KPMG

QUÉBEC/ONTARIO HIGH SPEED RAIL PROJECT

REVIEW OF INSTITUTIONAL OPTIONS

AND

LEGISLATIVE AND LABOUR ISSUES

KPMG

Final Project Report

QUÉBEC/ONTARIO HIGH SPEED RAIL PROJECT

REVIEW OF INSTITUTIONAL OPTIONS

AND

LEGISLATIVE AND LABOUR ISSUES

Prepared for

Steering Committee
Québec–Ontario High-Speed Rail Project

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Contents

Contents *(Cont'd)*

Contents *(Cont'd)*

Executive Summary

The subject study is one of ten component studies which form integral parts of the Québec–Ontario High-Speed Rail project.

A. Study objectives

In its simplest terms, the purpose of this component study is to examine existing railway legislation and labour regimes in juxtaposition with alternative institutional options for HSR, and asks the question *"what will it take to implement HSR successfully, and how can this best be accomplished?"* More specifically, the objectives for this study are:

- *to identify, review and evaluate potential institutional options to develop, implement and operate the HSR, taking into account the legislative and labour issues, and potential financing constraints, and*
- *to review and define issues related to federal and provincial railway legislative regimes, and labour practices in relation to the development, implementation and operation of HSR.*

B. Approach and methodology

This study involved research, consultations with potential stakeholders and analysis of fact-finding results, all conducted by a project team knowledgeable in the railway business, including specialists in railway labour and law.

The first major task was development of a wide range of institutional options for further consideration and evaluation. This was based upon research into HSR institutional arrangements in other countries, consultations with potential stakeholders, and research into requirements for success and risks associated with development and operation of HSR.

Investigation of legislative and legal issues, and labour issues constituted two additional major research tasks. Legal research focused upon regulatory jurisdiction, examination of possible problems associated with existing law, and the possible need for new legislation. Labour research included a full exploration of the existing rail passenger labour regime and its inherent constraints on HSR, consultation with railway labour relations officers and rail union officials, all contributing to an assessment of the manner

in which rail labour regimes are likely to evolve, and the extent of any residual problems for HSR.

The ultimate analysis and refinement of the institutional options incorporated results of all of the above work, as well as information on how the HSR system might be financed. A full range of generic institutional options was assessed against evaluation criteria, resulting in a narrowing of the range of practical options. Subsequently, the results of the financial analysis developed by the financial consultants were introduced. These results define the few specific options which can for practical purposes, be considered for the Québec/Ontario HSR project. The options were then elaborated to explain the roles of major participants, and the manner in which the institutional arrangements might be made operational.

C. HSR institutional arrangements in other countries

To provide context for the present study, the manner in which HSR was introduced in other countries was investigated, together with the institutional arrangements associated with these developments.

1. Japan

Japan was the first country to introduce HSR service. The Japanese Shinkansen was developed in response to the high volume of travel between Tokyo and Osaka which was causing transportation capacity problems as far back as 1950. The Tokyo–Osaka Shinkansen was developed and built by Japan National Railways (JNR) and its Railway Technical Institute. The project was funded through government loans and low interest World Bank loans, as well as by JNR debt instruments. JNR has carried on developing other Shinkansen services, notably the Sanyo, Tohoku, and Joetsu Lines. Additional lines are under construction or in the planning stage.

Japan's accomplishments in HSR are interesting and impressive. However, the experience in Japan is of limited relevance to Canada in view of the vastly difference social, demographic, economic and political factors at play.

2. Europe

European countries which have introduced HSR have evaluated and implemented the service in the context of national transportation systems. In all cases the European HSR systems are owned and operated by state-owned railway systems which receive heavy financial support from the public.

France—France maintains an extensive system of well patronized HSR services, and is expanding its HSR network. These services are owned and operated by the Société nationale des chemins de fer (SNCF)—the French

national railway, which is an integral part of the Government of the Republic of France. SNCF's HSR services are known as Trains à Grande Vitesse (TGV).

Germany—Germany's HSR system, known as the Intercity Express (ICE) is owned and operated by Deutshe Bundesbahn (DB)—the German Federal Railway. DB developed and implemented its ICE technology over a period of years, collaborating with the Federal Ministry of Research and Technology and a consortium of German industrial firms.

United Kingdom—British Rail (BR) operates 200 kph HSR services on several routes. These services operate on existing rail rights-of-way which are shared with freight. The British government is now seeking to privatize BR, at least in part. However, the institutional context for the planning, development, financing and operation of BR's existing HSR service was that of a Crown corporation wholly owned and extensively subsidized by the British government.

Sweden—The railway in Sweden is structured in a unique fashion. The Swedish state owns the right-of-way and rail fixed plant. The Swedish National Railway Company (SJ)—a Crown corporation—operates freight and passenger services, including a HSR service between Stockholm and Gothenburg. In terms of institutional arrangements, the state absorbs costs of improving track, signaling systems, crossings, and electrification while SJ is responsible for all operations and maintenance costs. SJ also pays a user fee to the state for track use based upon equivalent charges levied on commercial highway users.

Italy—The railway in Italy—Forrovie Dello Stato (FS) is state-owned and closely linked to the requirements and policies of the Italian government. FS operates a HSR service between Rome and Milan, a heavily travelled corridor. The Italian government controls fares on this service to be a maximum of 60% of comparable air fares, and subsidizes the service's operating deficit (said to be approximately 70% of costs).

