

4. LIGHT RAIL PILOT PROJECT - PROGRESS REPORT NO. 3

COMMITTEE RECOMMENDATION

That Council receive this report for information.

DOCUMENTATION

1. Chair, Light Rail Pilot Project Steering Committee report dated 8 June 98 is immediately attached.
2. KPMG/IBI Group report entitled: "RMOC Light Rail Pilot Project - Summary of Status and Issues: June 1998" immediately follows the staff report.

REGIONAL MUNICIPALITY OF OTTAWA CARLETON
 MUNICIPALITÉ RÉGIONALE D'OTTAWA CARLETON

REPORT
RAPPORT

Our File/N/Réf. 48-95-0084

DATE 8 June 1998

TO/DEST. Co-ordinator Transportation Committee

FROM/EXP. Chair, Light Rail Pilot Project Steering Committee

SUBJECT/OBJET **LIGHT RAIL PILOT PROJECT: PROGRESS REPORT NO. 3**

REPORT RECOMMENDATION

That the Transportation Committee and Council receive this report for information.

INTRODUCTION

This is the third in a series of reports on behalf of the Light Rail Pilot Project Steering Committee, and summarizes progress made on the pilot project since Progress Report No. 2, dated 6 May 1998.

Note that Regional staff and consultants will make a presentation on progress to date and current key issues at the next Transportation Committee meeting on 17 June 1998. Committee members will have an opportunity to ask questions at that time.

It should be reiterated that current work will lead to a report to Transportation Committee in August 1998, containing recommendations on the pilot project's feasibility, scope, cost and timing, and on the procurement process that would be followed to implement it.

DISCUSSION

The Light Rail Pilot Project is proceeding according to schedule and budget. Recent progress is summarized in the following sub-sections.

Budget and Consultant Selection

On 13 May 1998, Regional Council approved the 1998 capital budget for the Light Rail Pilot Project, and on 27 May 1998 Council approved the selection of a consortium led by KPMG to provide the project with consulting services.

Project Team Meetings

The Steering Committee and Working Group each held two meetings during the month of May.

The Sounding Board held its second meeting on 19 May 1998, and continues to provide valuable input to the development of the consultation program and the identification of issues to be addressed by technical work. The third Sounding Board meeting will be held on the evening of 23 June 1998 at 7:30 p.m., and agenda items will include a summary of input obtained at the upcoming Community Forum, and a discussion of pending decisions related to the procurement process.

Public Consultation

A Community Forum on Light Rail will be held on the evening of 18 June 1998 at Ottawa-Carleton Centre. The purpose of the forum is to inform interested members of the public about the progress of the study, to present alternatives and their implications, and to obtain feedback about a number of key issues. The forum will include a number of workshops allowing attendees to focus on the issues that concern them most. It is planned that a concise "issues report" will be available to the public at and following the event; this report will contain information on ridership forecasts, right-of-way and vehicle procurement, and environmental assessment issues.

The Community Forum on Light Rail is being extensively promoted through varied means including:

- delivery of a letter and flyer to 41,000 households and businesses adjacent to the subject rail corridors;
- distribution of 50,000 "take-ones" on OC Transpo buses;
- placement of advertisements in daily newspapers and community newspapers throughout the region;
- provision of an article to community newspapers;
- delivery of a letter and flyer to all community associations in the region, as well as to individuals who have expressed prior interest in the project;
- distribution of posters to area municipalities for display at community and recreation centres;
- posting of information on the RMOC website;
- a media release.

A key consideration in promoting the Community Forum on Light Rail is the link to the OC Transpo Comprehensive Review, which is proceeding concurrently and is holding its own Community Forum on OC Transpo on 11 June 1998. To avoid possible confusion and the perception of duplication between the two projects, all event notices are presenting the two events side-by-side.

A subsequent Community Forum on Light Rail (the third, including one in February 1998 organized by the City Centre Coalition, Auto-Free Ottawa and Transport 2000 with assistance from RMOC) is planned for July 28, at which time the recommended project scope and procurement process will be presented for discussion and feedback.

To provide general public notice of the pilot project, the Community Forum and the concurrent environmental assessment process, a Notice of Intent was published in daily newspapers on the weekend of 23 May.

