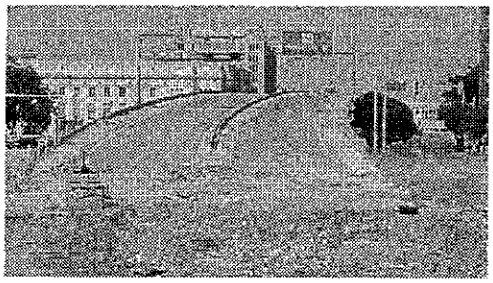
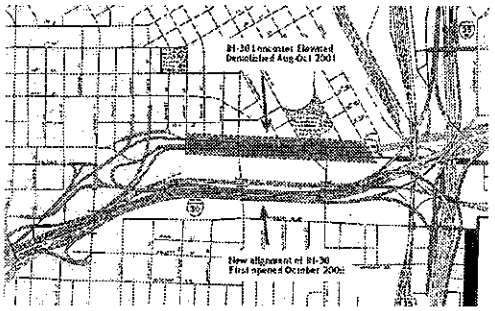
A.5 INTERSTATE 30 OVERHEAD/LANCASTER AVENUE, FORT WORTH, TEXAS





The Interstate 30 Overhead Freeway in Fort Worth, Texas was demolished over a two-month period in the fall of 2001. A public ceremony with speeches, food, entertainment, fireworks and an aircraft fly-over was held to mark both he beginning of the demolition and the beginning of the rebuilding and renaissance of Lancaster Avenue, the urban street that the overhead had covered for more than 40 years.

The 1.5 km elevated roadway with four lanes (two each way) was originally built in 1960 when it was hailed as Fort Worth's "modern expressway" and Texas' first four-level direct-connection interstate highway interchange. The structure cut through the downtown core, however, severing the commercial district from the medical district and introducing what would later be regarded as an eyesore.

The demolition of the overhead was 20 years in the making. Plans initially developed in the early 1980s by the Texas Department of Transportation (TxDOT) called for the overhead to be expanded and widened to accommodate anticipated traffic increases associated with the proposed expansion of the Interstate 35W/30 interchange (the so-called "Mixmaster") east of the downtown. There was strong opposition to this from heritage groups, however, because the widening would have destroyed several heritage buildings. There were also several prominent rich families who rallied to the cause, providing money for lawyers to defend the heritage preservation case. The dispute went to court with an initial decision favouring TxDOT but this was later overturned on appeal to the Supreme Court. After the Supreme Court decision, TxDOT came up with a new plan to move the I-30 highway section further to the south, where it covered the Vickery Boulevard railroad tracks. The Mixmaster interchange expansion began in 1993 at a cost of $173 million and is still under ongoing construction. The interchange features high-speed exits and entrances and a fiber optic control system and, when fully complete, is expected to handle 286,000 vehicles a day by the year 2018, compared to the 218,000 that travel the roadway now. The four-lane Lancaster overhead was clearly too small to handle this huge amount of traffic. The realigned I-30 opened in 2000, paving the way for demolition of the old overhead in 2001.

