

**1. LIGHT RAIL PILOT PROJECT: RECOMMENDATIONS FOR IMPLEMENTATION**

**COMMITTEE RECOMMENDATIONS**

**That Council approve:**

- 1. The implementation of the Light Rail Pilot Project on Canadian Pacific Railway's (CPR) Ellwood Subdivision, as an independent project of the Region and OC Transpo, by the summer of 2001;**
- 2. The establishment of new project authority to accommodate \$16,000,000 of expected one-time costs and \$3,940,000 of expected operating costs for each of two years;**
- 3. That the project authority for the West Transitway Project No. 942-30626 be adjusted as detailed in this report;**
- 4. The proposed general terms of agreement with Canadian Pacific Railway as contained in Annex A, and the proposed general terms of agreement with Bombardier as contained in Annex B.**

**DOCUMENTATION**

- 1. Planning and Development Approvals Commissioner and General Manager, OC Transpo joint report dated 9 Sep 99 is immediately attached.**
- 2. Extract of Draft Minute, joint Corporate Services and Economic Development Committee, Transportation Committee and Transit Services Committee meeting, 16 Sep 99, will be circulated prior to the Council meeting and will include a record of the vote.**

REGION OF OTTAWA-CARLETON  
RÉGION D'OTTAWA-CARLETON

REPORT  
RAPPORT

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Our File/N/Réf.                    48-95-0084  
Your File/V/Réf.

DATE                                9 September 1999

TO/DEST.                         Co-ordinator, Transportation Committee  
Co-ordinator, Transit Services Committee  
Co-ordinator, Corporate Services and Economic Development  
Committee

FROM/EXP.                        Planning and Development Approvals Commissioner and  
OC Transpo General Manager

SUBJECT/OBJET                 **LIGHT RAIL PILOT PROJECT:  
RECOMMENDATIONS FOR IMPLEMENTATION**

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**DEPARTMENTAL RECOMMENDATION**

**That Transportation Committee, Transit Services Committee and Corporate Services and Economic Development Committee recommend Council approve:**

- 1. The implementation of the Light Rail Pilot Project on Canadian Pacific Railway's (CPR) Ellwood Subdivision, as an independent project of the Region and OC Transpo, by the summer of 2001.**
- 2. The establishment of new project authority to accommodate \$16,000,000 of expected one-time costs and \$3,940,000 of expected operating costs for each of two years.**
- 3. That the project authority for the West Transitway Project No. 942-30626 be adjusted as detailed in this report.**
- 4. The proposed general terms of agreement with Canadian Pacific Railway as contained in Annex A, and the proposed general terms of agreement with Bombardier as contained in Annex B.**

## INTRODUCTION

On 9 September 1998, Regional Council granted a number of approvals pertaining to the Light Rail Pilot Project. Among these were the direction for staff to negotiate with Canadian Pacific Railway (CPR) and/or appropriate partners a public-private partnership agreement for pilot project implementation, and to develop related estimates of capital and operating costs.

Subsequently, on 9 December 1998, Regional Council approved a Memorandum of Understanding (MOU) between the Region and CPR. This MOU identified the principles that were to form the basis of a future agreement between the parties, to be negotiated by the summer of 1999, for implementation of the Light Rail Pilot Project as a turnkey operation.

In conjunction with the Light Rail Pilot Project Steering Committee, staff have worked intensively since December 1998 towards the development of a contractual agreement with CPR for the approval of Regional Council based on the MOU. Despite CPR's best efforts to develop a cost-effective proposal, the cost structures, collective agreements and work rules unique to railroads preclude the delivery of a turnkey proposal that conforms to the principles approved by Council.

In response to this situation, staff and the Steering Committee, with the assistance of KPMG Consulting, have identified an opportunity to deliver the service more cost-effectively by implementing the Light Rail Pilot Project directly under the control of OC Transpo. This approach has a number of important advantages which outperform CPR's ability to provide a cost-effective rail transit service. By directly implementing the pilot project, the Region can do so within the rough fiscal parameters set out by Council, thereby saving \$5.4 million in capital costs and approximately \$1.2 million in annual operating costs compared to a turnkey approach. Direct implementation will also avoid the difficulty of dividing rail work from OC Transpo's existing workforce and entering into a relationship with new collective bargaining units, and will allow the productive development of rail capability within OC Transpo.

The purpose of this report is to obtain Council's approval of the recommended approach to implementing the pilot project, the capital authority required for implementation, and the general terms of agreement with CPR and Bombardier.

## DISCUSSION OF SERVICE CONCEPT

### Rationale for Pilot Project

The Transportation Master Plan approved by Council in July 1997, and the Official Plan adopted at the same time, recommend the future use of the north-south CPR rail corridor known as the Ellwood Subdivision for public transit purposes. The introduction of light rail service in this corridor will help to achieve the transit usage targets identified in the plans, thereby reducing or deferring the need for infrastructure such as new or widened roads. Community concerns surrounding the Bronson Avenue/Airport Parkway corridor highlight this important consideration. The light rail corridor will complement the Transitway network, rather than compete with it, and together the two modes will create a more comprehensive rapid transit system.

The Light Rail Pilot Project proposed in this report provides:

- **Access to key transit markets:** Improved transit service to colleges and universities (particularly Carleton University) and business parks will be required to achieve OC Transpo's ridership objectives. The light rail corridor provides excellent access to these target markets, with the opportunity to make use of existing, underutilized infrastructure.
- **Transit by-pass of the Central Area:** OC Transpo's continued ability to provide high-quality rapid transit service at-grade on the Central Area Transitway will require that some transit trips now passing through the Central Area be diverted around it. The Central Area Transitway is near capacity and the need to pass through this area is a significant challenge to the system's speed and reliability. A light rail linkage between the West and Southeast Transitways would provide an important by-pass to reduce the demand for transit travel through the Central Area.

A detailed ridership analysis of the light rail service in the CPR corridor projected that this line would attract higher ridership at a much lower cost than the alternative rail corridors identified in the Official Plan. Ridership projections indicate that approximately 5,100 to 6,400 riders on an average weekday are expected to use the service, a number that would be expected to double by 2021. Pilot phase users will consist of two groups: a projected 4,100 to 5,100 riders per day who will switch from being bus users due to the improved service provided by light rail, and a projected 1,000 to 1,300 riders per day who will switch to transit from other modes, largely the automobile, due to improved service to key markets.

This pilot project will be the first step in implementing light rail in Ottawa-Carleton, and provides an opportunity to verify expectations about ridership, performance and cost so that Council may properly analyse the possibility of larger-scale implementation.

### Overview of Service Concept

The recommended Light Rail Pilot Project service concept includes the following elements:

- Use of the eight-kilometre CPR Ellwood Subdivision between Bayview and Greenboro, with five stations.
- Simple stations that provide safe, comfortable, accessible and attractive facilities for passengers, and that may be upgraded if the light rail service is made permanent.
- Two-way rapid transit service with fifteen-minute frequency using diesel-powered, low-floor, accessible light rail vehicles.
- Full integration with other OC Transpo services, particularly at the existing Greenboro Transitway station and a new Bayview Transitway station.
- An initial two-year pilot phase to be cancelled, rendered permanent or extended by two years at the discretion of Council.

**Annex C** illustrates the proposed light rail route along the CPR Ellwood Subdivision, from its south end adjacent to the Southeast Transitway station and Park and Ride lot at Greenboro, to its

north end at a new station beneath the West Transitway, west of Lebreton Flats and north of Scott Street. Three other stations, making a total of five, will be at Carling Avenue, Carleton University and Confederation Heights (Heron Road).

All efforts will be made to ensure that the light rail service will be a key element of an integrated regional transit system. High-quality transfers will be available to Transitway services at Bayview and Greenboro, and to regular bus routes at Carling and Confederation Heights. Users will not have to pay separate fares to transfer between bus and light rail. Light rail vehicles will be operated by OC Transpo staff, and light rail security and maintenance operations will also be harmonized with those along the Transitway. The light rail service will be marketed as part of overall transit system promotion.

The hours of service are intended to mirror OC Transpo operating hours, namely:

- 6:30 a.m. to midnight on weekdays;
- 7:00 a.m. to midnight on Saturdays; and
- 7:30 a.m. to 11:00 p.m. on Sundays.

The light rail vehicle to be supplied by Bombardier is known as the Talent, and has been developed in Europe. The key features of the Talent model proposed for the pilot project are:

- three-car units (not separable);
- low floors, with the entry doors and most of the interior space accessible to passengers in wheelchairs;
- a driver's cab at either end, eliminating the need to physically turn the vehicle around at the end of a run;
- seating capacity of approximately 135, with room for up to 150 standees;
- an overall length of 48 metres and a width of 2.9 metres.

Figure 1 illustrates an artist's conception of the Talent light rail vehicle (NB: the actual vehicle proposed also includes a third car between the two illustrated).