Stakeholder and Industry Consultation

Aside from the participation of many stakeholders on the Sounding Board, direct consultation with stakeholders is helping to ensure satisfactory identification and resolution of issues:

- CP Railway and Canadian National are being consulted to identify the terms of potential use of their respective railway corridors for the pilot project. The project consultants have also been in contact with the three principal suppliers of diesel light rail vehicles, as well as a supplier of refitted heavy rail vehicles, to identify issues and alternatives that must be considered at an early point in the procurement process.
- A meeting with Transport Canada has been held to identify key regulatory issues, such as:
 - the need to ensure that lightweight European-style light rail cars will successfully activate track circuits;
 - the need to develop a plan to minimize opportunities for members of the public to trespass on the right-of-way; and
 - the need to resolve discrepancies between the strength of European-style light rail cars and North America vehicle crash standards.
- A presentation was made to the CUO Planning Committee on 6 May 1998 to introduce the pilot project and answer questions.
- A dialogue with the Macdonald-Cartier Airport Authority has been initiated to identify the potential for and implications of a pilot project linkage to the existing terminal.
- A Notice of Intent was published on MERX (the open bidding notification system) on 2 June, for the attention of potential suppliers and bidders.

CONSULTATION

Several important aspects of ongoing public consultation relevant to the pilot project are discussed in the previous section of the report. A key consultation milestone is the Community Forum on Light Rail to be held on 18 June 1998.

FINANCIAL IMPLICATIONS

None.

CONCLUSIONS

The Light Rail Pilot Project is proceeding according to schedule and budget. A presentation summarizing progress to date and current key issues will be made at the Transportation Committee meeting of 17 June 1998.

*Approved by
Pamela Sweet, MCIP, RPP*

GN/

RMOC Light Rail Pilot Project
Summary of Status and Issues: June 1998

RMOC Light Rail Pilot Project Summary of Status and Issues: June 1998

Mission

The purpose of the proposed light rail system in Ottawa-Carleton is to support the development of a liveable region by attracting new riders to public transit and reducing the need for additional infrastructure such as new or widened roads.

Context

The Regional Official Plan adopted in 1997 includes provision for light rail transit services on sections of existing railway track in the Regional Municipality of Ottawa-Carleton (RMOC). The plan calls for a Pilot Project to be put in place before the year 2000, with service to be expanded after the pilot if warranted.

The light rail transit routes, identified on the map on the following page, have the potential to provide linkage within the Region on both north-south (CP corridor) and east-west (CN corridor) axes. They form an important element in Ottawa-Carleton's plans to reduce the need for new roadways by improving and expanding public transit.

This project is working toward the introduction of a pilot project for diesel light rail transit service to commence in 1999. The pilot project will be implemented through a partnership between the public and private sectors.

Process

The Light Rail Pilot Project (LRPP) will be carried out in three phases as follows:

- **Phase 1 - Development of Service Concept and Partnership Process**

The first phase involves determining how the partnership with the private sector will be established. Should the RMOC select a particular section of track and invite a range of potential operators to bid on providing the required service, or should the competition be open to proposals on both line identified in the Official Plan? Should the RMOC seek a single bid with a "turnkey" solution

covering the range of required goods and services, or should there be a number of competitions for such elements as rolling stock, stations, operations, etc.

To answer these questions the study team is carrying out a variety of consultations with concerned stakeholders, and will carry out its own study of the issues, particularly the ridership potential of the various route options. The consultations include discussions with the public (including the Public Forum June 18 and the follow-up Public Meeting on July 28), discussions with the railways, landowners, rolling stock manufacturers, potential operators, OC Transpo, representatives of the Outaouais and other stakeholders.

At the conclusion of this stage, the study team will report to Council with a draft "Statement of Work", outlining the service concept and the nature of the relationship with the private sector proposed and with a Cost:Benefit analysis, reporting the best information available at that time concerning the cost of carrying out the Pilot Project and likely benefits to be accrued. These reports are to be submitted by July 31, 1998.

- **Phase 2 - Creation of Partnership**

The second phase involves carrying out the partnership process approved by Council. This will likely involve calling for bids or proposals, analyzing the responses received, and selecting the preferred partners. It is anticipated this process will be completed by December 31, 1998 with recommendations being brought to Council for approval.

- **Phase 3 - Negotiation of Agreements**

With Council's approval, implementation will begin. This will involve negotiating final contracts, and proceeding to secure the vehicles, build the stations, and carry out other works required to launch the project. Monitoring will be key in any Pilot Project to ensure as much as possible is learned in the process to assist in designing permanent light rail services. Current targets involve executing contracts in March, 1999 so that construction can occur in the summer of 1999 and service can commence by December 1999.

- **Implementation**

Activities are currently on schedule for meeting these milestone dates, although as noted below, there is some concern about the availability of light rail vehicles within the timeframe scheduled.

Environmental Assessment

The LRPP will meet the requirements of the Federal and the Provincial Environmental Acts, which call for examination, documentation and mitigation of effects on both the social and natural environments. A draft Terms of Reference will be prepared for public comment and approval by the Ontario Minister of the Environment and Energy and the Canadian Environmental Assessment Agency.