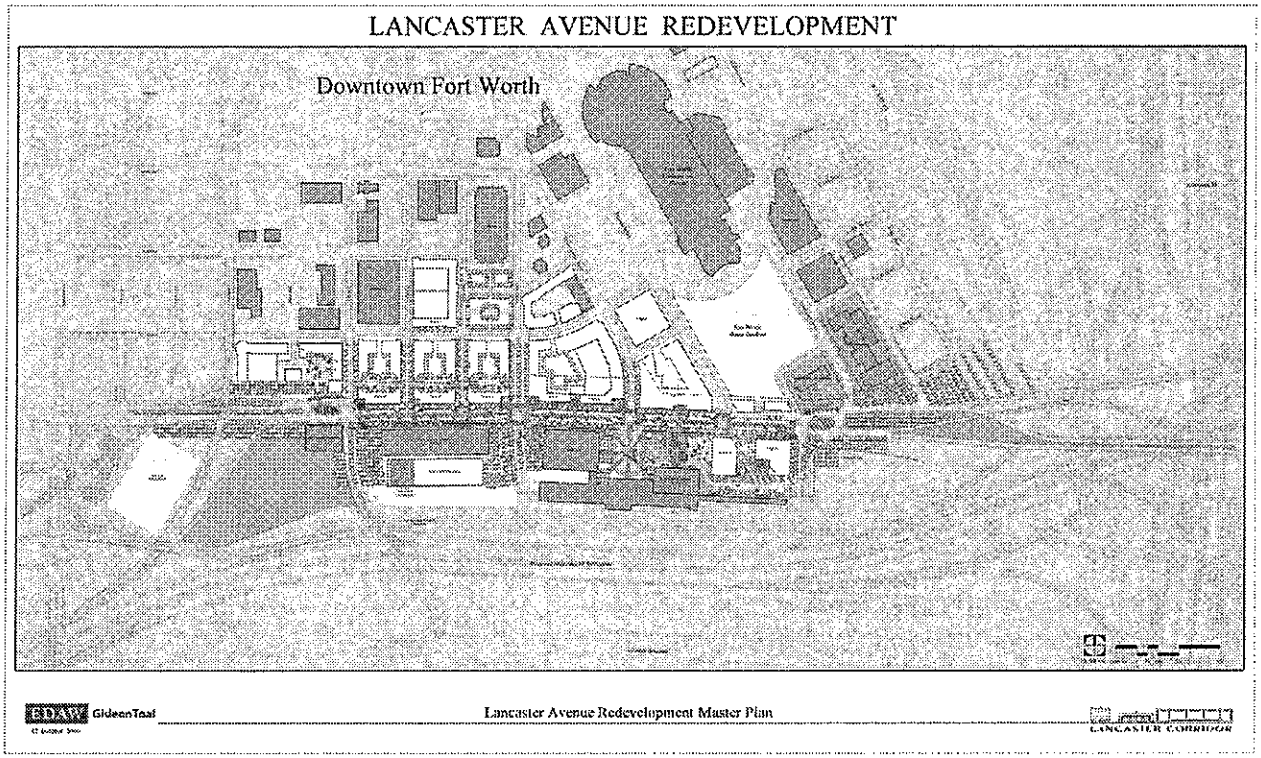
Demolition Process and Costs

Due to the proximity of buildings along Lancaster Avenue, the overhead had to be carefully torn down piece by piece. The cost of this plus reconnection of two downtown cross streets to the realigned I-30 cost $15.3 million, paid for by TxDOT with state and federal funding. Traffic disruptions were minimal because through traffic had already been rerouted to the realigned I-30. The sectional dismantling of the overhead enabled two lanes of Lancaster to be kept open during the dismantling process. New ramps connecting Lancaster to the Mixmaster are expected to be complete by late 2003.

Planning Process for Redevelopment and Renaissance of Lancaster Avenue

The realignment of I-30 and the demolition of the overhead freeway created an opportunity for expansion and revitalization of the south Downtown area based around redevelopment along the Lancaster Avenue Corridor. In 1998, the City of Fort Worth committed $1,200,000 from its Capital Improvements budget towards a design study. Consultants (EDAW and Gideon Toal) were hired to guide the design and public consultation process in association with the City's Planning Department. Public meetings and design charettes were held in 1999. Three different street redevelopment scenarios were discussed before a Master Plan was prepared showing the street as a tree-lined boulevard with "gateway" roundabouts at each end, a 14 ft. median, 20 ft-wide sidewalks and a mixture of heritage buildings and new commercial, office and residential land uses in both sides. The redesigned street will physically and visually reconnect heritage buildings

on the south side of Lancaster with the main downtown area, including the 1933 US Post Office and the 1931, Art Deco Texas and Pacific Railroad Terminal, which will be connected to the street by a new urban plaza.



The Lancaster Avenue planning process has three elements: the design phase and the environmental assessment phase, both led by the City's Planning Department and the consultants (EDAW); and the engineering phase, led by the Department of Transportation and Public Works. The design phase is now complete. The environmental assessment phase is currently wrapping up (April 2003). The engineering phase is due for completion in 2004. Construction is expected to be complete by 2005.

New Land Available for development.
The I-30 overhead had a right-of-way of 180-250 feet. Reconstructed Lancaster Avenue will have 114 feet. This will leave a surplus of about 90 feet on average, which be acquired by the City from TxDOT and then sold to the private sector for redevelopment.

Redevelopment Costs
The total cost for reconstruction of Lancaster Avenue will be $13.8 million, made up of $8.8million in federal money, $2.2 million from TxDOT and $2.7 million in city funds designated for the project, principally from a 1998 bond issue.

New Zoning to support Mixed Use on Lancaster Avenue.
Fort Worth revamped its comprehensive plan in 2002 to embrace a multiple growth centre development scheme, with each growth centre, including the downtown, designated as a single mixed-use zone. This is less restrictive than traditional zoning and will make Lancaster Avenue more attractive to the private sector for development.

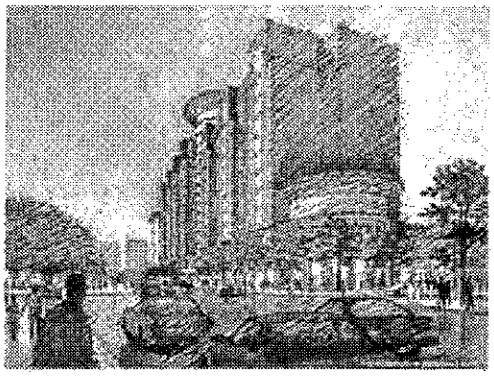
Other Public Initiatives related to the Freeway removal and redevelopment.
The removal of the I-30 overhead and rebirth of Lancaster Avenue is part of a larger process of downtown revitalization and reinvestment that is underway in Fort Worth. The context of related actions is necessary to support the freeway removal and vice-versa. The removal of the freeway encourages new development on the street. The increased property value and assessment from development benefits the City through increased tax revenue, which in the long term, offsets the cost of the street reconstruction. Public development initiatives relating directly to Lancaster Avenue include:

- ***City Hall Parking Garage***. Parking is an essential part of the Lancaster Corridor Redevelopment Project, and the City is currently pursing private partners for development of a parking garage.