**Figure 1**

## Light Rail Stations

The LRT station concepts costed and proposed here conform to Council's requirement that the pilot phase be implemented at minimum cost while providing basic acceptable levels of passenger comfort, convenience, security and accessibility. A basic station concept has been developed and adapted for site-specific locations by Canadian Pacific Railway and a local engineering firm, Dillon Consulting, through review and discussion with the Region and the National Capital Commission as well as the public via the Environmental Assessment process. While there has been significant public input received asking for enhancements to the basic station concepts, particularly that of the Bayview station, this report recommends station concepts that can be built within the approximate cost envelope set out by Council. It is important to recognize that the proposed station concepts will remain subject to Council's later approval of specific functional designs. The station concepts presented here are for budgetary purposes and their costs have been estimated at a Class "C" level. They will be built at a fixed contract cost with CPR as general contractor, as will most track and structure upgrades.

The following basic details apply to all stations:

- **Platforms:** Passenger platforms have outside dimensions of 35 m by 5 m and a 1% slope toward the rail line. Basic platform construction will be a timber crib for external walls and internal bracing, filled with granular material where allowable bearing pressures permit or with expanded polystyrene material where a light structure is required. The platform surface will consist of an asphalt pavement throughout. Three removable aluminum entrance extensions (with rubberized non-slip surfaces) 4 m in length will be placed at each train door location. A rubberized, non-slip yellow edging strip 750 mm wide will be placed in front of the train door locations along the platform loading edge. A series of yellow, non-slip stripes will be painted on the asphalt surface between the edging strips for a distance of 750 mm from the load edge.
- **Shelters:** Two glass enclosed, unheated shelters will be placed on each platform and located to accommodate pathways and entrances onto the platform. The shelters are each 7.2 m by 1.7 m and have lighting and two bench seats, with one of the shelters having an add-on enclosure for two map cases and a public and emergency telephone. The shelters will be situated on a poured-in-place concrete slab.
- **Fencing:** A 1.2 m high chain link security fence with removable panels will enclose all edges with exception of the loading edge. The removable panels will be located within the train clearance envelope limits in order to permit wide loads to move through the station as required. Openings in the security fence will be located at all pathways and other entrances.
- **Amenities:** Each platform will have three standard pedestrian-scale lamp posts to supplement the shelter internal lighting, two bench seats (in addition to those within the shelters), garbage and recyclable material containers, and station name and directional signage.

New pathways between station platforms and adjacent transit or public access routes will be a minimum of 2 m in paved width, illuminated with standard pedestrian style lamp posts located at spacings between 30 m and 40 m, and will have longitudinal grades of 5% or less and cross-slopes of 1% where required.

**Annex D** describes the key features of the station concept at each location.

### Establishment of Cost Targets

Through its approvals in September and December of 1998, Council established cost guidelines for the pilot project – namely, that the capital cost of the Light Rail Pilot Project should be \$16 million, and the annual operating cost should be \$3 million unless ridership exceeded targets. These objectives were based on an analysis of the comparable investment required to carry similar transit ridership on a bus-based system. The cost guidelines did not ascribe any value to the experience and information that will be gathered during the pilot implementation, or to the improved transit service provided to thousands of daily users.

The cost objectives were acknowledged in the staff report to be “conservatively low” (i.e., it could be argued that they should be somewhat higher) but were quite similar to estimates of the approximate costs of implementing the pilot project, and were therefore felt to be suitable guidelines for negotiations with CPR. They were not intended to limit Council’s ability to eventually approve, modify or reject the implementation of the pilot project in any given form. Despite this, the proposed approach has been successful in remaining within the rough limits set out by Council – namely \$16.0 million in capital costs and \$3.9 million in gross operating costs. It should be noted that the expected operating cost of \$3.9 million reflects all incremental costs to OC Transpo of the project.

### DISCUSSION OF RECOMMENDED APPROACH

The estimated costs associated with a turnkey approach, as developed by CPR and supplemented through work by Regional staff and consultants, are \$21.4 million in capital costs and \$5.1 million in annual operating costs. It is evident that these figures significantly exceed the objectives outlined in the preceding section.

For this reason, staff recommend an approach to pilot project implementation that delivers the same product as a turnkey approach, yet differs comprehensively in the means of delivery and is significantly more cost-effective. The Region and OC Transpo would take control of all aspects of the project, and would contract with CPR to assist with some aspects of the startup program such as design and construction. **Annex E compares** the related roles and responsibilities of CPR, the Region and OC Transpo for both the turnkey and recommended approaches.

The recommended approach takes full advantage of opportunities for cost reduction that are identified in the following section of this report, including those related to vehicle operators, vehicle acquisition, signals and rail traffic control, infrastructure maintenance, and vehicle import duties and taxes.

In summary, the recommended approach has the following significant advantages compared to the turnkey approach developed by CPR:

- lower capital costs;
- lower operating costs;
- more complete integration and harmonization of security, maintenance and other similar services with OC Transpo's system; and
- builds in-house expertise that would be useful for planning future system expansions.

**Annex A** and **Annex B**, respectively, contain the proposed general terms of agreement with Canadian Pacific Railway and Bombardier which would be the foundation of the contractual relationships required to implement the recommended approach. As shown in those Annexes, the proposed terms of agreement with CPR and Bombardier both allow for an extension of the pilot phase from its base duration of two years to as many as four years, at the discretion of Council.

### Business Case for Direct Implementation

Once it became apparent in June 1999 that the total capital and operating costs of CPR's turnkey approach would be substantially in excess of Council's guidelines, staff and CPR initiated efforts to find lower-cost alternatives to several high-cost elements of the turnkey approach. The following paragraphs highlight the key issues and alternatives examined.

- **Vehicle operators:** The certification of OC Transpo as a short-line railway would allow the use of OC Transpo operators, instead of CPR's unionized labour, as light rail vehicle operators and would thereby substantially reduce labour costs for startup training and ongoing operations. CPR has itself been moving to more and more "short-lining" of their own operations to remain competitive through the use of spin-off companies. By leasing the rail line from CPR and managing the light rail service independently, inefficient work rules and labour practices can be avoided and existing labour relations can be strengthened. The labour cost savings possible through this approach include about \$500,000 in reduced one-time training costs, and about \$500,000 per year in operating costs.

The use of a single operator on each light rail vehicle, which was proposed by CPR under the turnkey approach and is also included in the recommended approach, has not been approved yet by Transport Canada. Exemptions to the requirement for more than one operator per vehicle can be granted upon submission of a detailed application, and have in fact been granted to a Québec railway in one recent instance. While it cannot be absolutely confirmed until OC Transpo has prepared and submitted a detailed application for review and approval, there appears to be a high probability that an exemption would be granted. Staff have met with Transport Canada officials and have obtained an expert consultant's advice that such an exemption would likely be forthcoming. In the unlikely event that a second operator is required on each vehicle, the additional project operating costs would be about \$400,000 per year.

- **Vehicle acquisition:** Under the proposed approach, the Region would purchase three Talent train sets from Bombardier for \$16.8 million while protecting a guaranteed buy-back of \$13.3 million after the two-year pilot phase, for a net pilot project cost of \$3.5 million. Compared to the vehicle lease arrangement proposed by CPR for the turnkey approach, this approach yields a lower net present value of vehicle acquisition costs if the Region does not exercise its



option to sell the vehicles back to Bombardier, and makes the pilot project permanent. The purchase and buy-back option also provides the possibility of importing the vehicles temporarily without the application of duties and taxes while pursuing the full waiving of these charges through an Order in Council (see tax paragraph below).

- **Signals and rail traffic control:** Railways have a number of alternative systems to keep track of where trains are at any time, and to give the train operators instructions regarding permitted movements. These systems comprise both infrastructure elements (i.e., signals, detectors and communications lines) and rules to be followed by operators. As part of its turnkey approach, CPR proposed installing a new centralized train control (CTC) system for the pilot project to replace an antiquated CTC system that was extensively damaged in the ice storm of 1998. CPR was only able to manage the pilot project if it was integrated with the railway's existing operations – an approach that would have led to higher costs than necessary. This approach would have been both infrastructure-intensive and labour-intensive, requiring extensive communications and signalling systems as well as the establishment of a dedicated 24-hour dispatch desk in Montreal. Based on the work of expert consultants and discussions held with Transport Canada (the regulator of railway safety), the recommended approach provides for a more efficient and equally safe pilot project train control system. It is expected that this approach will yield savings of \$2 million for train control infrastructure and rail traffic control setup, and \$300,000 annually for rail traffic control services and maintenance.

It is expected that Transport Canada will approve the proposed train control system, however this expectation cannot be confirmed until OC Transpo has prepared and submitted a detailed application for review and approval. It is possible, but unlikely, that Transport Canada could require train control elements that are more substantial than the currently envisioned system. The best advice of staff and various consultants have been used to develop the budget for train control system, and the ideas underlying these estimates were also tested during meetings with Transport Canada officials.