Environmental issues could include:

- increased rail traffic at grade crossings with both safety and traffic implications;
- increased rail vehicle traffic with some increase in noise and emissions;
- the impact of traffic (pedestrians, bikes, buses and autos) to and from the stations;
- effects of stations and station accesses on green space;
- increased rail traffic with possible implications for the safety of trespassers.

An Environmental Assessment Report outlining the process, findings, and recommended mitigation measures will be submitted for public review and for agency approval.

What is Light Rail?

The term, light rail transit (LRT) generally refers to systems that use self-propelled rail vehicles, typically with overhead power distribution and double track configurations. Service is provided by single cars or by trains of up to four cars. Provided that LRT vehicles are separated from other traffic (except at grade crossings), high quality service, sufficient to compete with the private automobile can be provided.

New diesel light rail vehicles have recently entered the market and provide a possible technology for introduction in Ottawa-Carleton without the high cost of electrification. The use of existing rail rights-of-way provides an opportunity to introduce LRT at low relative cost. However, these rights-of-way are, at present, equipped with single tracks only, limiting the level of service that can be provided without additional investment. There are some former sidings that could be reinstated at reasonable cost.

Integration with Base Services

The OC Transpo bus system operates on a network of routes that are focused on the Transitway system and major transit centres located throughout the Region. OC Transpo has recently instituted new service design guidelines for its services, to reflect the changing nature of travel and role of transit in the Region. Route changes associated with the base network are being phased in over several years to strengthen the grid network, with more consistency in the headways, and to have more direct and straight line routing of services.

Light rail services in either the CPR or CNR corridors could perform an important role as part of OC Transpo's Base Network of routes. They could provide important north-south (CPR line) or east-west (CNR line) services in areas where there are gaps in the current base network. Combined with the Transitway, the rapid transit network could be expanded to provide broad overall coverage throughout the Region. Cross-town and local bus routes would support the base network and LRT system to ensure convenient transfer at light rail stations.

The LRT system is intended to serve as part of an integrated public transit system, and the standard OC Transpo fare policy is likely to apply, with no premium fare to use the LRT and free transfers with connecting bus routes. A proof-of-payment system would probably be instituted to allow boarding and alighting from all doors as with articulated buses operating on the Transitway.

Vehicle Technology

Several diesel rail vehicles have been identified as potential technologies for the LRPP. These include:

- the RegioSprinter manufactured by Siemens;
- the Talent manufactured by Bombardier;
- the GTW manufactured by ADtranz;
- refurbished Budd rail diesel cars, rebuilt by GEC-Alsthom in their plant in Montreal.

The first three vehicles are modern low floor vehicles manufactured in Europe. The low floor design provides easy boarding and unloading and complete accessibility for the elderly and handicapped. The main problem is that these vehicles are designed to meet European standards. They do not meet North American standards, particularly for longitudinal strength, and to date have not been used in a permanent system in North

America. In the recent diesel light rail demonstration project operated in Calgary, an acceptable solution for this was to separate the use of the rail line between freight trains and diesel rail cars by time of day. In other words, freight trains were not allowed on the line during the hours of LRT service.

The Budd cars were manufactured to a North American standard. Dallas has recently used the approach of refurbishing these rail diesel cars for a new commuter service. The main drawback with this approach is that these are high floor vehicles. To provide complete accessibility requires either high platforms in the stations (which in turn causes problems for the design of stations so that they do not inhibit the passage of freight trains) or the use of lifts with consequent extended station stops. Even without the problem of accessibility, these trains, unless there are high platforms, require longer time for loading and unloading of passengers than do low floor vehicles.

Preliminary indications suggest that the Budd cars could be delivered within the timeframe envisioned, but the other models have from eighteen to twenty-four months delivery lead times for new orders. There may be options to negotiate earlier delivery.

Safety

Discussions are underway with Transport Canada. To date, the main federal safety issues that have been mentioned are:

- If European light weight equipment is used, to take some special measures where LRT lines cross or share lines with VIA to reduce the possibility of collisions.
- If light weight equipment is to be used, to demonstrate that the vehicles will operate the signals and grade crossing protection.
- Where rights-of-way are lightly traveled by trains today, to develop a trespasser mitigation plan.