European HSR systems exhibit institutional and political characteristics which feature close cooperation between:

i) national governments, which establish overall transportation strategy and priorities, and establish the role of HSR in a multimodal context;

ii) the national railway organizations, which own and operate the HSR services and which take the lead in developing and implementing the HSR systems; and

iii) major industrial concerns in the countries, which partner with the governments and national railways to design and build the HSR rolling stock,

communications and control, electrification, and other elements of rail fixed plant.

While closer to the Canadian context than Japan, the European HSR context is nevertheless markedly different from the transportation, political and economic situation prevailing in Canada.

3. United States

The U.S. context for HSR is much closer to Canada's than Europe's or Japan's. However, to date no HSR systems have been implemented in the U.S. (with the exception of a moderate speed service operated by Amtrak in the northeast corridor).

In contradistinction to the situation in Japan or Europe, HSR projects in the U.S. have not been conceived, evaluated, and developed within a national, multimodal, transportation framework. Instead, individual projects have been pursued within the more local context of particular locations or states. The primary HSR institutions which have been established in the U.S. to date are commissions or authorities created and empowered by legislation to study the feasibility of HSR developments and to award and manage a franchise to finance, construct and operate HSR systems. To date, all existing HSR institutions have specified private sector financing arrangements in which the franchisee must finance the HSR initiative, with possibly some local support in respect of stations.

The fact that the U.S. does not, at present, have legal or institutional mechanisms to pursue HSR developments in the context of integrated, multimodal transportation policy clearly impedes the development of HSR in that country. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) goes some distance toward mitigating this problem, but falls far short of comprehensive support for HSR.

The reality of HSR financing requirements has changed the outlook for HSR projects in the U.S. Original plans calling for comprehensive private sector financing have been modified or abandoned. No current project expects to come to fruition without some financial contribution from the public sector at the federal, state or municipal level, or some combination thereof. In some cases, it has become apparent that such public support may have to be substantial.

D. Legislative issues

1. Federal vs. provincial jurisdiction

Given the interprovincial character of the HSR system, it is virtually certain a HSR undertaking would be subject to federal legislation and regulatory jurisdiction. This would occur even if separate companies were to build and operate the system in

Ontario and Québec, or if separate ownership structures were to be adopted for the fixed plant and operating entity. It is possible, however, that some independent suppliers (e.g., caterers) could be subject to provincial legislation.

2. Federal legislation

a) Railway Act

The construction and operation of a HSR system in the corridor would be extensively governed by provisions of the Railway Act.

i) Establishment

A firm wishing to construct or operate a federal railway must first be established pursuant to a "Special Act." This may require application to the National Transportation Agency for a Certificate of Public Convenience and Necessity (PC&N).

ii) Corporate governance and financial matters

The above matters are governed by provisions of the Railway Act in a manner generally not different from general business corporation statutes. However, Section 79 restricts the extent of security which railways may give lenders by way of mortgage instruments. It appears, however, that this problem can be mitigated.

iii) Construction and acquisition of land

A new railway cannot commence construction until the Agency has approved a "general location and construction plan." The Agency may review this plan in parallel with a PC&N application.

iv) Passenger ticket pricing controls

Any person may complain that a rail passenger tariff is prejudicial to the public interest under Section 290. However, since the overall thrust is to permit disallowance of tariffs that harm consumer choice, this provision seems unlikely to have much affect on a corridor HSR service.

It is concluded that the Railway Act does not create any material barrier to the construction or operation of a HSR business.

b) Canadian Environmental Assessment Act

This legislation, once proclaimed in force, would likely apply to a HSR project, which would then be subject to an environmental assessment. The Act could permit such an assessment to be folded into a PC&N application

process before the National Transportation Agency. Special provisions apply to lands affected by native interests, and a separate environmental assessment may then be required.

c) Expropriation Act

This Act provides an alternative basis for forced acquisition and compensation of private property for railway construction. It provides for direct ministerial control over defining what should be expropriated. Time frames are potentially tighter under this Act than under the Railway Act.

d) National Transportation Act, 1987

Section 112 requires compensatory rates to be charged for railway freight. This would apply to any freight business (e.g., courier service) which the HSR business might undertake.

e) Other federal statutes

Other legislation which may apply to a HSR business includes:

- Railway Safety Act
- Railway Relocation and Grade Crossing Act
- CN Special Act
- Financial Administration Act.

3. Provincial and municipal legislation

As previously noted, it is very likely that the entire HSR business will be treated as a federal undertaking and subject to federal legislation. However, an examination of relevant provincial railway legislation was conducted, and revealed that there are no substantive impediments, other than administrative duplication and possible regulatory inconsistencies presented by these regimes in relation to the regulatory approval of the business.

It is generally held that provincial or municipal land use jurisdiction do not apply to federal undertakings. However, provincial railways may be subject to provincial and municipal land use controls. These controls may establish substantial barriers to the construction and operation of a provincial HSR system on new rights-of-way particularly in urban and developed agricultural areas.

4. Issues and concerns

A number of issues and concerns emerged from the review of legislation. The major conclusions of this examination are summarized briefly below.