- **Infrastructure maintenance:** As part of its turnkey approach, CPR would establish a full-time maintenance crew in Ottawa to minimize light rail service interruptions resulting from maintenance problems. Because Ottawa is an “island” for CPR this would require the creation of local capacity “from scratch.” However, by contracting with a railway that already has crews in the Ottawa area (e.g., Canadian National Railway, Ottawa Central Railway or Québec-Gatineau Railway), the Region can obtain the same levels of routine inspection and preventative maintenance proposed by CPR without bearing the cost of a dedicated maintenance crew. CPR is not willing to consider contracting out of infrastructure maintenance for a light rail service under its control, so the Region must lease the rail line from CPR and manage the light rail service independently in order to pursue this less-costly approach to maintenance provision.
- **Vehicle import duties and taxes:** The Government of Canada receives applications for a deferral of customs duties and GST on equipment imported for temporary use. Staff have received expert advice from KPMG (see letter attached as **Annex F**) that the Region would likely be successful in applying for such a deferral, allowing the vehicles to be imported temporarily into Canada without the application of 8% duty and 7% GST. KPMG's tax department undertook several meetings with Revenue Canada officials responsible for

allowing deferrals of tax and duties and prior to issuing its advice. While the standard deferral period is eighteen months, an additional six-month extension is also offered and longer extensions may be considered. The Region would thereby avoid paying \$1.495 million including tax for duties and \$505,000 for GST for the pilot phase. During the pilot phase, an application would also be made for the complete waiving of these taxes and duties via an Order in Council, which is a more time-consuming undertaking. Because the Region is more likely to be successful in applying for tax and duty relief than would CPR, the recommended approach is considered to be more favourable than a turnkey framework for the pilot project.

### Costs of Recommended Approach

Table 1 presents the expected pilot phase capital costs of \$16.0 million and annual operating costs of \$3.9 million.

Table 1 includes appropriate contingencies built into the estimated cost of all major infrastructure items and all operating items, which are intended to address a reasonable range of unforeseen circumstances but may be insufficient in case of a substantial change in scope (e.g., federal government imposition of a major scope change related to train control, number of required operators, or vehicle taxes and duties as discussed in the previous section).

Another scope change that is very unlikely to occur, but of which Council should be aware, is related to noise attenuation. As part of the recently completed Light Rail Pilot Project Environmental Assessment, initial noise studies based on actual readings from a two-car version of the Bombardier Talent found that no noise attenuation would be required. However, supplemental noise studies were conducted for the maximum noise allowance of the three-car version of the Talent, which became available at the same price and was judged to be preferable for the Region's purposes. These supplemental studies indicated that noise barriers would be required adjacent to residences along the CPR rail line if the three-car Talent's noise emissions proved to be at the upper end of the vehicle's design specification envelope (which had to be used for analysis in the absence of actual readings). However, this high noise level is not considered likely since Bombardier's three-car specification envelope is very conservative when judged against the known noise level of the two-car Talent. Bombardier has also noted that, if required, modifications could likely be made to the vehicles to reduce noise emissions somewhat and obviate the need for noise barriers. However, if monitoring after pilot project startup demonstrates, against expectation, that noise barriers are indeed required then the additional capital cost envelope for design and construction would be about \$1.3 million.

Based on initial discussions with affected landowners (Public Works and Government Services Canada, and the National Capital Commission) staff expect that a lease of required lands will be obtained for the pilot phase at no cost to the Region.

It should be noted that Table 1 does not include an estimate for any incentive payments that would be made to CPR should average weekday ridership during the pilot phase exceed the minimum target of 5,100 passengers, as per the proposed terms of agreement with CPR shown in **Annex A**. It is proposed that such incentive payments be made directly from OC Transpo and funded by the extra revenue brought about by above-target ridership levels.

**Table 1. Expected Costs of Recommended Approach (\$000s)**

<b>Capital Cost Items</b>	<b>Item Cost</b>	<b>Taxes</b>	<b>Total Cost</b>
Corridor lease (two years)	\$500	\$15	\$515
Track rehabilitation	\$1,480	\$45	\$1,525
Tunnel/bridge rehabilitation	\$1,235	\$40	\$1,275
Station construction	\$4,540	\$135	\$4,675
Fencing installation	\$395	\$10	\$405
Train control installation <sup>1</sup>	\$575	\$15	\$590
Vehicle operator training	\$290	\$10	\$300
Vehicle acquisition <sup>2</sup>	\$3,530	\$1,345	\$4,875
Vehicle modifications <sup>3</sup>	\$610	\$65	\$675
Vehicle maintenance facility	\$735	\$20	\$755
Project management	\$190	\$0	\$190
Startup marketing	\$50	\$0	\$50
Monitoring equipment	\$165	\$0	\$165
<i>➤ Pilot phase total</i>	<i>\$14,295</i>	<i>\$1,700</i>	<i>\$15,995</i>
<b>Annual Operating Cost Items</b>	<b>Item Cost</b>	<b>Taxes</b>	<b>Total Cost</b>
Service supervision	\$220	\$0	\$220
Vehicle operators <sup>4</sup>	\$515	\$0	\$515
Fuel	\$175	(incl.)	\$175
Security	\$175	\$0	\$175
Rail traffic control services <sup>1</sup>	\$110	\$5	\$115
Track maintenance	\$495	\$15	\$510
Station maintenance	\$200	\$5	\$205
Vehicle maintenance	\$1,175	\$130	\$1,305
Maintenance facility operation	\$115	\$5	\$120
Property tax	\$230	\$0	\$230
Insurance	\$330	\$0	\$330
Public information, monitoring	\$40	\$0	\$40
<i>➤ Pilot phase total</i>	<i>\$3,780</i>	<i>\$160</i>	<i>\$3,940</i>

Notes:

1. Federal approval of preferred train control system is expected but not guaranteed (see “Business Case for Direct Implementation”)
2. Federal approval of GST and duty deferral on vehicle purchase is expected but not guaranteed (see “Business Case for Direct Implementation”)
3. Estimate
4. Federal approval of one operator per vehicle is expected but not guaranteed (see “Business Case for Direct Implementation”)

Other:

- GST calculated at 3% (i.e., net of rebate) where applicable
- “Item Cost” for some materials includes PST
- Excludes costs of pilot phase extension, cancellation or continuation
- Excludes incentive payments, if any, to be paid by OC Transpo to CPR based on ridership exceeding minimum target

### Timing of Recommended Approach

The time taken to complete the planning process thus far has, unfortunately, impacted on Bombardier's ability to deliver light rail vehicles in the summer of 2000 without charging significant additional costs to the Region. The earliest possible date for vehicle delivery to Ottawa at the costs cited in this report would be the late winter or early spring of 2001. This would permit a pilot project launch in the late spring or early summer of 2001 at the earliest.

### Pilot Project Cancellation

Council has given direction for a two-year pilot phase of the light rail project. Shortly before the two-year mark, Council will be faced with a decision to extend the pilot phase for an added two years, declare it permanent, or terminate it. Council must be aware that termination of the pilot phase would necessitate some expenditures and also bring some financial returns. The cost of decommissioning vehicles, including return shipping to Europe, could approach \$900,000. The cost of decommissioning stations is difficult to estimate, since the amount of work to be done would depend on whether Council chooses to leave some elements in place for possible future use. To offset these costs there would be the potential for some elements of the station and track infrastructure to retain a post-pilot salvage value which, depending on the extent of decommissioning, could be as high as \$500,000.

**Annex G** contains additional information related to the financial implications of possible future Council decisions to either extend the pilot phase by two years or declare it permanent.

### NEXT STEPS

It is recommended that implementation of the Light Rail Pilot Project should follow normal Regional practice for Transitway projects. According to this approach, the Region would be responsible for construction of the rail and station infrastructure, and OC Transpo would be responsible for operation and maintenance of the built facilities. There would be extensive cooperation between Regional and OC Transpo staff during the planning and design process, and both Council and the Transit Commission would have approval authority for different aspects of the project. Some specific roles and responsibilities are noted in the following paragraphs.

#### OC Transpo

Upon approval of this report, OC Transpo would hire a project manager with rail operating experience to coordinate overall pilot project planning (and OC Transpo efforts in particular), liaise with Regional staff in PDAD and ETD, and develop the required applications for operating approvals. OC Transpo will also have to apply for certification as a railway under provincial short-line legislation.

## Region

ETD staff will oversee the finalization of functional station designs (including public consultation) based on the concepts developed to date. ETD staff will also oversee the contracts for infrastructure work and provide construction supervision.