- ***Intermodal Transportation Centre:*** The Texas & Pacific Station is located on the south side of Lancaster and is now reconnected with the downtown through the freeway removal. In 2002, it become a terminal for the Trinity Railway Express, a commuter rail line linking Fort Worth with nearby Dallas. This function will expand in the future and could not have been possible without removal of the overhead freeway. The City has plans, through its Transportation Authority to establish a Light Rail streetcar system by 2010.

- *Water Gardens Improvement* The Fort Worth Water Gardens is a 4.3-acre City park featuring ponds, fountains and interconnected landscaped areas. When the elevated I-30 freeway was in place, the Water Gardens erected a huge wall to block the view of the highway from the Gardens. Now that the freeway is gone, the wall has been removed and the park has been physically and visually reconnected to Lancaster Avenue. A new Water Gardens Visitor Centre is also planned with access from the Avenue, and a new, events plaza is planned for the northern end of the Gardens in front of the Fort Worth Convention Centre.

- ***Convention Centre Hotel.*** Three separate market studies have identified the need for a new Convention Centre Hotel to complement the current, $75 million expansion of the Fort Worth Convention Centre, which is due for completion in 2003. At the same time, Tarrant County College, which is located on Lancaster Avenue, is currently looking at relocating and building an expanded campus elsewhere in the downtown. In turn, the City is looking at using the vacated college site for development of the Convention Centre Hotel. This would be the first major development on the Lancaster corridor. The hotel is estimated to cost about $138 million and is scheduled to open in January 2006.



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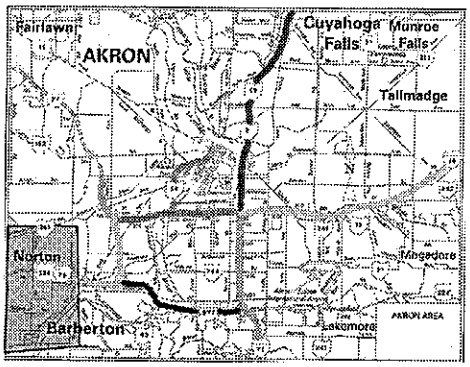
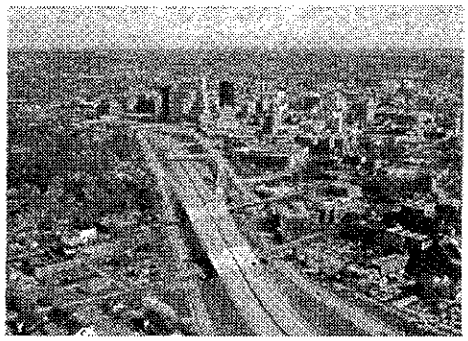
A.6 AKRON INNERBELT FREEWAY, AKRON, OHIO



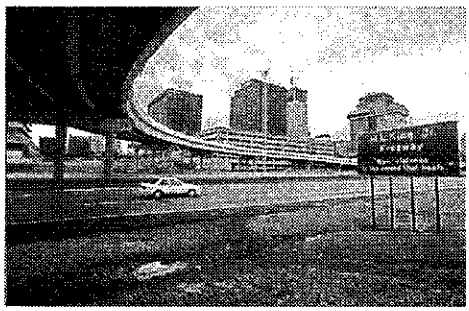
The City of Akron, Ohio is currently proposing to tear down a three-quarter-mile-long section of the two-mile-long, elevated Innerbelt Freeway spur (Interstate 59) on the western edge of the downtown. This divided, six-lane freeway was built between 1970 and 1987 with the intention of relieving congestion on the Central Interchange southeast of downtown. The project ran out of funds however, and was never completed. It was also very controversial because it flattened family businesses and homes and displaced an estimated 3,000 families through expropriation

The Innerbelt was designed for a capacity of 120,000 vehicles a day but currently carries only 22,000 along its busiest section and is currently dubbed "the road to nowhere."



The proposal to remove the elevated freeway is part of Akron's current strategy to transform itself from a depressed "Rust Belt dinosaur" into to a vibrant, confident city. Since 1987 when he took office, Mayor Don Plusquellic has led Akron through a process of residential neighbourhood improvement, economic restructuring and technological re-tooling from rubber to polymers, and a $43 million, ten-year investment in parks and recreation facilities, with the intention of reshaping the image of the city. A new baseball stadium was built downtown in 1997 and this has created a new atmosphere for business and been a catalyst for renewed private investment. The city has pro-actively assembled vacant industrial and commercial sites (brown/greyfields) for new corporate and industrial development and is currently engaged in extending services to neighbouring municipalities for mutually beneficial industrial, commercial and recreational development.

The City has recognized that removal of the elevated Innerbelt Freeway could save millions of dollars on repairs to the aging structure and enable reclamation of about 25 acres for redevelopment on the downtown edge. The vision is to transform the area into a pedestrian-friendly boulevard with parks, residential housing and retail and office development and to reconnect the downtown with the west-side neighborhoods severed by the original freeway construction.



In July 2002, the City selected an Akron-based team of consultants to carry out a feasibility study - the *Akron Innerbelt Study* - to examine traffic and engineering implications, land use development potential and redevelopment options, and to manage the process of public consultation and input. Funding for the study comes from a $9 million Federal Transportation Demonstration Project grant that the City received in 1991 and only partially spent, and which has been held in reserve ever since. The contract with the consultants is currently being finalized and the study is expected to begin later in 2003.