- The *Railway Act* currently provides an adequate regime.
- The *Railway Act* schemes for approval of new railways and necessary expropriations have advantages over other alternatives despite the possibility of lengthy hearings.
- The *Railway Act* provides an adequate framework for dealing with level crossing, and farm crossing disputes.
- Current federal and provincial legislation is adequate. New specific regulatory standards will likely have to be developed.
- It is very doubtful that a type of profit cap could be introduced through the regulation of ticket prices under the current legislative framework.
- Existing statutory provisions will not provide a significant disincentive for the carriage of freight traffic by HSR.
- Careful attention would have to be paid to any recognized Indian lands and to potential aboriginal land claims in the proposed rail corridor. The federal expropriation power may be inoperative for such lands.
- Several measures are available under existing legislation for all ownership options with the exception of operation by an existing private sector railway. However, the need for such special oversight is questionable.
- Special HSR legislation is not necessary, but may be desirable on policy grounds.
- The current lack of intermodal policy and government support coordination needs to be addressed before serious efforts are made to attract significant private investment capital to the HSR project.

E. Labour issues

1. Legislative framework

Federal labour legislation (i.e., the Canada Labour Code), will apply in practically all instances to the construction and operation of HSR in the corridor.

Aside from governing the collective bargaining process, the Code also deals with successor rights and technological change in the work place. Avoidance of successor rights under federal legislation would require the creation of an entirely new HSR enterprise totally separate from existing federally regulated railways. The sale of even a portion of one of the federally regulated railway's businesses to the HSR enterprise may invoke the successor rights provisions of the Code. In any event, the unions can be expected to try to protect their existing membership and influence, irrespective of how the HSR enterprise is established.

2. Union representation

a) Present union representation

There are now currently ten unions which represent employees of CN, CP and VIA. These unions are usually considered in four sub-groups, as follows:

i) Running trade unions (engineers and conductors—two unions although under one Council).

ii) Non-operating unions (various plant maintenance, traffic control and other employees—five unions).

iii) Shop craft unions (rail equipment maintenance employees—now under one union).

iv) Police associations (two unions).

b) Recent changes in union representation

After a series of legal delays, the Canada Labour Relations Board (C.L.R.B.) in June of 1994 designated the National Automobile, Aerospace & Agricultural Implement Workers Union of Canada (CAW–Canada) as the sole representative of the shop craft unions. With respect to the running trade unions, the Canadian Council of Railway Operating Unions (C.C.R.O.U.) was certified by the C.L.R.B. in August of 1993 to represent the Brotherhood of Locomotive Engineers (B.L.E.) and the United Transportation Union (U.T.U.) for labour negotiation purposes.

Rationalization of the union representation within the Canadian railway industry is now taking place. The consolidation of shop craft bargaining units is of particular importance. It should lead to greater flexibility in work assignments and improve productivity in equipment maintenance. Thus, union representation should not be a barrier to HSR development by the time HSR could be introduced.

3. Constraints in existing railway collective agreements

There are a number of matters in the existing collective agreements which would be impediments to the operation of a HSR system. These are:

- The pay system and crew size of the running trades.
- Work flexibility in the shops.
- The high wage levels of Canadian rail workers.

Most, if not all of the constraints identified above are expected to be eliminated by the turn of the century through the evolutionary process of negotiation of collective agreements. Positive change is already underway with respect to union representation and running trade crew size.

The other constraints will come under extreme pressure as Canadian railways continue efforts to reduce costs in order to survive in a highly competitive market. Railway management representatives at VIA, CN and CP all indicate that the mileage based system of pay is on the negotiating table and should be eliminated within the next couple of years. Wage levels will also come under pressure in future collective agreement negotiations.

4. Labour practices in other countries

Labour practices in railway passenger service were studied for the U.S. and France. The key finding from this work was that the U.S. and France use an hourly base system of pay for passenger running trade employees vs. the mileage base system in use in Canada. With respect to crew size, there is less of a divergence. VIA is fast approaching the use of one locomotive engineer in the cab and actually has less stringent requirements than Amtrak in the deployment of conductors.

5. Conclusion

The impediments embodied in existing labour agreements to the proposed work rules of the HSR system should be removed by the time HSR could be introduced in the corridor. If, by chance, some remnants of the impediments remain, there is a strong possibility that new arrangements can be negotiated with labour unions, particularly if jobs are saved or created. Expedients to avoid successor rights to overcome labour constraints should therefore be unnecessary.

F. HSR institutional arrangements

A number of factors and determinants are relevant in the formulation and evaluation of HSR institutional options, as outlined below.

1. Financing HSR

The manner in which the HSR system would be financed is a major determinant in the institutional options which can be considered. The corridor HSR system clearly represents an undertaking of megaproject dimensions. Capital outlays for a 200+ km/hr system are estimated in the order of $9.5 billion (1993 dollars); for a 300+ km/hr system in the order of $10.5 billion (1993 dollars) for the total Québec–Windsor corridor.

It was recognized from the outset that the project would not be viable without significant financial support from the public sector. This is acknowledged in the study's terms of reference.

a) General financing considerations

i) Assets amenable to private sector financing

Components of the project most amenable to private sector financing are the manufactured items and equipment, including:

- operating plant (locomotives and car equipment);
- electrical supply, catenary, etc.;
- control system and other electronics;
- track structure (or some components thereof).

The civil engineering/construction work is less attractive to private sector financing.

ii) Financing sequence

The following general sequence is foreseen for the project financing.