## Committee and Council Approvals

As per normal practice, it is expected that Corporate Services and Economic Development Committee and Council will consider Regional supplier contracts, that Transportation Committee and Council will consider the functional designs of light rail stations and access routes, and that Transit Services Committee and Transit Commission will consider the final light rail station designs, service plans and OC Transpo supplier contracts. In the course of preparing the proposed station designs and service plans, it is possible that additional elements beyond those currently foreseen will be placed before Councillors for consideration. Such elements could only be approved if efficiencies are found elsewhere within the pilot project budget, or if additional capital authority is approved at that time.

## CONSULTATION

Consultation over the last 18 months has been a very important part of the planning process leading up to this report, including:

- twenty-seven meetings of the Steering Committee (which includes two Councillors and two members of the public);
- eight meetings of the Sounding Board (which includes more than twenty agency and interest group representatives) including one scheduled for 9 September 1999;
- three public forums on light rail;
- three public meetings and four Public Advisory Committee meetings held as part of the Environmental Assessment (EA) process, at which information related to the EA as well as the overall pilot project was presented.

However, since much of the work with CPR has been conducted as negotiations, staff have not been able to share detailed, substantive information on the pilot project with the Sounding Board or general public since the most recent Sounding Board meeting on 2 March 1999 and the most recent EA public meeting on 28 April 1999. Additional future consultation is required to inform the public more fully about pilot project plans, and to obtain input on specific elements of the project such as station designs and service plans before those elements are brought forward for final approval.

Staff propose that the Sounding Board, perhaps with a revised membership, should continue to assist with the planning of the broader consultation program accompanying pilot project implementation. This broader consultation program should, in general, follow the established principles and tools used for Transitway projects, including Regional public meetings on infrastructure design and neighbourhood impacts, and OC Transpo public meetings on transit service issues. Also following usual practice, OC Transpo will consult with the Regional Transit

Advisory Group and the Accessible Transit Advisory Group, and the Region will consult with Regional Cycling Advisory Group.

As discussed previously in this report, staff are aware that a number of community associations and other interest groups are supportive of enhancements to the preliminary light rail pilot project concepts presented by CPR at public meetings early in 1999. Examples of such enhancements that have been identified to date include a pedestrian bridge across the Rideau River south of Carleton University, a drop-gate to warn users of the Brookfield recreational path of coming trains (rather than CPR's proposed use of a "zig-zag" gate), additional access routes to the new light rail and Transitway stations at Bayview, and improvements to the pedestrian underpass at Carleton University. These possible enhancements are outlined in **Annex H**, and others will undoubtedly be identified through the consultation process. In reporting on the final recommended functional station designs, staff will bring forward a discussion of possible enhancements for Council's consideration, along with the identification of any additional capital authority required to implement them.

#### EXPENDITURE JUSTIFICATION

This report asks for Committee and Council approval of new capital authority to implement the Light Rail Pilot Project. Council approval of the general terms of agreement with CPR and Bombardier (contained in **Annex A** and **Annex B**, respectively) will grant the appropriate Regional signing officers the authority to commit to contracts which conform to those general terms. With specific respect to a contract with Bombardier, the Region must commit to such an agreement during September 1999 or the proposal will be withdrawn, thus necessitating this approach to approvals.

Further reports will be forthcoming to seek approval of specific contractual obligations for suppliers of engineering and other consulting services.

#### FINANCIAL STATEMENT

	Capital	Operating	Total
Expenditure Authority Requirement	29,300,000	7,880,000	37,180,000
Less: Recovery from Bombardier	(13,300,000)	-	(13,300,000)
Net Financing Requirement	16,000,000	7,880,000	23,880,000

*Approved by*  
*Nick Tunnacliffe, MCIP, RPP*

*Approved by*  
*M.J.E. Sheflin, P.Eng.*

FINANCE DEPARTMENT COMMENT

Based on the estimates contained in this report, total project funding in the amount of \$23.9 million will be required to fund the capital costs and operating costs related to this two-year pilot project.

Should Council adopt the recommendations contained in this report, it is recommended that a new transit fund project with spending authority of \$23.9 million to be funded from the Transit Capital Reserve Fund be approved by Council.

To create the capacity for 1999 transit capital reserve funding of \$23.9 million it is necessary to adjust the existing approved spending authority for the West Transitway capital project (No. 942-30626). This project currently has approved spending authority of \$54.845 million. In approving the 1999 Capital Budget and Forecast, Council anticipated this adjustment by passing a Motion that identified the use of approximately \$20 million of this project authority for other transit initiatives including light rail.

The following changes to capital project authority in the Transit Capital Fund are consequently recommended:

(\$M)	Existing	Change To	
	West Transitway	West Transitway	Light Rail Pilot
Approved Authority	54.845	34.845	23.880
Funded From:			
Capital Reserve	32.945	9.065	23.880
RDC	3.900	7.780	
Debt	18.000	18.000	

As has been pointed out in the report, additional funding will be required at the end of the pilot phase. A decision to terminate the pilot project will result, primarily, in decommissioning costs. These decommissioning costs are expected to be significantly offset by the expected salvage value of the project. A decision to continue or expand the light rail service will represent a waiver on the option to sell the light rail vehicles back to Bombardier at the guaranteed price. Also, additional costs will likely be incurred for corridor acquisition and structure rehabilitation. Depending on the decision taken by Council, these additional costs will need to be addressed in future budgets as the pilot project nears completion.

*Approved by*  
*J.C. LeBelle*  
*Finance Commissioner*

## **Proposed General Terms of Agreement with Canadian Pacific Railway**

### **General**

Where neither Lease #1 or Lease #2 is specifically referenced, consider the singular term “lease” to refer to both Lease #1 and Lease #2.

### **1. General Arrangement**

*Roles and Responsibilities:* The Region will operate the Light Rail Pilot Project, including lease and maintenance of the subject lands and infrastructure from CPR. CPR will undertake all approved construction activities. The lease of the subject lands and existing infrastructure will commence on the earlier of either April 1, 2001 or the first day of light rail passenger service.

*Subject Lands:* For Lease #1 the subject lands comprise the existing rail corridor along the CPR Ellwood and Prescott Subdivisions between a point to be agreed upon that is south of the planned Greenboro Station to the south and the south abutment of the Prince of Wales Bridge to the north, as well as sufficient lands within Walkley Yard to store and service three light rail diesel multiple units, and for Lease #2 the subject lands comprise the existing rail corridor along the CPR Ellwood and Prescott Subdivisions between a point to be agreed upon that is south of the planned Greenboro Station to the north and the end of the currently existing track near Leitrim Road to the south.

### **2. Financial Consideration**

*Base Rent:* For Lease #1, the Region will pay to CPR an annual base rent of \$250,000 (adjusted annually on the anniversary of the lease commencement date by the Canadian Consumer Price Index) in consideration of the lease of the subject lands and the transfer of all technical data, designs and plans in CPR's possession that pertain to the operation of a light rail passenger operation on the subject lands. The transfer of technical data, designs and plans will take place as soon as a definitive lease agreement is executed between the parties. For Lease #2, the Region will pay to CPR an annual base rent of \$1 in consideration of the lease of the subject lands.

*Additional Rent:* For Lease #1, the Region will pay CPR the amount of \$0.70 per weekday rider in excess of a base weekday ridership level of 5,100, to an annual maximum rent of \$1.7 million, including base rent. For the period 1 September to 30 April, the additional rent will be calculated once every four months and will be based on the average observed number of weekday riders in excess of 5,100, multiplied first by the number of weekdays in the period, and multiplied second by 1.2 (or 6/5) to provide credit for estimated weekend ridership. For the period 1 May to 31 August, the additional rent will be calculated following the same methodology, but adopting a



base weekday ridership level of 4,000 , rather than 5,100 in recognition of the summer university term.

*Realty Taxes:* During the term of Lease #1, the Region will pay all realty taxes on the improved right of way and subject lands, as well as any and all taxes, levies or other impositions relating to the passenger rail service being operated over the subject lands or the revenues or profits derived therefrom (e.g. business taxes, etc.). During the term of Lease #2, CPR will pay all realty taxes on the right of way and subject lands.

### **3. Term and Related Conditions**

*Term:* The leases will be for a term of four years, subject to termination and purchase options after two years have elapsed, as outlined below.

*Option to Purchase:* The Region will have three options to purchase segments of the Corridor at the end of year two and for the remaining term of the leases thereafter:

- Option 1 - Rail corridor from south abutment of Prince of Wales Bridge in the north to Greenboro Transitway Station in the south, for a price of \$6,795,000, including an allowance of \$575,000 for CPR out-of-pocket design phase costs. This price is based upon land size of 60 acres at \$100,000 per acre, is subject to measurement and includes fixtures.
- Option 2 - Walkley Yard land, rail fixtures and shop building for a price of \$1,005,000. This price is based upon a land size of 8.5 acres at \$90,000 per acre, is subject to measurement and includes fixtures.
- Option 3 - Rail corridor from Greenboro Transitway Station in the north to the end of existing track near Leitrim Road in the south, for a price of \$3,200,000. This price is based upon a land size of 40 acres at \$80,000 per acre, is subject to measurement and includes fixtures.