Ridership Forecasts

Estimating future LRT ridership is complicated by the fact that LRT represents a new mode to Ottawa-Carleton, which will have different operating and service characteristics than existing bus services. Available travel data and transportation forecasting models cannot be used directly. Reflecting the uncertainty, three independent methods have been used to estimate potential LRT ridership:

- Direct Demand Model – a technique often applied in forecasting commuter rail ridership;
- TRANS Model – the use of the regional transportation model used by RMOC;
- Judgmental Model – use of analogies and planning judgement to estimate market shares for various trip markets.

Each method has strengths and weaknesses, but combined provide information that will determine the likely range of LRT demand.

CPR Alignment Alternatives

In order to test the potential ridership the light rail services might attract, it was necessary to make certain assumptions about the type of service that might be provided. There are two main CPR alignment alternatives that were tested:

- **Alternative CP-1: West Transitway to Billings Bridge.** The alignment for this alternative extends from a possible new Bayview Station on the West Transitway south on the existing CPR track to Carling Avenue, Carleton University and Confederation Heights. The alignment would then branch off on an existing connecting track onto a CN track to Billings Bridge Station where the connection would be made with the Southeast Transitway. Major passenger interchange connections with the Transitway would be provided at both Bayview and Billings Bridge Stations. The operational feasibility of this line has not been established, given potential conflicts with trains on the CN track to Billings Bridge (the main line for VIA Rail traffic to Toronto). Six stations are assumed for the purpose of the ridership analysis:
 - Bayview;
 - Gladstone;
 - Carling;
 - Carleton University;
 - Confederation Heights;
 - Billings Bridge.
- **Alternative CP-2: West Transitway to Greenboro/South Keys.** This alignment is similar to Alternative CP-1 above, with service on the CPR track from Bayview Station to Confederation Heights. However, the alignment would continue south on the CPR track, serving Walkley, and Greenboro and/or South Keys instead of branching east to Billings Bridge Station. Major passenger interchange points would be located at Bayview Station and Greenboro/South Keys Station. Seven stations have been

assumed for the analysis, with Billings Bridge deleted from the above list and Walkley and South Keys or Greenboro added.

For these alternatives a 15-minute frequency was assumed.

CNR Alignment Alternatives

Three CNR alignment alternatives have been examined:

- **Alternative CN-1: Hurdman/Train Station to Southeast Transitway.** This east corridor alternative provides a circumferential connection between the East Transitway and Southeast Transitway, serving the intermediate industrial areas. From the Hurdman/Train Station, the alignment would follow an industrial track along Industrial and Lancaster to the Hawthorne Wye, where it would proceed westward through the former Walkley Yard to a station just north of the Greenboro Transitway Station. Nine stops were assumed for the analysis, providing an average stop spacing of approximately 1.1 kilometres, as follows:
 - Train or Hurdman Transitway Station;
 - Industrial Avenue Employment Area (3 stops);
 - Sheffield Lancaster Industrial Area (2 stops);
 - South Walkley Industrial Area (2 stops);
 - Southeast Transitway.

- **Alternative CN-2: Southeast Transitway to Kanata.** This west corridor alternative extends from the Southeast Transitway near Greensboro Station and westerly through the Renfrew Junction on the CNR Beachburg subdivision. The alignment switches to the BASF line, owned by RMOC to a terminus at March Road in Kanata. Because of the long length of this line and the consequent need to pass trains in the opposite direction on a single track line, a 30-minute frequency was assumed (and for CN-3). Ten stops were assumed for the analysis providing average stop spacing of 3.1 kilometres.
 - Southeast Transitway;
 - McCarthy Road;
 - Colonnade Business Park;
 - Merivale;
 - Woodroffe;
 - Greenbank;
 - Leslie Park;
 - Bells Corners;
 - The Queensway;
 - Kanata North Business Park.

- **Alternative CN-3: Hurdman/Train Station to Kanata.** This east corridor alternative provides a circumferential connection between the East Transitway to Kanata. It would be the combinations of CN-1 and CN-2.

Service Levels

The following service level assumptions were assumed for estimating weekday ridership (weekend ridership has not been assessed.) They are consistent with OC Transpo service guidelines for base route transit services:

- Hours of Operation – 6:00 a.m. to midnight;
- Headway – a maximum of 30 minutes between trains.

SUMMARY OF OPERATIONAL PARAMETERS

Alternative	Route Length (km)	No. of Stations	Avg. Speed (km/h)	Travel Time (min)
CPR Line Alternatives				
CP-1: Bayview to Billings Bridge	6	6	40	9
CP-2: Bayview to South Keys	8	7	40	12
CNR Line Alternatives				
CN-1: Hurdman/Train to SE Transitway	11	9	40	17
CN-2: SE Transitway to Kanata	22	10	50	27
CN-3: Hurdman/Train to Kanata	33	18	45	44

Ridership

The estimated ridership for each alternative and the vehicle requirements are summarized below.