Project initiation (planning, approvals, etc.)—would be funded by governments, along with some private sector equity financing.

Construction—loans to cover construction would be financed by commercial banks, but may well require government guarantees.

Longer-term financing—once the project reaches successful completion mortgage loans would replace the construction loans. The scale of this financing will probably require an international consortium of financial institutions.

b) Financing scenarios

Four prototypical financing scenarios were developed, intended to span the possible range of outcomes which the project financial analysis may produce.

Scenario 1—100% private sector financing

Scenario 2—75% private sector financing

Scenario 3—50% private sector financing

Scenario 4—public sector owns most, if not all of the fixed plant (private sector financing is in the range of 20%).

The above scenarios are adopted in developing generic institutional options.

2. Major risk factors

The formulation of institutional options requires a clear delineation of the risks associated with the HSR undertaking. The character of these risks varies considerably as between the following four major project phases.

- Planning and approvals phase.
- Land acquisition phase.
- Detailed design, construction, commissioning phase.
- Operation phase.

The major risks are stated briefly below. Each represents a consideration capable of derailing the project.

a) The planning and approvals process becomes fraught with difficulties, requires an inordinate span of time to complete, and/or fails to achieve conclusive results.

b) The land acquisition process proves to be unmanageable or too costly.

c) Arranging private sector financing proves impractical or impossible.

d) Major cost overruns arise from detailed design, in the construction phase, or in equipment manufacturing.

e) Ridership and revenues fall substantially short of plan.

3. Formulation of institutional options

The formulation of institutional options seeks to determine the most appropriate assignment of roles and responsibilities and the associated sharing of risks among the parties, taking into account the manner in which HSR might be financed.

a) Appropriate public and private sector roles

As a starting point, it is clear that some components of the HSR undertaking are better suited to the abilities of the public sector, while others are more suited to the private sector. The appropriate roles are outlined for each major phase.

i) Planning and approvals phase

There is a great deal of public sector involvement in this phase. For example, the necessary integrated multimodal planning, routing, land use planning, National Transportation Agency approvals, and environmental approvals are all processes primarily driven by public sector determinants.

ii) Land acquisition phase

This phase can be envisaged as either a public or private sector undertaking, but in all probability land acquisition will prove to be controversial and problematic. Even if skillfully executed, many land owners can be expected to resist surrendering their properties. In the circumstances, it may prove more expedient for land acquisition to be handled by public sector agencies.

iii) Detailed design, construction, commissioning phase

The components of this phase are largely in the domain of the private sector. Even if the HSR system were a wholly public sector enterprise, much of this activity would normally be contracted to the private sector.

iv) Operation phase

This phase is also readily seen to be in the realm of the private sector, although VIA Rail believes it is best able to handle most components of the HSR operation.

b) Institutional options

A wide range of institutional options was developed, bearing in mind the sharing of risks, financing considerations, and appropriate roles of the public and private sectors. These options are listed and briefly explained below.

i) Wholly private sector entities

This is essentially the concept which has been pursued until recently in the U.S., without any success to date, and corresponds to financing Scenario #1.

a) New private sector corporation

b) CP Rail

ii) Public/private partnerships

These options involve a sharing of risks and responsibilities between the public and private sectors. They are listed below in increasing levels of public sector involvement, with cross-reference to the corresponding financing scenarios.

a) Public sector takes responsibility for planning and approvals (c.f. Financing Scenario #1).

b) Public sector takes responsibility for planning and approvals; land acquisition; and grade separations (c.f. Financing Scenario #2).

c) Public sector takes responsibility for planning and approvals; land acquisition, grade separations, and earthworks and drainage (c.f. Financing Scenario #3).

d) Public sector takes responsibility for land acquisition, infrastructure and civil works and some technology costs which corresponds to the financing option developed by Price Waterhouse and Banque Nationale de Paris (c.f. Financing Scenario #4).[1]

e) Public sector takes responsibility for all fixed plant ["Public Utility" option] (c.f. Financing Scenario #4).

iii) Wholly public sector entities

Included in this category are HSR undertakings wholly funded by government(s), and for which many or all of the risks are sustained by the public sector.

a) New Crown corporations.

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[1]*See "Financial Analysis" report prepared for the High Speed Rail Project by Price Waterhouse.*

- Federal Crown corporation
- Combination of federal and provincial Crown agencies

b) Existing Crown corporations.

- VIA Rail Canada Inc.
- Canadian National
- VIA/CN combination
- Crown corporation resurrection

4. Evaluation of institutional options

a) Evaluation criteria

The evaluation process was simplified by the finding that federal jurisdiction would prevail in all circumstances, and that the impediments posed by existing labour regimes are likely to be eliminated by the year 2000. Accordingly, it was unnecessary to make separate evaluations for corridor segments or routing/technology options.

The following three criteria were therefore applied in evaluating the options.

- Appropriate accommodation and sharing of risks.
- Maximum private sector financing.
- Maximum business effectiveness and efficiency.

b) Evaluation results

The evaluation of generic institutional options showed all of the wholly private sector and wholly public sector options to be unworkable and/or undesirable. The public/private partnership options are all more promising. Of these, only Option ii d) in which the public sector takes responsibility for land acquisition, infrastructure and civil works, and some technology costs, is feasible for the HSR systems under study here. However, this option is rated marginal at best.

c) Views of potential participants/stakeholders

The evaluation results were cross-checked against the views of potential stakeholders as stated in consultations with them. For the most part these

views were in complete harmony with the evaluation. Some of the more prevalent views were:

- All potential participants proposed some form of public/private partnership as a preferred alternative. In most cases, the government role was seen as including planning, approvals, land acquisition, grade separations and earthworks/drainage.