*Environmental Conditions:* After exercise of the options above, the Region will be responsible for any decontamination, clean-up and/or remediation (together the "remediation") of the subject lands which it may wish to do or be required to carry out ("mandated remediation") by any authority having jurisdiction, both as regards conditions in existence at the commencement of the lease ("pre-existing conditions") and those conditions that arise from the Region's own operations. However, the price payable by the Region for each property upon the exercise of any one of the aforesaid options will be reduced by the cost, if any, of any mandated remediation of pre-existing conditions actually carried out by or required of the Region within 12 months of the exercise of such option, but only to the extent necessary to bring the relevant portion of the subject lands to compliance with the minimum applicable Federal or Provincial environmental standards required for the operation of a railway or light rail transit system, and provided further that the scope and cost of such remediation shall have been previously agreed to in writing by CPR. During the term of the lease, the Region will be responsible for those conditions created by their light rail operations.

Prior to the exercise of such options, CPR will be responsible for the cost of any mandated remediation of the subject lands for those conditions in existence at the commencement of the

lease, to the extent only necessary to allow railway operations.

*Right of First Refusal:* During the term of the lease, the Region will have the right for 90 days to match any bona fide third party offer received by CPR for the subject lands.

*Termination Provisions:* the Region will have an option to terminate the lease after year two and at any time thereafter until the full term of the lease, by providing ninety days written notice.

*Freight Running Rights:* CPR will have exclusive freight rights on the corridor for time perpetual. These freight rights may be assigned by CPR to another Railway. In the event that the Region exercises its option to purchase the subject lands and subsequently determines to take the lands out of rail service and remove the track, these freight rights will terminate, subject to any required regulatory approval. It will be agreed that freight operations will be confined to the period from 1:00 a.m. to 5:00 a.m. daily, with specific freight train frequencies, schedules and maximum axle weights to be agreed upon by the Region and CPR. For these rights, CPR shall pay \$1 to the Region annually, which shall permit CPR to handle 5,000 car and locomotive movements on the territory annually. In the event that movements exceed 5,000 annually, CPR shall pay to the region a fee of \$10.00 for each such movement in excess of 5,000 annually.

*Fibre Optics Rights:* All revenues associated with fibre optics cables on the subject lands shall accrue to the Region after exercise of the purchase option and closing of the transaction on each parcel as outlined above. After the exercise of said options, CPR shall retain the marketing rights to fibre optics cables on the subject lands in order to ensure that it can offer a continuous corridor for fibre optics to communications companies. The Region will not object to any reasonable commercial proposal that CPR brings for future fibre deals or otherwise frustrate CPR's ability to deliver a longer corridor than just the subject lands. CPR recognizes that such proposals will be subject to the approval of the Regional Council.

#### **4. Capital Costs**

*Track, Fencing, Tunnel, Bridges, Crossings & Signals:* CPR will lease the subject lands to the Region, commencing on the earlier of April 1, 2001 or the first day of light rail passenger service. Prior to the commencement of the lease, CPR will act as general contractor to the Region and provide upgrades to the rail corridor, with fencing, track, tunnel and bridge changes made as approved by the Region and as generally outlined in the design phase. In addition, CPR will, as required by the Region, design and construct signals (including automatic crossing protection systems) and communications systems that are consistent with Transport Canada approvals yet to be obtained by the Region. Both parties recognize that it is impossible at this time to estimate the cost of this signals and communications system. The cost of the changes to the infrastructure of the rail corridor will be funded by the Region through a series of advance payments to be made to CPR based upon the construction schedule contained in a fixed price contract to be negotiated based on CPR's previously provided cost estimates (see Schedule A, attached), subject to changes in scope agreed between the parties and subject to the caveat above regarding the signals and communications system.

*Stations and Maintenance Facility:* CPR will act as general contractor to provide the Region

with all station and maintenance facility improvements designed and constructed as approved by the Region. The cost of the new upgraded and rehabilitated infrastructure will be funded by the Region through a series of advance payments to be made to CPR based upon the construction schedule contained in a fixed price contract to be negotiated based on CPR's previously provided cost estimates (see Schedule A, attached), subject to changes in scope agreed between the parties.

*Rolling Stock:* The Region will procure the rolling stock.

*Environmental Assessment:* The Region will complete the Environmental Assessment study and obtain associated approvals.

*Decommissioning and Salvage:* In the event that the Region does not elect to exercise any purchase option noted above, or terminates the leases prior to their conclusions, a rail plant sufficient for freight operations will be left in place that is not of a lesser quality than exists currently. Salvage during the construction of initial improvements to the subject lands shall be to the account of CPR. All other salvage will be to the credit of the Region.

*Technical Data, Designs & Plans:* CPR will transfer to the Region all rights to, and ownership of, technical data, designs and plans in its possession that pertain to the light passenger operations on the subject lands concurrent with the execution of a lease agreement.

*Transport Canada Applications & Approvals:* The Region will be responsible for obtaining any and all required approvals, including required approvals from Transport Canada. CPR will assist the Region with the process of application and review. All costs of applying for and implementing such approvals are to be borne by the Region, including CPR's cost to assist and review.

## **5. Operating Expenses:**

*Operating Authority:* In order to ensure that CPR can operate freight trains over the subject track, the Region shall either become a short line railroad under the relevant Provincial or Federal legislation and then become the certified operator of the subject lines or make arrangements with another party who is a railroad under the relevant legislation to become the certified operator of the subject lines.

*Corridor Lease:* The Region will pay basic rents and additional rent as described above.

*Supervision:* The region will provide all required supervision, management, coordination and operation services.

*Dispatch and Control of Diamonds:* The Region will provide dispatch services, including operating control over the Ellwood and Walkley diamonds. This change of control will necessitate some capital expenditure, which has been included in the capital estimates prepared for the Region by CPR. The Region shall assume all CPR's responsibilities regarding the rail diamond with CN's Walkley Line and the rail diamond with the Beachburg Subdivision (the Ellwood diamond).

*Infrastructure Maintenance:* For Lease #1, the Region will maintain the right-of-way, stations, signals and communications systems, including automatic crossing protection (subject to any sharing provisions with road authorities) and Walkley Yard maintenance facility. For Lease #2, the Region will carry out any and all routine inspections and maintenance to ensure that the rail line on the subject lands remains in a condition similar to what it is today. In the event that a requirement for a change of components occurs (such as rail replacement, tie replacement or reconstruction of culverts) CPR shall bear the cost of such work. This work will be done either by the Region, with CPR's written approval, or by CPR itself or another party to be appointed by CPR.

*Fuel:* The Region will provide fuel.

*Realty and other Taxes:* For Lease #1, the Region will pay all realty taxes on the improved right of way and subject lands during the term of the lease, as well as any and all taxes, levies or other impositions relating to the passenger rail service being operated over the subject lands or the revenues or profits derived therefrom (e.g. business taxes, etc.). For Lease #2, CPR will pay all realty taxes on the right of way and subject lands during the term of the lease.

*Rolling Stock Maintenance:* The Region will provide rolling stock maintenance.

*Operators:* The Region will provide, train and supervise all operators.

*Security:* The Region will provide security services.

*Insurance & Liability:* The Region will assume project risk with appropriate indemnity to CPR. The Region will fully indemnify CPR for any costs associated with noise, vibration, dust, fumes and other emanations complaints by landowners and residents adjacent to the subject lands associated with the light rail operations. CPR will remain liable for performance of activities which it may contract with the Region. CPR shall provide an indemnity to the Region and insurance approved by the Region (subject to CPR's right to self-insure) in the event that CPR carries out any freight services in accordance with the terms of the agreement.