The Innerbelt is not falling down or currently in need of major repairs. This enables the City to take a careful look at the merits of the demolition proposal, which is something that is required anyway by the Ohio Department of Transportation. In this respect it appears that Akron is at about the same stage of things as Halifax, with the proposed freeway removal at the very beginning stages of study.

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APPENDIX B
DETAILED PROJECT FINANCING INFORMATION

The options outlined in this report illustrate a range of solutions for financing the Cogswell Interchange redevelopment. This Appendix provides detailed information on sources of possible financing for the Cogswell Interchange. It includes data about traditional and nontraditional forms of financing, as well as Federal and Provincial funding programs. It also provides some detail on private sector companies that may have an interest in purchasing land created by the redevelopment of the Cogswell Interchange.

B.1 TRADITIONAL FORMS OF PROJECT FINANCING

This section provides an analysis of traditional and non-traditional sources of financing that could be used for the redevelopment of the Cogswell Interchange.

B.1.1 Municipal Finance Corporation

The Nova Scotia Municipal Finance Corporation (MFC) was established by the Province in 1979, as a way to provide a cost effective and efficient means of raising long term debenture funds for municipal capital projects. By pooling the borrowing needs of municipalities, municipal enterprises, school boards and hospitals, all of these borrowers are able to spread the administrative and underwriting cost associated with their borrowing over a larger base. More importantly, these entities can access lower interest rates, as the province guarantees the repayment of the bonds.

The MFC typically goes to the market with a bond issuance twice a year, once in the Spring and once in the Fall. The Spring 2003 issuance was for a total of $51 million, with HRM accounting for $38 million, or almost 75% of the total amount raised. Based on the province's low A bond rating, the cost of 10 year funds was 5.1%. This includes the transaction costs associated with the MFC underwriting these serial bonds.

Although HRM has been given special legislative authority to issue its own bonds for the Harbour Clean-up, this can not be extended to other municipal ventures. As such, should HRM wish to borrow funds to finance the redevelopment of the Cogswell Interchange, it would have to do so through the MFC. The MFC has certain underwriting criteria that must be met. For example, it requires that the municipality authorize the debt through a formal resolution of council, and that the municipality's debt to equity ratio meets certain criteria. There are restrictions on the use of funds, as they have to be used for a legitimate municipal purpose.

B.1.2 Commercial Banks

Commercial lenders include the chartered banks, such as Bank of Montreal, TD Canada Trust, Scotiabank, etc. Although these banks are a potential source of funding for the project, they incurred a large number of losses due to commercial real estate lending in the early 1990's and as a general rule, do very little such lending currently. As well, due to restrictions imposed by the Municipal Government Act, any long term municipal funding needs to be channeled through the Municipal Finance Corporation. An exception to this rule is short term borrowing needs such as short term bridge financing. In this scenario, the bank would provide a short term loan to bridge the gap between paying for the costs of demolition and construction, and the generation of revenue from land sales. This option would also allow HRM to spread the cost of the project over two to three budget years, without the need to issue long term debt (i.e., a hybrid pay as you go scenario). The interest rates associated with this type of financing will be higher than that which can be obtained form the MFC, and will reflect the level of risk in the way the deal is structured.

B.1.3 Institutional Investors

Institutional lenders include insurance and pension funds such as Great West Life and the Ontario Municipal Employees Retirement System (OMERS). As these institutions have regular payments coming in monthly (i.e., payroll deductions, insurance premiums, etc.) they have a regular source of funds they need to invest. Although most institutional investors allocate approximately 50 percent of their portfolio to equities, real estate is typically allocated anywhere from 8 to 12% of their total investments. Institutional investors tend to be more sophisticated than commercial lenders, and many times have a much longer investment horizon.

There are a number of these investors that are active in the Halifax market, in the commercial, industrial and residential sectors. For example, Great West Life owns the Purdy's Wharf office tower complex as well as Cunard Court, the 18 storey residential tower just north of the Scotia Square/Trade Mart building. Both properties immediately abut the Cogswell Interchange.

An institutional investor would most likely be the preferred financing partner for a local real estate developer, should they be the lead player in the redevelopment of the Cogswell Interchange. Unlike commercial lenders, they see real estate as a vital part of a long term investment portfolio, as it acts as a hedge against inflation. Most institutional investors also have the in-house expertise to be able to assess the construction and management risks associated with a complex commercial real estate transaction, whereas even the head office of local commercial banks do not. An example of this expertise is GWL Realty Advisors, which is the real estate arm of the Great West Life insurance company. Finally, institutional investors can take a very long term perspective for an investment, many times setting a 10 year or longer time horizon within which to hold the asset.

Although an institutional investor is a good option for a private sector developer, as HRM has access to inexpensive financing through the Municipal Finance Corporation, this option will probably not make sense for the Municipality.

B.1.4 The Project Proponent Will Effect the Underwriting Criteria.