SUMMARY OF WEEKDAY RIDERSHIP ESTIMATES

Alternative	Headway	No of Trains in Service	Estimated Peak Point Ridership (per direction per hour)	Daily Ridership
CPR Line Alternatives				
CP-1: Bayview to Billings Bridge	15 min	2	600 - 700	5,500 - 6,100
CP-2: Bayview to South Keys	15 min	2	700 - 850	6,300 - 7,700
CNR Line Alternatives				
CN-1: Hurdman/Train to SE Transitway	15 min	3	100 - 150	1,700 - 2,000
CN-2: SE Transitway to Kanata	30 min	2	200 - 250	1,800 - 2,100
CN-3: Hurdman/Train to Kanata	30 min	3	200 - 250	3,200 - 3,500

Weekend ridership has not been estimated.

Ridership forecasts are also being prepared for extensions of the CP corridor to:

- Ottawa Macdonald-Cartier International Airport;
- downtown Hull; and
- downtown Ottawa.

AGENDA

COMMUNITY FORUM ON LIGHT RAIL 18 JUNE 1998 OTTAWA-CARLETON CENTRE

6:00 p.m. Exhibits
Rotunda

7:00 p.m. Opening session
Haydon Hall

- Welcome
- Project background
- Summary of status and issues

7:45 p.m. Workshops
Col. By Room 1. CP corridor: station locations, surrounding areas, crossings
Rooms A & B 2. CN corridor: station locations, surrounding areas, crossings
Haydon Hall 3. System features
Rooms C & D 4. Measuring success

8:45 p.m. Closing session
Haydon Hall

- Workshop results
- Where do we go from here?
- Questions and discussion

10:00 p.m. End

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 - Bells Corners;
 - The Queensway;
 - Kanata North Business Park.

- **Alternative CN-3: Hurdman/Train Station to Kanata.** This east corridor alternative provides a circumferential connection between the East Transitway to Kanata. It would be the combinations of CN-1 and CN-2.

Service Levels

The following service level assumptions were assumed for estimating weekday ridership (weekend ridership has not been assessed.) They are consistent with OC Transpo service guidelines for base route transit services:

- Hours of Operation – 6:00 a.m. to midnight;
- Headway – a maximum of 30 minutes between trains.

SUMMARY OF OPERATIONAL PARAMETERS

Alternative	Route Length (km)	No. of Stations	Avg. Speed (km/h)	Travel Time (min)
CPR Line Alternatives				
CP-1: Bayview to Billings Bridge	6	6	40	9
CP-2: Bayview to South Keys	8	7	40	12
CNR Line Alternatives				
CN-1: Hurdman/Train to SE Transitway	11	9	40	17
CN-2: SE Transitway to Kanata	22	10	50	27
CN-3: Hurdman/Train to Kanata	33	18	45	44

Ridership

The estimated ridership for each alternative and the vehicle requirements are summarized below.

SUMMARY OF WEEKDAY RIDERSHIP ESTIMATES

Alternative	Headway	No of Trains in Service	Estimated Peak Point Ridership (per direction per hour)	Daily Ridership
CPR Line Alternatives				
CP-1: Bayview to Billings Bridge	15 min	2	600 - 700	5,500 - 6,100
CP-2: Bayview to South Keys	15 min	2	700 - 850	6,300 - 7,700
CNR Line Alternatives				
CN-1: Hurdman/Train to SE Transitway	15 min	3	100 - 150	1,700 - 2,000
CN-2: SE Transitway to Kanata	30 min	2	200 - 250	1,800 - 2,100
CN-3: Hurdman/Train to Kanata	30 min	3	200 - 250	3,200 - 3,500

Weekend ridership has not been estimated.

Ridership forecasts are also being prepared for extensions of the CP corridor to:

- Ottawa Macdonald-Cartier International Airport;
- downtown Hull; and
- downtown Ottawa.

AGENDA

COMMUNITY FORUM ON LIGHT RAIL 18 JUNE 1998 OTTAWA-CARLETON CENTRE

6:00 p.m. Exhibits
Rotunda

7:00 p.m. Opening session
Haydon Hall

- Welcome
- Project background
- Summary of status and issues

7:45 p.m. Workshops

Col. By Room 1. CP corridor: station locations, surrounding areas, crossings
Rooms A & B 2. CN corridor: station locations, surrounding areas, crossings
Haydon Hall 3. System features
Rooms C & D 4. Measuring success

8:45 p.m. Closing session
Haydon Hall

- Workshop results
- Where do we go from here?
- Questions and discussion

10:00 p.m. End