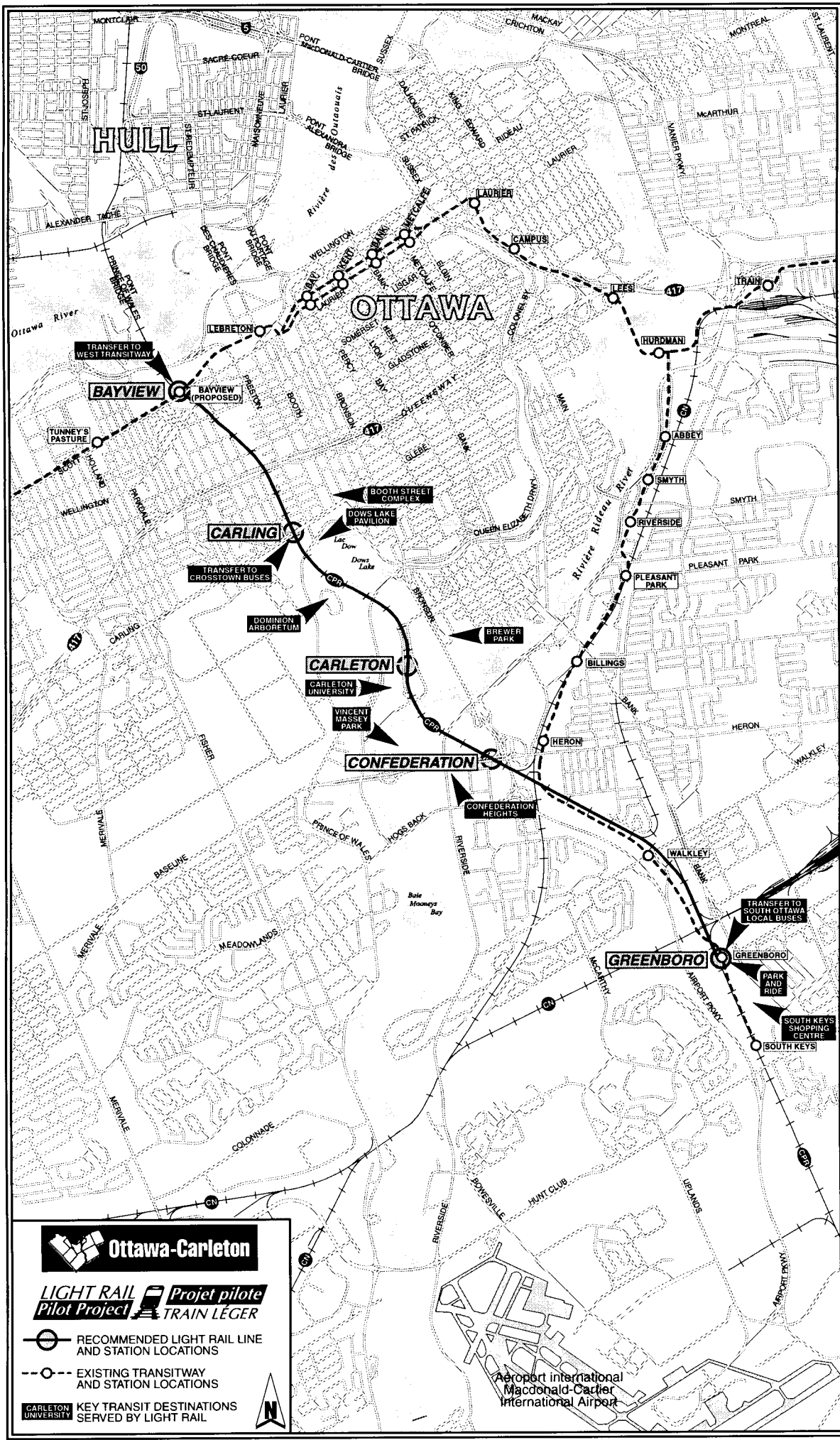
**Schedule A: CPR cost estimates for capital works**


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<i>Amount</i>	<i>Item</i>
\$1,480,000 plus GST	<b>Rehabilitation and improvement of existing track and Brookfield pathway crossing, and addition of passing track:</b> As specified in CPR Engineering Services proposal dated 14 April 1999, and as updated in correspondence from CPR dated 25 June 1999
\$1,237,000 plus GST	<b>Rehabilitation of Dows Lake tunnel, Rideau River bridge, Sawmill Creek bridge and culverts:</b> As specified in CPR Engineering Services proposal dated 14 April 1999
\$4,540,000 plus GST	<b>Five new light rail stations and new Bayview Transitway station:</b> As specified in CPR Engineering Services proposal dated 14 April 1999, further to Class “C” estimates and preliminary drawings by Dillon Consulting, and as updated based on correspondence with Carleton University
\$395,000 plus GST	<b>Corridor fencing, privacy barrier and associated landscaping:</b> As specified in CPR Engineering Services proposal dated 14 April 1999
\$735,000 plus GST	<b>Rehabilitation of maintenance facility at Walkley Yard:</b> As specified in CPR Engineering Services proposal dated 14 April 1999, and as updated in correspondence from CPR dated 25 June 1999

## **Proposed General Terms of Agreement with Bombardier**

- **Description of equipment:** The equipment specified for the Light Rail Pilot Project includes three Talent BR643 diesel multiple units (DMUs), configured in accordance with specifications as ordered by Deutsche Bahn.
- **Schedule:** With an agreement to purchase in September 1999, Bombardier deliver the fully-commissioned light rail equipment by March 2001.
- **Purchase and modifications:** Bombardier will sell the equipment to the Region for not more than \$16,831,000 plus any applicable taxes and customs duties or fees. Bombardier will undertake equipment modifications to meet Transport Canada requirements, at an additional cost to be paid by the Region. The final financial requirement for modifications is to be determined.
- **Buy-back options:** At the option of the Region, Bombardier will buy back the equipment 25 months after delivery for not less than \$13,300,000, or 49 months after delivery for not less than \$10,500,000.
- **Decommissioning and return transport:** Upon exercise of its buy-back option, the Region will pay for decommissioning of the equipment, including reversal of any modifications and return transport of the equipment to Europe. The estimated financial requirement for modifications is to be determined, and the requirement for return transport is expected to be no more than \$100,000.
- **Maintenance:** Bombardier will provide equipment maintenance services for a two-year pilot phase at a cost of \$1,990,000. At the option of the Region, Bombardier will provide up to two one-year extensions to the initial two-year term at a rate to be determined. Bombardier will also require an initial one-time purchase of capital spares at a cost of no more than \$150,000.



**Ottawa-Carleton**

**LIGHT RAIL** **Projet pilote**  
**Pilot Project** **TRAIN LÉGER**

- RECOMMENDED LIGHT RAIL LINE AND STATION LOCATIONS
- EXISTING TRANSITWAY AND STATION LOCATIONS
- KEY TRANSIT DESTINATIONS SERVED BY LIGHT RAIL

CARLETON UNIVERSITY

Aéroport international  
 Macdonald-Carrier  
 International Airport

## Station Concept Features

### **Greenboro Station:**

- The station will incorporate a single standard platform with two shelters.
- Access to the station will be provided through a bridge structure connecting to the upper level of the existing Greenboro Transitway Station. The connection point is located immediately adjacent to the existing elevator door on the upper level.
- The bridge will be a covered unheated structure with a glazed curtain wall and doors opening into the Transitway Station.
- Landscaping will be incorporated into the station platform arrangement to “soften” the hard features of the platform.

### **Confederation Heights Station:**

- The station will incorporate a single standard platform with two shelters.
- Access to the station will be provided by paved and illuminated pathways and stairs connecting to the existing pedestrian network within Confederation Heights and to the public sidewalk along Heron Road.

### **Carleton University Station:**

- The station will incorporate two standard platforms (one on either side of the passing track area) with two shelters on each platform.
- Access to the station platforms will be provided by paved and illuminated pathways connecting to the existing pedestrian network on Campus. Minor landscaping would be incorporated into the design.
- Security fencing will be incorporated into the station to discourage unauthorized crossing of the rail line by pedestrians and cyclists. This will include a security fence between the two tracks within the siding length, as appropriate.
- The existing culvert would be replaced by a new pedestrian tunnel on the same alignment, with modifications to the approaches to connect to the existing pedestrian network on Campus and incorporating access to the station.

### **Carling Avenue Station:**

- This station is located in the northeast quadrant of the rail corridor adjacent to Carling Avenue, adjacent to the tracks within a rock cut.
- The station will incorporate a single standard platform with two shelters.



- The vertical height difference between the station platform level and grade level on Carling Avenue is approximately 7 m.
- Public access to the station location will be provided through the use of an existing pathway connecting to Carling Avenue at the upper level on the east side of the rock cut. This pathway is located on property owned and maintained by the National Capital Commission.
- Direct access to the station platform will be provided through an illuminated and open stairway and an elevator between the existing level of the NCC pathway and the station platform level. The lobby areas for the stairs and elevator will be illuminated, in addition to the illumination on pathways and on the station platform.
- The design development incorporates a concrete retaining wall system to address grading issues within the area of the station platform. Barriers (chain-link fencing) will be installed along all lengths with vertical height differences of greater than 450 mm. Landscaping will be required to replace the tree growth removed during the construction of the station, stairs, elevator, and access pathways.