The underwriting criteria for this project will vary dramatically based on who the project proponent is. For example, if HRM is the proponent, the lender will most likely be more interested in the municipalities credit rating and a loan guarantee than they will be in the specifics of the project. For example, as the current projected cost of the Cogswell project is approximately $12.6 million, this represents less than 20% of HRM's 2003 capital budget. After reviewing HRM's balance sheet to make sure the municipality is not carrying too much debt, the lender will most likely be comfortable with a loan agreement signed by the municipality (e.g., HRM agrees to pay $2 million dollars per year for the next five years). For them, HRM's covenant will be enough to securitize the loan.

However, if HRM were not the project proponent (i.e., if a private developer were to finance the project), interested lenders would begin to review the project like a traditional real estate development deal. Using this approach, they would want to see a redevelopment masterplan with an allocation by land use (e.g., the percentage allocated for commercial space versus institutional or residential). They would also want to see a large percentage of the land (e.g., 70%) pre-sold to buyers with good credit ratings. As is typical with land development projects, these pre-sales would provide enough up front development activity to provide the lender with the security that they would be re-paid.

B.2 NON-TRADITIONAL PROJECT FINANCING

B.2.1 Engineering Firms

Some large engineering conglomerates have wholly owned subsidiaries that provide equity financing for infrastructure projects. SNC Lavalin and AMEC Engineering are two examples. In general, these groups have a dual purpose: to earn a sufficient return on funds invested in infrastructure projects, and to generate work for their related engineering firm.

Based on conversations with both SNC and AMEC, the underwriting criteria for these types of projects are flexible, but they do have certain guidelines they use to review projects. For example, SNC Lavalin restricts its investments to projects in the following industrial sectors: power generation, toll roads, mass transit, water supplies and distribution systems, and airports. As the underwriting costs associated with a particular deal are similar regardless of its size, they prefer to fund projects with a project value of $10 - $15 million and up, although even this amount of financing is considered to be small. The ability to generate significant engineering fees for their parent company SNC Lavalin Engineering, is an important variable in selecting projects to bid on, as part of the corporate strategy is to use these funds to leverage additional work.

One local example of this was the Neptune Theatre project, where SNC Lavalin provided bridge financing (construction financing) to build and complete the new facility on Argyle Street. Neptune Theatre had developed plans for the redevelopment of its facilities, and had raised almost 50% of the required funding to make the project viable, but was concerned about a protracted fund raising campaign. The solution was to retain SNC Lavalin as project manager for the project. As part of this deal, SNC provided interim construction funding, and was repaid once the project was complete and the remainder of the funds raised. Although a fairly small project, it demonstrates how this type of arrangement can work.

Key criteria for underwriting a new infrastructure project are the project proponent (i.e., who is their client and what type of loan guarantee can they provide?), and the revenue generation potential of the project. One common thread to the industrial sectors mentioned previously is their ability to generate cash flow (e.g., highway or bridge tolls, power generation, airport fees, etc). By projecting the future cash flow that a particular project generates, and subtracted out the estimated operating expenses, the financing entity is able to determine how much residual cash flow is available to underwrite a long term debt instrument (e.g., 30 or 40 year bonds). It is on this basis that these projects are financed.

When the specifics of the Cogswell Interchange are examined, it becomes apparent that there is not any future cash flow stream to be generated from the project (i.e., HRM will not be charging tolls to cars traveling through the redeveloped interchange). The future revenue generation potential of the project is from the sale of serviced land for development. As such, anyone reviewing this project will see it as more of a real estate development deal, and will analyse it from that perspective.

B.2.2 Construction Firms

The ability to finance large infrastructure projects is not limited to large multinational engineering firms. Local civil contracting firm Dexter Construction also has a track record of financing municipal infrastructure for its clients. The rationale behind this financing is similar, as Dexter sees it as a way to gain an advantage against its competitors, and for some projects, it is the catalyst to make the project happen sooner.

In the past, Dexter Construction has provided financing for several large local residential real estate developers (e.g., Kimberly Lloyd Developments and/or Armco Properties). In this scenario, Dexter builds the roads and municipal infrastructure (e.g., sewer, water, sidewalks,

etc) for a new single family subdivision, and then takes a lien against the resulting single family lots. An interest rest is added to the original contract amount, and Dexter is repaid as lots are sold to contractors. By providing financing to its customers, Dexter is able to secure additional work, and the developer doesn't mind paying a slight premium over what he would normally pay, as it reduces the developer's overall equity financing requirements.

Similar to a bank or other financing institution, Dexter Construction has underwriting criteria, but given the nature of the business, they are much more flexible than most banks or lending institutions. In the case of the residential developer, they would assess the covenants of the developer (e.g., track record of development, financial net worth, future market for housing, etc.).

The specifics of the Cogswell Interchange were discussed with Dexter Construction President Hugh Smith. Mr. Smith is very familiar with the Cogswell Interchange project, and had the following comments. His firm would be very interested in financing the redevelopment of the Cogswell Interchange, but only if HRM were the project proponent. In other words, from his perspective, the financial covenants of HRM are strong enough that he would underwrite the project based on this alone.