- Generally speaking, there was very little interest shown by most of the potential participants in any significant involvement in financing HSR.

- Consistent with the preference for public/private partnership arrangements, all participants envisaged governments providing a substantial portion of the required financing. Most parties would look to government to provide 50% or more of the required funding.

5. Elaboration of institutional options and implementation considerations

a) Major participant roles

i) Promoters

While a fully declared promoter of the corridor HSR system may not yet have emerged, it is evident that the rail equipment manufacturers, VIA Rail, and governments all have varying degrees of interest which may lead them to act, at least in part, as a HSR promoter.

ii) Owner/franchisee

The owner/franchisee is the party which eventually takes the initiative and responsibility to build and operate the HSR system. The owner would bring together the various parties essential to development of the HSR system, and would be granted authority to build and operate it.

Public private partnerships represent the only practical alternatives. The option developed by Price Waterhouse and Banque Nationale de Paris envisions the creation of two entities as follows:

i) **Public Financing Entity.** The public sector would incorporate a Public Financing Entity, likely a **Crown corporation**, to finance and own the Infrastructure and Civil Works. Once completed, the Public Financing Entity would lease the Infrastructure and Civil Works to the Construction and Operations Company. The

Public Financing Entity would obtain its financing from private sector institutional investors.

ii) **Construction and Operations Company.** A Construction and Operations Company would be incorporated under **joint ownership of the private and public sectors** to manage the full scope of the project during the construction and operating periods. This jointly-owned company would raise financing for the equipment and technology costs, and subsequently would operate the HSR services and lease the Infrastructure and Civil Works from the Public Financing Entity.

b) HSR operations

There are numerous combinations of participants who could, collectively form an effective HSR operations unit. Potential participants include VIA Rail (for most functions); an existing HSR operator—e.g., SNCF (probably for train operations and passenger services); airlines for customer services (reservations, ticketing, sales and marketing); Canadian freight railways (for fixed plant maintenance, train operations and control); and equipment manufacturers (for equipment maintenance). Ultimately the owner/franchisee would select the participants based on the most favourable arrangements which come forward.

c) Role of VIA Rail Canada Inc.

VIA has publicly declared a strong interest in being the operator of any HSR corridor system. In the U.S., Amtrak is also positioning itself to be the operator of HSR systems.

We conclude that there are strong arguments to consider VIA for some, if not all of the operations and maintenance functions. However, it is important that any such arrangement be developed through negotiation, and should involve whatever degree of competition may be practically introduced into such negotiations. In addition, we consider it desirable for VIA to create some separation between their HSR unit and the balance of the VIA establishment. Perhaps the most logical option would be to establish a subsidiary HSR company with a separate, commercially-oriented Board of Directors, which could include representatives of the HSR owner/franchisee.

d) Implementing the institutional arrangements

i) HSR Authority

A purpose built public agency will be required to breathe life into the HSR undertaking, and to guide and control its development. This might be termed the "Central Canada HSR Authority." The Authority would be a creation of

the federal, Ontario and Québec governments. The Public Financing Entity described above could be part of or possibly separate from the Authority.

ii) Policy and legislation

In proceeding with the HSR project, governments would need to resolve a number of policy issues. The development of a coherent intermodal policy would be of first importance.

Special legislation is not absolutely necessary for HSR, but may be desirable on policy grounds. Again, special legislation may be needed to establish the Central Canada HSR Authority—its mandate, powers and modus operandi.

e) Granting the HSR franchise

The franchise must be awarded in a fashion so as to produce the best results for the public's investment, and so as to establish limits on the risks which governments would be called upon to sustain. Serious consideration should be given to a competitive bidding process in awarding the franchise.

However, the specific financing arrangements embodied in the financial analysis of the HSR alternatives preclude the possibility of competition in granting the franchise. Clearly, the terms of such a franchise would have to be negotiated with great skill and care.

I

Introduction

This introductory chapter briefly outlines the study context and objectives, together with the approach and methodology used in conducting the work.

A. Background and context

The subject study is one of ten component studies which form integral parts of the Quebec–Ontario High-Speed Rail Project—a major feasibility investigation being conducted by Transport Canada, the Ministry of Transportation of Ontario, and the Ministère des transports du Québec. The overall objective of this undertaking is *"To recommend whether or not the Governments of Canada, Ontario and Quebec should decide to initiate and/or support the development of high–speed passenger rail services in the Quebec–Windsor corridor."*

This large project is being carried out within a highly disciplined project management structure over a total elapsed time of about thirty-six months. Many of the component studies are significantly interrelated. Appropriate use is being made of the results of many previous studies, notably the work of the Ontario–Quebec Rapid Train Task Force (OQRTTF).