#### **Bayview Station:**

- The station concept places the light rail station platform below the existing Transitway bridge, about 7 m below the proposed new Transitway platforms on the eastern approaches to the Transitway bridge. The two sets of platforms are interconnected through the use of pathways or elevators.
- In order to minimize the distance between the two sets of platforms, the light rail platform will be positioned on a short spur verging east from the main rail line toward the Transitway platforms. Significant reductions were also made to the design standards for Transitways as set out in the Transitway Design Manual, in order to reduce the walking distance. The reductions in standards as used in the design development for the Pilot Project were reviewed and accepted by OC Transpo and the LRPP Steering Committee.
- The new Transitway platforms are east of the bridge over the rail line station so that nominal deceleration and acceleration lanes can be provided at a reasonable cost (i.e., without widening the bridge structure), to protect the smooth operation of the transitway. Eastbound and westbound traffic will be separated by a concrete median barrier. The speed through the station will be posted at 50 km/h. The platform length is 50 m.
- There are two shelters on each Transitway platform, located to accommodate pathways and entrances onto the platform. The shelters are each 7.2 m by 1.7 m with an add-on enclosure for two map cases, and a public and emergency telephone on one shelter only.
- Widening of the existing Transitway embankment is required to accommodate the stopping lanes and the new platform footprints.
- The LRPP station will incorporate a single standard platform at track level, connected to the Transitway station through a system of pathways.
- A signalized crossing of Scott Street provides access to the existing sidewalk along the south side of Scott Street.

## Roles and Responsibilities for Alternative Approaches to Light Rail Pilot Project Implementation

Role	Responsible Party	
	Turnkey Approach	Recommended Approach
<b>Control of rail line</b>	CPR	Region (by lease)
<b>Design:</b> Stations, track and tunnel rehabilitation, signals & communications, workshop refurbishment	CPR	Region (by contract to CPR)
<b>Construction:</b> Stations, track and tunnel rehabilitation	CPR	Region (by contract to CPR)
<b>Vehicle procurement:</b> Specification, ordering, modifications, testing	CPR	OC Transpo
<b>Vehicle maintenance</b>	CPR (by contract to Bombardier)	OC Transpo (by contract to Bombardier)
<b>Obtaining approvals:</b> Operating plan, vehicles	CPR	OC Transpo
<b>Maintenance:</b> Track, signals, right-of-way and stations	CPR	OC Transpo (some by contract)
<b>Operations:</b> Supervision, vehicle operation	CPR	OC Transpo
<b>Rail traffic control:</b> Dispatch services	CPR	OC Transpo (by contract)
<b>Security:</b> Stations, vehicles	CPR (some by contract to OC Transpo)	OC Transpo
<b>Scheduling, fare collection, marketing, monitoring</b>	OC Transpo	OC Transpo
<b>Performance risk:</b> Schedule adherence, service reliability and interruptions	CPR	OC Transpo
<b>Ridership risk</b>	Shared	OC Transpo
<b>Legal liability</b>	Shared	OC Transpo except for services provided by CPR



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Ottawa, ON  
K2P 2L7

September 1<sup>st</sup>, 1999

Dear Mr. Noxon

**Temporary Importations of Bombardier LRT Units**

The goods at issue are Bombardier Talent Multiple Unit Light Rail Transit self propelled rail cars, primarily designed for the transportation of persons. Under the RMOC Transportation Master Plan, these goods will operate as a pilot project on the CP Corridor for a period of 24 months.

**Customs Duty**

Under the *Customs Act*, goods imported into Canada must be accounted for to Revenue Canada, for the purposes of assessing customs duty and the goods and services tax. Canada uses the Harmonized System of Tariff Classification. The value for determining customs duty, used between unrelated parties, is the price paid or payable for the goods, with additions or subtractions, in accordance with the GATT (WTO) valuation code.

Based on the information provided to us by the RMOC, it is our view that the goods are correctly classified under:

**86.03 - SELF-PROPELLED RAILWAY OR TRAMWAY COACHES, VANS AND TRUCKS**

and more specifically 8603.90.00.00 that provides for the goods of 86.03 when they are *not* powered by mains fed electricity. The duty rate is 8% for 1999.

Notwithstanding, the *Customs Act* does address certain special situations for the temporary admission of goods into Canada for a variety of reasons. Under these regulations, all or part of the duty may be waived on importations if certain conditions are met. These conditions are outlined in the Department of National Revenue memoranda dealing with the temporary admission of goods into Canada.



In order to qualify for inclusion under the tariff item for temporary entry, legal Note 3 to Chapter 99 requires imported goods that qualify under a tariff item in Chapter 99, to be classified under a dual tariff classification system. Legal Note 3 reads as follows:

*Goods may be classified under a tariff item in this Chapter and be entitled to the Most-Favoured-Nation Tariff or a preferential tariff rate of customs duty under this Chapter that applies to those goods according to the tariff treatment applicable to their country of origin only after classification under a tariff item in Chapters 1 to 97 has been determined and the conditions of any Chapter 99 provision and any applicable regulations or orders in relation thereto have been met.*

Thus, it is our view, based on the information provided by the RMOC and meetings with Revenue Canada, that the goods may qualify for relief from customs duty under the temporary import regulations provided that:

1. RMOC acts as the importer of record;
2. The goods are not being imported for further sale, further lease, further manufacturing, or processing;
3. The goods are not prohibited from entry into Canada;
4. The goods meet or will meet the requirements of other government departments (such as safety inspection, environmental specifications, etc.);
5. The intended use is specified at the time of import; and,
6. The goods are imported in reasonable quantities.

Revenue Canada stipulates a maximum temporary importation time of 18 months for most goods. Given that the RMOC wishes to evaluate the goods over two successive winter periods, the department stated that they will consider an extension of time to 24 months upon application.

We are concerned that the Bombardier letter of August 11<sup>th</sup>, 1999 to Mr. Jeff Seider of KPMG, stated that:

*“Bombardier would retain ownership of the vehicles for some 8 to 10 weeks for remaining modification and commissioning.”*

This raises certain concerns in respect of points 1 and 2. Under point 1, the condition that the RMOC must act as importer of record is not usually negotiable. Point 2 may be waived or made less restrictive

if the goods are modified to suit the intended purpose in Canada. We understand that the proposed modifications will be temporary in nature, and that those modifications must be removed prior to export and to the account of the RMOC. In this instance, written authority from the Department of National Revenue must be sought prior to the transaction.

### **Goods and Services Tax**

In respect of the goods and services tax, there may be relief provisions. Under temporary entry, if the goods qualify, the tax may be relieved in full or on 1/60<sup>th</sup> basis. Further clarification on issues such as fare collection, etc., must be reviewed and finalized prior to making application for such relief. Notwithstanding any conditional relief provisions, the RMOC will be able to claim an input tax credit on the goods at the MUSH rate.

### **Ontario Retail Sales Tax**

It is our view that goods will not qualify for relief from the Ontario Retail Sales Tax. Although the provincial and federal governments have entered into an administrative arrangement whereby each government is exempt from the other's sales taxes, no similar arrangement exists for purchases made by other levels of government such as local, regional or municipal. The only exemption specific to municipalities is for fire-fighting equipment, provided in paragraph 7(1)23 of the ORST Act.

Consequently, there is no exemption that immediately appears to be available for the acquisition of the LRT trains based upon the nature of the purchase or lease.

The ORST legislation and the Regulations thereto do not contain any exemptions that appear to apply under the stated circumstances. Consequently, unless the vendor or lessor registers for ORST purposes and accounts for the tax on either the sale or on each lease payment in respect of the LRT trains, the Regional Municipality will be required to remit the appropriate amount of tax to Ontario on either the purchase or lease of the trains. From a cash-flow perspective, the lease option is preferable to the purchase option, since as long as this was a true lease and not a conditional sale contract, the ORST would be limited to 8% of each lease payment, rather than 8% of the entire purchase price, payable to Ontario up front.

Regulation 1012, §15.3 provides for tax on a reduced basis where a non-resident brings tangible personal property (TPP) into Ontario for temporary use. However, "temporary use" is defined as use in Ontario for a period not exceeding 12 months. ORST is payable monthly for each month (defined as a period of 13 consecutive days or more) of such use in Ontario, calculated as 8% of  $1/36 \times$  the net book value of the property at the time it is brought into Ontario. Where the TPP remains in Ontario for longer than 12 months, the non-resident is required to pay ORST based on the net book value of the property at the time it was brought into Ontario, reduced by any tax already paid on temporary use.

Although the regulation addresses TPP imported temporarily by non-residents of Ontario, the regulation is silent on how ORST applies when a resident of Ontario brings TPP into Ontario for use on

a temporary basis. Accordingly, we discussed the issue with the Retail Sales Tax Branch, who advised us there is no administrative relief available for a resident of Ontario who brings TPP into Ontario temporarily.

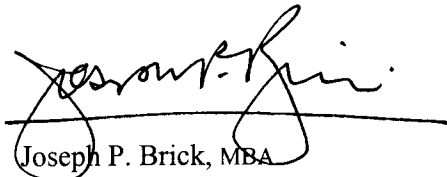
Relief under any temporary provision is moot however, as the LRT trains will be here for more than 12 months which precludes the use of the "temporary use" provisions to reduce the amount of ORST payable on the LRT trains, regardless of which party imports them into Ontario.