The following is one scenario that Mr. Smith suggested would be viable for the Cogswell project. Dexter Construction would demolish all of the existing overpasses and retaining walls, and would then re-build a traditional grid road system to HRM standards. He estimates that the whole project could be completed within six (6) months. The total project cost would be the value of this municipal contract, plus a rate of interest over a five year repayment period. HRM would then repay this total amount over a five (5) year period in five equal installments. HRM Real Estate and Asset Management has estimated that the total project cost might be in the range of $12.6 million. This was calculated as the $9 million identified in the Vaughan Engineering report, plus a 40% contingency for cost overruns. Using this estimate, HRM would make annual payments of $2.5 million to Dexter Construction over a five year period.

HRM's 2003 capital budget was roughly $70 million dollars. This represents about 15% of the municipality's $500 million total operating budget. Assuming that there were no land sales to public or private developers, and no subsidies from the provincial or federal government, the estimated payment of $2.5 per year would represent 3.5% of HRM's annual capital budget. To the extent that at least some portion of the lands were pre-sold prior to the redevelopment, the actual capital outlay over the first couple of years of the project would be zero.

One potential problem with both of these options is that HRM is legally required to borrow funds for capital projects though the Municipal Finance Corporation. There are exceptions to this rule. For example, a commercial bank can be used to short-term funding needs if the loan is to be repaid over a short time frame (e.g., two years). Although perhaps a grey area, it may also be possible to structure the payment terms of a construction tender over a multiple year period, thus avoiding the need to use the MFC, and accessing the financial capacity of a construction firm.

B.3 FEDERAL FUNDING PROGRAMS

A literature search has revealed that there are not a lot of funding programs in place for infrastructure projects. That is not to say that there is not a fair amount of money, as the Canada Infrastructure Program has provided $2.6 billion dollars of Federal funds for the 2000-2007 funding period. This a national initiative, intended to complement and augment the existing capacity of provincial, territorial, and municipal governments to invest in physical infrastructure. The program has two components:

1. Infrastructure Canada Program (ICP), a $2.05 billion program for municipal infrastructure. and
2. Strategic Highway Infrastructure Program (SHIP), a $600 million highways program administered by Transport Canada[1].

B.3.1 Infrastructure Canada Program (ICP) 2000-2007

This fund provides $2 billion n for large scale infrastructure projects. Under CSIF, the Federal government will contribute up to a maximum of 50% of the total project cost for projects that incorporate partnerships between government and other groups, and fulfill regional priorities. As this fund has been designated for large infrastructure projects, the size of the minimum project varies by the total population of the province based. In the case of Nova Scotia, the minimum total project size is $25 million. The key way in which these funds are different than the ICP and SHIP program is their flexibility in which they can be administered and tailored to the needs of the specific community.

Funding for the program is allocated to the provinces using a population based formula. As a result of this formula, $65,282,000 was allocated to Nova Scotia. Once provincial and local matching funds are applied, the fund leverages a total of $195 million in spending. The Canada/Nova Scotia Infrastructure Agreement dictates the terms and conditions of project funding, and is administered by ACOA. The Agreement indicates that 60% of the funds should be allocated for "green" or environmentally friendly infrastructure projects, while 39% would be allocated to rural communities. Projects that are eligible include:.

Green Municipal Infrastructure. The first priority is "green" municipal infrastructure to ensure safe drinking water, clean air to breathe and more effective waste management systems. Sixty percent (60%) of all funds must be allocated to these types of projects:

- water treatment facilities
- sewer
- solid waste management systems.

Secondary priorities include:

- local transportation
- cultural and recreational facilities
- infrastructure supporting tourism
- rural and remote telecommunications
- high-speed Internet access for local public institutions
- affordable housing.

Based on discussions with ACOA, the Federal government's administrative partner for this program, ICP funds were allocated to specific geographical regions within Nova Scotia, with HRM getting an allocation of approximately $38 million. To date the majority of this funding has been allocated for sewer and water projects within the municipality, therefore there is virtually no room to fund the Cogswell project within this section of the program.

Eligible Projects. The new program may invest in five categories of infrastructure that are vital to advancing Canada's social and economic objectives:

1. *Highway and Railway Infrastructure.* Investments may be made in large-scale projects that facilitate the movement of goods and people on Canada's National Highway System, or highways that connect to the National Highway System and mainline rail

[1] http://www.infrastructurecanada.gc.ca/index_e.shtml)

networks for the purposes of increasing the productivity, economic efficiency, and safety of Canada's surface transportation system.

2. *Local Transportation Infrastructure.* Investments may be made in large-scale projects that facilitate the safe and efficient movement of goods and people, ease congestion, or reduce the emission of greenhouse gases and airborne pollutants. This will help address priorities such as climate change. Major investments in public transportation in Canada's major urban centres will help our communities work better and be healthier places to live.
3. *Tourism or Urban Development Infrastructure.* Investments may be made in large-scale projects that promote Canada as a leading destination for tourists or which promote urban development.
4. *Water or Sewage Infrastructure.* Investments may be made in large-scale projects that provide for safe, clean, and reliable drinking water, or which provide for the environmentally responsible and sustainable treatment of wastewater.
5. *Broadband.* Investments may be made in large-scale projects that expand broadband networks in Canada. This will ensure that Canadians who live and work in rural and remote communities have access to services such as distance learning and tele-health and can seize more business opportunities.