B. Study objectives and scope

In its simplest terms, the purpose of this component study is to examine existing railway legislation and labour regimes in juxtaposition with alternative institutional options for HSR, and asks the question *"what will it take to implement HSR successfully, and how can this best be accomplished?"* More specifically, the objectives for this study are:

- *to identify, review and evaluate potential institutional options to develop, implement and operate the HSR, taking into account the legislative and labour issues, and potential financing constraints, and*
- *to review and define issues related to federal and provincial railway legislative regimes, and labour practices in relation to the development, implementation and operation of HSR.*

The above objectives are to be addressed in the light of different HSR routing and technology options, and the evaluation of institutional options is required for the corridor project as a whole, as well as for its three geographic segments (Montreal–Quebec; Montreal–Ottawa–Toronto; Toronto–Windsor).

C. Approach and methodology

The general approach taken is illustrated in Exhibit I-1 and outlined briefly below. Following project start-up, the first major task was the delineation of institutional options, which included the following work:

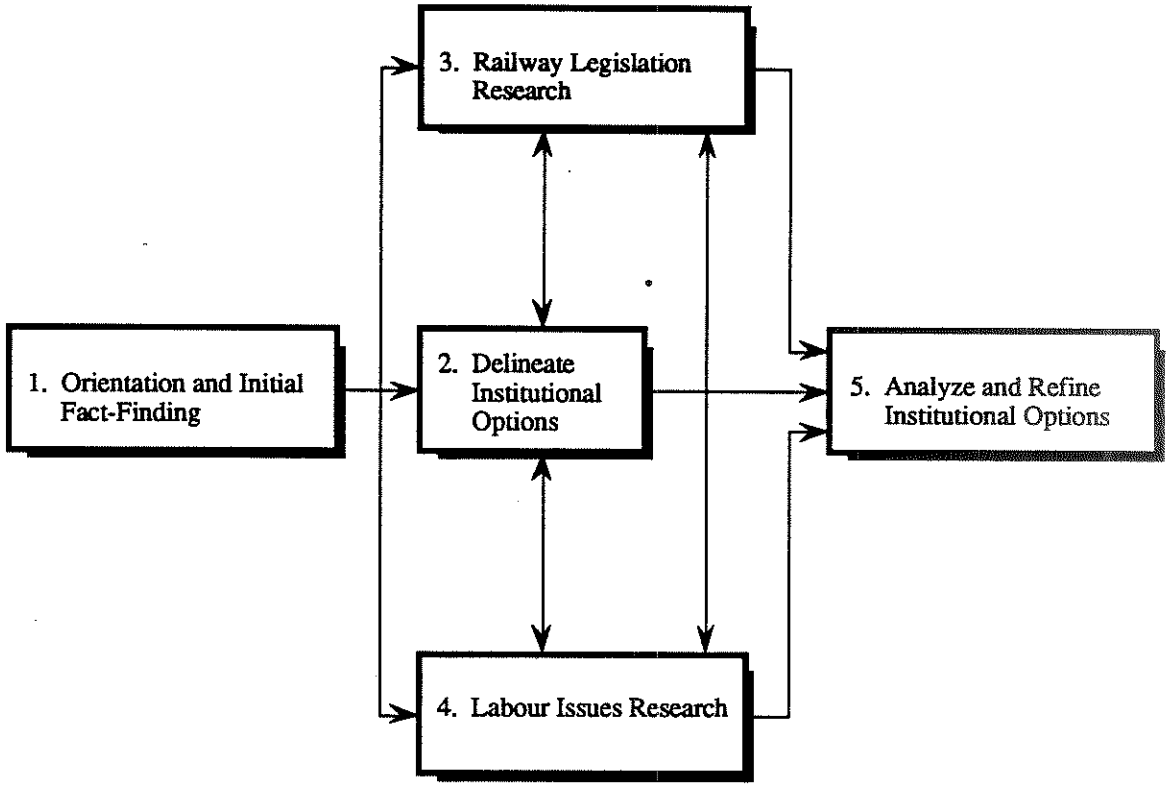
- Research into HSR institutional arrangements in other countries.
- Consultation with potential participants and stakeholders (including VIA, CN, CP, Asea Brown Boveri, Bombardier, financial institutions, and representatives of the federal, Québec and Ontario governments).
- Research into requirements for success, and risk factors associated with development and operation of HSR.
- Derivation of a long list of institutional options for further consideration.

In parallel with development of the institutional options, two additional research tasks were undertaken—one dealing with legal and legislative issues, the other with labour issues.

Research into legal issues began with a determination of whether the corridor HSR system would come within federal or provincial jurisdiction, or both. Subsequently, all major statutes which could affect HSR development and/or operation were explored to assess the extent of any problems or constraints which the HSR initiative might encounter in respect of existing law. Major specific legal issues were then addressed, including possible requirements for modification to existing laws, and/or new legislation to support the corridor HSR project.

Exploration of labour issues began with a full exploration of the existing rail passenger labour regime, and identification of the constraints which this would impose on a HSR system. HSR labour arrangements in other countries were also explored, in particular the U.S. We consulted with labour relations officers of VIA and the freight railways, as well as with railway union officials. This provided a basis for determining the manner in which railway labour regimes are likely to evolve by the year 2000, and the extent of any residual problems which HSR would have to overcome.

Exhibit I-1
Approach and methodology



Finally, the analysis and refinement of institutional options was carried out incorporating the results of all of the above work. In addition, we explored the manner in which the HSR system might be financed in consultation with representatives of the Banque Nationale de Paris, and drawing upon other sources of financing expertise. We also conducted follow-up consultations with a number of key stakeholders. We were then in a position to establish criteria against which to evaluate the institutional options, and to narrow the range of practical options to a short list of alternatives. Finally, we elaborated the institutional options to explain more fully the roles of the major participants, and the manner in which the institutional arrangements might be made operational.