To summarize, relief from customs duty is possible providing that the conditions of the Department of National Revenue for such relief are met, and that the department so concurs. Based on the facts presented and discussions with Revenue Canada, and in the absence of any facts contrary to the stated positions, we believe that such relief will be granted. The goods and services tax relief will be conditional on the department's technical interpretation in respect of the use of the goods in Canada. Such relief, if granted, may be full or partial in nature. Currently, there are no relief provisions from the Ontario Retail Sales Tax.

The views in this letter are based upon information provided by Bombardier and the RMOC. Nothing in this letter constitutes an opinion of KPMG LLP. Prior to undertaking the importation of these goods, a National Customs Ruling should be obtained. As well, a technical interpretation should be obtained in respect of the goods and services tax.

I trust the foregoing to be satisfactory, however should you have any questions or concerns, please do not hesitate to contact me and I will be happy to oblige, and remain,

Yours very truly



Joseph P. Brick, MBA  
Vice President  
Trade and Customs Service  
KPMG Canada  
(416) 777-8413

cc: R. Gavsie, KPMG Canada  
J. Seider, KPMG LLP

## **Implications of Pilot Phase Extension or Declaration as Permanent**

### Pilot Phase Extension

As illustrated in Annex A and Annex B, the proposed terms of agreement with CPR and Bombardier both allow for an extension of the pilot phase from its base two-year duration to as many as four years. In addition to the extra operating costs that would arise from a Council decision to extend the pilot phase, there are also capital costs that would be incurred -- notably additional lease payments to CPR, a reduction in Bombardier's guaranteed buy-back price, and the vehicle taxes and duties which are expected to be deferred for two years (but which could also be waived entirely or deferred for an extra two years).

### Permanent Light Rail Service

In looking ahead it is worth identifying several important implications of an eventual decision to make the pilot phase permanent.

Council has clearly expressed its desire to minimize costs of the pilot phase. For this reason, the recommended pilot project incorporates several elements that provide lower levels of durability, comfort or convenience than would be typically included in a project designed to have a long life. Upgrading or replacing these elements after a pilot phase would be necessary to ensure more appropriate levels of durability, passenger comfort or convenience. The following points discuss the most significant related implications.

- **Light rail vehicles:** A decision by Council to make the pilot project permanent would represent a waiver of the option to sell the light rail vehicles back to Bombardier at a guaranteed price. This would require a change to the project authority to recognize that the related recovery of \$13.3 million would not occur.
- **Corridor acquisition:** Use of the CPR line will be acquired by lease for a pilot phase of at least two years and (at the Region's option) as much as four years in duration. However, it is expected to be in the Region's interest to acquire ownership of the corridor for a permanent operation. To this end, staff have reached an agreement with CPR on the terms of an option for the Region to purchase the corridor at a pre-determined price (**see Annex A**). This would secure the corridor from the Ottawa River to Leitrim Road as well as the Walkley Yard. Similarly, the Region would need to secure longer-term access to lands leased from the NCC and PWGSC for the pilot phase. However, even assuming market rates for these lands, the cost implications are not considered to be large.
- **Tunnel and bridges:** Partial rehabilitation of these structures is required for safe operation of the pilot phase, but full rehabilitation at an approximate cost of \$1 million would provide appropriate facilities for a permanent service.

- **Maintenance facility:** The maintenance facility at Walkley yard that is recommended for pilot project use would be created through upgrades to a building currently in disrepair. An extension of the structure is required to house the light rail vehicles, and the current proposal is to use a temporary canvas-walled structure. A permanent light rail service might require a new, larger maintenance facility at an approximate cost of \$6 million to \$8 million.
- **Stations:** The stations designed for the pilot project would be adequate for several years, but they have not been designed for long-term durability (e.g., platforms are timber cribs and surfaced with asphalt). No firm estimate has been made for the eventual replacement of temporary elements and upgrading of passenger facilities, but an estimate in the order of \$5 million would be reasonable.
- **Tracks:** It would be desirable, but not required, to replace the existing jointed rail track on the CPR line with continuous welded rail at a cost of \$2 million. This measure would increase passenger comfort while reducing noise and ongoing maintenance costs.



## **Possible Enhancements to the Recommended Approach**

The estimated costs identified in this report are considered by staff to be sufficient to implement a pilot project that is consistent with the general service concept approved by Council in September 1998. For example, the estimated costs of station construction are based on preliminary station designs developed by CPR with input from the Light Rail Pilot Project Steering Committee, staff and the public (the last via displays at public meetings on the Region's Environmental Assessment Study in early 1999) that conform to basic requirements for passenger safety and comfort, accessibility, attractiveness and durability.

It is important to note that the cost estimates contained in this report are presented principally to justify the level of capital authority being sought – this report does not seek approval of the preliminary designs on which the estimated costs are based. Notwithstanding this fact, staff are aware that a number of community associations and other interest groups are supportive of enhancements to the preliminary station concepts developed by CPR. Possible enhancements will likely be identified through future consultation processes. As discussed in this report, Council and its standing committees will have future opportunities to approve the basic proposed light rail station concepts along with possible enhancements and the additional required capital authority.

Several notable possible enhancements are discussed in the following paragraphs:

**Pedestrian crossing of the Rideau River south of Carleton University:** The existing bridge that carries the CPR line across the Rideau River currently serves as a convenient, illegal route for pedestrians travelling between Carleton University and Vincent Massey Park. The very low train activity on the CPR line has contributed to the sense of security felt by trespassers, who have limited refuge possibilities should a train arrive while they are midway across the bridge. The frequent use of the bridge by light rail vehicles would clearly require stringent anti-trespassing measures and, to this end, CPR's preliminary trespassing mitigation plan proposed secure fencing of the corridor, signage, education programs and active enforcement with fines being issued to violators. This plan was developed by experienced railway operations staff who were confident of its potential to eliminate trespassing. Any remaining potential for trespassing activity could be reduced further by providing an alternative path for pedestrians to cross the Rideau River – for example, through construction of a new footbridge for pedestrians and cyclists adjacent to the railway bridge, or even structurally integrated with it. This enhancement could have an incremental capital cost of as much as \$500,000, based on a preliminary estimate.

**Warning device at Brookfield recreational path crossing:** Pedestrians and cyclists on the Brookfield recreational path, just east of the Airport Parkway and south of Heron Road, are now warned of approach trains by flashing lights and bells. Due to the frequency of usage by light rail vehicles, CPR had outlined a preliminary proposal to supplement the lights and bells by installing a “zig-zag” gate (also referred to as a “maze”) that would direct pedestrians and cyclists to travel in a manner requiring them to look both ways before crossing the rail line. Some members of the cycling community are concerned that such a device would inhibit their movement, and have proposed an automatic drop-gate as a less-restrictive solution. This enhancement could have an

incremental capital cost of as much as \$150,000 as well as ongoing operating and maintenance costs that have not been estimated.

**Pedestrian underpass at Carleton University:** During its design phase work, CPR made a decision to prohibit at-grade crossings of the light rail line at Carleton University, of which there are currently several. This decision was supported by members of the University's student association, residents association and administration who were consulted. However, aside from the University's underground tunnel system, the only existing grade-separated crossing is a culvert which does not conform to barrier-free design standards and which many users tend to avoid (particularly at night) for personal security reasons. After an extensive assessment of alternatives, CPR developed a preliminary station design (on which the estimated costs presented in this report are based) which incorporated a new pedestrian underpass in the same location as the current facility, but which would be shorter, wider, accessible to disabled persons and more secure. Carleton University has agreed to fund a portion of the cost for this work. CPR also identified several alternative designs which are functionally similar to the preferred preliminary design, but which provide reduced walking distances for transit users who wish to cross the line. The incremental capital costs of these possible enhancements vary from approximately \$200,000 to \$900,000 above the preferred preliminary design.

**Access routes to the new light rail and Transitway stations at Bayview:** During its design phase work, CPR placed a great degree of emphasis on developing an effective yet economical design for the new light rail and Transitway stations at Bayview. The extent of infrastructure required at this location, combined with a relatively remote location and the challenges presented by a large height difference between the rail and Transitway facilities, meant that some degree of compromise would inevitably be required if the light rail project were to adhere to Council's intent to pursue basic functionality at minimal cost. In the opinion of staff, the preliminary Bayview station design on which the cost estimates are based would provide degrees of passenger comfort, convenience and security that are acceptable for a pilot project. There are also a number of enhancements which could be made to this design for either the pilot phase or for a permanent operation, at incremental capital costs ranging up to several million dollars. Several of these enhancements would provide added features, including:

- an elevator and stairs to replace the proposed pathway-only system (approximately \$750,000);
- a reduction of approximately 3 m in the vertical separation between the rail and Transitway platforms (i.e., from 7 m to 4 m), by raising the proposed spur track above the surrounding grade (approximately \$200,000);
- an additional pathway and stairs connecting the light rail station directly to the south side of Scott Street, rather than obliging nearby neighbourhood residents and eastbound Scott Street bus users to cross Scott Street at a new signalized intersection (approximately \$225,000).