Examples of Projects Funding Under the Infrastructure Program. Examples of projects funded to date under this program include the following:

- Kingston Ontario Wastewater Treatment plant. $25 million. July 2003.
- Thunder Bay water and sewage treatment project. $25 million. July 2003
- Expansion of Ottawa Congress Centre, Ottawa, ON. $30 Million. May 2003
- Twinning of the Trans-Canada Highway in New Brunswick . $400 million. April 2003
- Various highway improvement projects in Nova Scotia (twinning of Highway 101, and a portion of Highway 104 north of New Glasgow). $61 million. April 2003
- Red River Floodway expansion. $160 million. April 2003.
- Improvements to GO Transit and York Region Transit networks. $435 million. March 2003.
- Sewage treatment and water distribution for Summerside, PEI. $30 million, February 2003.
- Convention Centre Expansion, Vancouver, British Columbia. $500 million. December 2002

B.3.2 Strategic Highway Infrastructure Fund (SHIP) 2002-2007

The SHIP fund is a component of the Canada Infrastructure Program and is administered by Transport Canada. This fund will provide $600 million for national highway infrastructure projects, primarily the upgrading of the Trans Canada Highway.

The SHIP fund is oriented primarily towards the upgrading of national highway infrastructure (e.g., the Trans Canada Highway) and as such would not be a good match for the Cogswell Interchange project.

B.3.3 Funding Prospects For the Cogswell Project Under the CIP

HRM has already been allocated its share of funds under the ICP portion of the 2000-2007 Infrastructure program. Most of this funding was allocated for sewer and water projects in suburban locations (e.g., Beaverbank).

The proposed $60 million federal contribution for the Halifax Harbour Clean-up was allocated under the Canada Strategic Infrastructure Fund as it is in excess of $25 million. It is not known right now if there is additional room under this program for the Cogswell Interchange project.

Although the total estimated project cost of approximately $10 to $15 million is below the threshold for projects under this fund, by combining the Cogswell component with one or more eligible projects such as a multi-modal transit terminal, or new arena/convention centre, the overall project cost could be made large enough to qualify.

As the funding allocation under the 2000-2007 agreements may already be placed, if HRM wants to use these types of funding mechanisms, it may have to wait until the next round of subsidies are available (if in fact these programs are renewed). This may not be a problem, as the complexity of the Cogswell Interchange project may require 2 to 3 years of ground work before its is ready for implementation.

B.4 PROVINCIAL FUNDING SOURCES

Other than matching funds under the Canada Infrastructure Program, we are not aware of any provincial funding sources that can be accessed for the Cogswell Project. However, we believe that a Provincial Crown Corporation (see below) could be a good partner with HRM for this project.

B.4.1 Nova Scotia Gaming Corporation

The Nova Scotia Gaming Corporation is the provincial entity that owns the Casino Nova Scotia. This casino is located at the northern end of Upper Water Street, and is being managed by Metropolitan Entertainment Group (a joint venture of Park Place Entertainment and East Port Properties/Lindsay) under a 20 year management agreement. This agreement expires in 2015. Under this management agreement, the operating company receives a percentage of the revenue spent at the facility, but the residual profit accrues to the Province. As such, the province of Nova Scotia, through the NS Gaming Corporation, is the primary beneficiary of any major improvements in the operation of this casino (i.e., most of any increased profit would flow to the Province).

The location of Casino Nova Scotia is not ideal. Although located directly on the harbour, this section of the waterfront does not have a large amount of pedestrian activity, and its location is obscured by one of the retaining walls from the Cogswell Interchange. In some respects, this semi-isolated location is not a major deterrent, as casinos are regulated and have no competition within the local market. If someone wants to gamble, this is the only location on the Nova Scotia mainland. This is changing however, as changes in the gaming industry have implications for the repositioning of the facility.

Although Canada's net gaming revenues have risen 76 per cent in the past six years to $4.8 billion[2]. Although this growth as been phenomenal, it does not show signs are slowing down. According to industry trends, casino facilities themselves will become more entertainment-oriented, an entertainment experience, not just a gambling establishment as they were in the past. The change in the size of these facilities exemplifies the change in the industry. When casinos started some 30 years ago, they were 8,000-12,000 square foot facilities offering table games only. Now 50,000-square-foot-plus facilities include full dining, live entertainment, bars, slot machines, plus the table games. Casinos are now becoming entertainment destinations. Part of what drives the casino business is what the customer wants - new games, new challenges, and new experiences[3].

The physical manifestation of these trends can be seen in Las Vegas where each new casino built sets a higher and higher standard for extravagance, with the construction of the facility incorporating replicas of temples, circuses, etc. Live shows (music, dancing, etc.) have always

2 http://roe-ab.hrdc-drhc.gc.ca/lmi/futurescapes/sgam_e.shtml

3 Ibid

been a big part of the Las Vegas scene, and now this is coming to Nova Scotia. More and more Casino Nova Scotia is bringing in high quality entertainment at its Schooner Room as a way to attract the general public to the facility. The gaming industries hope is that as more of the general public are exposed to the casino, they will spend more money on games of chance, thus increasing casino revenues.