II

HSR Institutional Arrangements In Other Countries[1]

In this chapter we describe briefly the manner in which HSR was introduced in other countries, together with the institutional arrangements associated with these developments.

A. Japan

Japan was the first country to introduce HSR service. The first Shinkansen service was launched in October 1964 on the 515 km Tokaido line serving the Tokyo–Osaka corridor. The Japanese Shinkansen was developed in response to the high volume of travel between Tokyo and Osaka which was causing transportation capacity problems as far back as 1950. It was apparent that an entirely new railway right-of-way with new, high-speed technology would be superior to other transportation solutions (e.g., freeway construction).

The Tokyo–Osaka Shinkansen was developed and built by Japan National Railways (JNR) and its Railway Technical Institute. The project was funded through government loans and low interest World Bank loans, as well as by JNR debt instruments.

JNR has carried on developing other Shinkansen services, viz:

Sanyo Line	(Osaka–Hakata:	554 km)
Tohoku Line	(Ueno–Morioka:	493 km)
Joetsu Line	(Omiya–Niigata:	270 km).

[1] *Information on HSR in other countries has been drawn largely from the following sources:*

a) *Findings Of The Ontario–Quebec Rapid Train Task Force.*

b) *High-Speed Ground Transportation Study for the state of Washington conducted by Gannett Fleming Inc., Parsons Brinkerhoff Quade & Douglas, KPMG Peat Marwick, et al. September 1992.*

c) *Transportation Research Board Special Report 233—"In Pursuit Of Speed—New Options For Intercity Passenger Transport," 1991.*

Additional lines are under construction or in the planning stage. The continuing investment in less economic Shinkansen lines is due more to political or regional development advantage than to transportation planning.

Japan's accomplishments in HSR are interesting and impressive. However, the experience in Japan is of limited relevance to Canada in view of the vastly different social, demographic, economic and political factors at play.

B. Europe

European countries which have introduced HSR have evaluated and implemented the service in the context of national transportation systems. In all cases the European HSR systems are owned and operated by state-owned railway systems which receive heavy financial support[1] from the public.

1. France

France maintains an extensive system of well patronized HSR services, and is expanding its HSR network. These services are owned and operated by the Société nationale des chemins de fer (SNCF)—the French national railway, which is an integral part of the government of the Republic of France. SNCF's HSR services are known as Trains à Grande Vitesse (TGV).

SNCF's first HSR service, the TGV southeast line, connects France's two largest cities—Paris and Lyon. It was opened in stages beginning in 1981. This line is said to have been built without government subsidy. It was financed by loans guaranteed by the government of France which were placed in the capital markets of France and the USA. This HSR service is said to be completely financially self-sufficient, with revenues covering all operating and ownership costs.

In 1990 SNCF launched its second major HSR service—the "TGV Atlantic". The French government contributed 30% of the capital outlay for this line.

GEC–Alsthom, a major French–British railcar manufacturer and industrial concern which builds the TGV train sets has been a major partner in developing France's TGV system. As is the case in many other large industrial concerns in Europe, it has direct ties to the government.

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[1] *On average European railways rely upon state funding for approximately one-half of their overall income. State funding in 1989 ranged from a low of about 17% for the Danish Railway to a high of about 75% for the Luxembourg Railway. SNCF's state funding was about 35% and Deutsche Bundesbahn's funding about 45%.*

Source: Swiss Banking Bulletin, November 1991.

2. Germany

Germany's HSR system, known as the Inter City Express (ICE) is owned and operated by Deutsche Bundesbahn (DB)—the German federal railway. DB developed and implemented its ICE technology over a period of years, collaborating with the Federal Ministry of Research and Technology and a consortium of German industrial firms.

The ICE system was designed and built to meet the transportation requirements of Germany within the context of its unique transportation system, and is therefore considered to provide substantial societal benefits. For this reason the ICE program has been entirely funded by the Germany federal government.

The first ICE service, connecting Hamburg and Munich, was introduced in 1991. DB plans to expand its ICE system, including east–west lines to facilitate reunification of the country.

DB's ICE services are closely integrated with those of Lufthansa—the German national airline. The ICE system was planned and operates to feed and supplement Lufthansa's flights.

3. United Kingdom

British Rail (BR) operates 200 kph HSR services on several routes. These services operate on existing rail rights-of-way which are shared with freight. In most cases tractive power is provided by high-speed diesel locomotives.

Due to substantially increasing patronage, the London Edinburgh line (640 km) was electrified in the mid-1980's. In this case the HSR service operates at speeds up to 225 kph and is said to be profitable.

The British government is now seeking to privatize BR, at least in part. However, the institutional context for the planning, development, financing and operation of BR's existing HSR service was that of a Crown corporation wholly owned and extensively subsidized by the British government.

4. Sweden

The railway in Sweden is structured in a unique fashion. The Swedish state owns the right-of-way and rail fixed plant. The Swedish National Railway Company (SJ)—a Crown corporation—operates freight and passenger services, and is also involved in operating other modes of transport.

SJ introduced HSR service in 1990 between Stockholm and Gothenburg (456 km). This service features Asea Brown Boveri's X–2000 train with a maximum speed of 200 kph. The X–2000 technology features radial steering bogies and a dynamic tilting system on each car, improving speed potential and ride comfort.