This re-positioning of Casino Nova Scotia as an entertainment venue will become even more important with the introduction of the municipal and provincial non smoking rules in 2003; according to casino management, these rules will have a negative impact on the facility. For these reasons, the Nova Scotia Gaming Corporation is very interested in helping to accelerate the removal of the Cogswell Interchange, and would make an excellent financial partner for HRM in this venture.

B.5 POSSIBLE LAND SALES

The demolition and redevelopment of the Cogswell Interchange will create 6 acres of land that can be sold. This provides a source of funding that can be used to offset the costs of the project. This section provides a brief summary of several groups that may be interested in purchasing land.

B.5.1 Crombie Properties

Crombie Properties (formerly Halifax Developments Limited) is owned by the Empire/Sobey's Group. It is the real estate entity that owns the Barrington Place Shops, Scotia Square, Duke Tower, Cogswell Tower and the Trade Mart Building. These properties virtually circumnavigate the perimeter of half of the Cogswell Interchange. In fact, the impact of redeveloping the Cogswell Interchange is so great for this group that they have retained the law firm of Stewart McKelvey Sterling Scales to monitor land sales in the area.

Of particular interest for any redevelopment scheme for the Cogswell Interchange is the triangular parcel of land that The Empire Group owns at the northern end of the Granville Mall. This parcel is currently used as a parking lot for the Delta Barrington Hotel, but has a development agreement in effect that allows the construction of a 20 plus storey office building.

Based on discussions with management at Crombie Properties, at a minimum they would be very interested in acquiring enough land to square off this triangular parcel of land. They will also want to be very actively involved in any masterplanning exercise, as the impact of the removal of the interchange will be substantial for their properties.

B.5.2 Great West Life

The Purdy's Wharf office towers are owned by a group of institutional investors including Great West Life. As an institutional property owner, they take a long term view of these properties and of course are interested in the potential removal of the Cogswell Interchange. However, as the predominant use for this property is office space, and the market for Class A office space in downtown Halifax is not that great (i.e., they are not getting a large premium over the net effective rental rate for suburban office space), and they do not see themselves as being a financing partner in the redevelopment of the Cogswell Interchange, or acquiring any additional land. The only development interest they have at the current time is the potential redevelopment of the wharf between the two office towers for a high end residential project.

B.5.3 Trade Centre Limited (TCL)

Trade Centre Limited is the owner of the World Trade and Convention Centre. Due to the constraints of their current facility, Trade Centre Limited have identified the need to double (or perhaps triple) the amount of convention space they have, from 100,000 to 200,000 square

feet. This additional floor area would include more exhibit and break out space. According to TCL, this space is needed in order for Halifax to maintain its position relative to its competitors, as a large number of its competitors have either just built new facilities or expanded existing ones (e.g., Quebec City, London, Winnipeg, Vancouver and St. Johns). In order to assess the financial feasibility of this expansion, in 2003/04 TCL retained Economic Research Associates (a high profile American firm with expertise in the convention centre business), to assess the expansion potential of the WTTC.

The ERA study indicates that it is feasible to expand the existing convention centre and replace Metro Centre with a new arena facility. Although Cantwell & Company was not allowed to review the study, it is our understanding that the convention centre would expanded by installing one or two floors over a decommissioned ice surface in the Metro Centre. This would double or triple the WTCC's current space in a continuous location, but would require the construction of a new arena (Metro Centre). Another several sites were discussed for the new arena (the HPA's Seawall Property and the Cogswell Interchange). Trade Centre Limited staff indicate that they could need as much as 6 acres of land for the arena/Metro Centre alone (this would include surface parking), or as little as 2.6 acres if no parking is provided. Although not ideal, this is their current situation (i.e., the Metro Centre currently does not have its own parking facility). While it is quite clear that any new convention centre should be located in the downtown so it is close to existing hotels and restaurants, this footprint may be too big to fit within the confines of the Cogswell Interchange (i.e., this facility without parking could take up to 50% of all of the land available, although cantilevering the second floor over the surrounding roadways could reduce the total demand for land. In any event, HRM should consider Trade Centre Limited as one potential partner for this project.

B.5.4 Nova Scotia Department of Justice

The Province of Nova Scotia (NSTPW) has an interest in expanding their existing legislative complex around Province House. This would provide a large amount of owned office space in close proximity to the centre of provincial government. The Department of Justice is also planning for the construction of new court facilities for their Family Division and Provincial Courts; a study assessing options for all four HRM courts should be tabled by their consultants by July 2004. One option the Province's consultants have been considering is the abandonment of the Supreme Court (Law Courts) on Water Street and the construction of a new consolidate facility somewhere in downtown Halifax. Based on the preliminary draft report, it would appear that the Cogswell Lands are one of the best positioned sites for this 265,000 SF facility. In addition, HRM has expressed an interest in acquiring the Law Courts on Water Street as part of a long term redevelopment scenario for this important aspect of the Halifax Waterfront. When these statements are taken as a whole, it is possible to envision a large scale land swap whereby HRM receives the Law Courts facility in exchange for the Birks Jewelery Site and a portion of the Cogswell Interchange Lands (both owned by HRM).