In terms of institutional arrangements, the state absorbs costs of improving track, signaling systems, crossings, and electrification while SJ is responsible for all operations and maintenance costs, including maintenance of fixed plant. SJ also pays a user fee to the state for track use based upon the equivalent charges levied on commercial highway users.

5. Italy

The railway in Italy—Ferrovie Dello Stato (FS) is state owned and closely linked to the requirements and policies of the Italian government, through which FS is heavily subsidized.

In 1988 FS introduced a HSR service between Rome and Milan, a heavily travelled corridor. This service features the Italian Pendolino technology—a 250 kph tilt train operating on tracks shared with freight trains. The Italian government controls fares on this service to be a maximum of 60% of comparable air fares, and subsidizes the service's operating deficit (said to be approximately 70% of costs). Clearly, this is an entirely state controlled service.

6. Summary—Europe

European HSR systems exhibit institutional and political characteristics which feature close cooperation between:

i) national governments, which establish overall transportation strategy and priorities, and establish the role of HSR in a multimodal context;

ii) the national railway organizations, which own and operate the HSR services and which take the lead in developing and implementing the HSR systems; and

iii) major industrial concerns in the countries, which partner with the governments and national railways to design and build the HSR rolling stock, communications and control, electrification, and other elements of rail fixed plant.

While closer to the Canadian context than Japan, the European HSR context is nevertheless markedly different from the transportation, political and economic situation prevailing in Canada.

C. United States

The US context for HSR is much closer to Canada's than Europe's or Japan's. However, to date no HSR systems have been implemented in the US (with the exception of a moderate speed rail passenger service operated by Amtrak in the northeast corridor).

HSR projects have been pursued by high-speed ground travel (HSGT) advocates in the US for at least fifteen years. The HSGT lobby is spearheaded in the US by the US High-Speed Rail/Maglev Society based in Pittsburgh.

HSR plans and developments in the US are summarized briefly below. However, we caution that the plans outlined here are not entirely instructive for Canada. In most cases the plans have been found to be unworkable—largely because the financing assumptions have proved unrealistic. Accordingly, many of the plans for HSR systems in the US have been set aside, or are undergoing substantial change.

1. Initial institutional arrangements for HSR in the US

In contradistinction to the situation in Japan or Europe, HSR projects in the US have not been conceived, evaluated, and developed within a national, multimodal transportation framework. Instead, individual projects have been pursued within the more local context of particular locations or state(s) within which the HSR development would take place.

The primary HSR institutions which have been established in the US to date are Commissions or Authorities created and empowered by legislation. Usually autonomous bodies, their legislative mandate empowers them to: i) study the feasibility of HSR developments within their jurisdiction; and ii) select, award and manage a franchise to finance, construct and operate an HSR system within their jurisdiction.

These Authorities or Commissions are usually composed of elected officials from the areas which would be affected by the HSR development, and sometimes include prominent local business representatives. They provide a framework for governance (i.e., policy-making and determining the roles of participants) and oversight (i.e., monitoring compliance with established rules and regulations).

Financing arrangements are reflected in the empowering legislation of the Commissions or authorities. To date, all existing HSR institutions have specified private sector financing arrangements in which the franchisee must finance the HSR initiative, with possibly some local support in respect of stations.

However, **"it should be noted that no proposed HSGT system has been successful in achieving such a privately-financed concept. In every case, the need for greater up-front public investment has been identified."**[1]

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[1] *High-Speed Ground Transportation Study for the State of Washington (September 1992) by Gannett Fleming Inc., Parsons Brinkerhoff Quade & Douglas, KPMG Peat Marwick, et al—page IX-9.*

2. Observations

The US does not, at present, have legal or institutional mechanisms to pursue HSR developments in the context of integrated, multimodal transportation policy. This clearly impedes the development of HSR in the US. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) goes some distance toward mitigating this problem, but falls far short of comprehensive support for HSR.

The Clinton administration has shown some initial signs of support for HSR. A white paper titled "High-Speed Rail—A Transportation Initiative for 21st Century" (December 1992) prepared for the Clinton team outlines proposed means by which the federal government could provide substantial financial and other support for HSR developments in the US. However, this cannot be considered US government policy.

In any event, the reality of HSR financing requirements has changed the outlook for HSR projects in the US. Original plans calling for comprehensive private sector financing have been modified or abandoned. No current project expects to come to fruition without some financial contribution from the public sector at the federal, state or municipal level, or some combination thereof. In some cases, it has become apparent that such public support may have to be substantial.

III

Legislative Issues

This chapter[1] outlines and comments upon all legislation relevant to development of HSR in the corridor. It also identifies a number of specific legislative issues and related constraints and concerns.

A. Constitution Act: Federal vs. Provincial jurisdiction

1. Context

A central issue in examining institutional constraints and the potential need for legislative changes to facilitate the development of a HSR corridor is the exposure of the project to multiple regulatory jurisdictions. Arguably, the need for special legislation and/or special agreements among governments will increase in the event that the HSR project is subject to both federal and provincial jurisdiction, particularly where these jurisdictions would create regulatory overlap.

As a general matter, legislative and regulatory power over transportation is divided between the federal and provincial legislatures. However, section 92.(10) provides some clarification, in essence stating that railways connecting provinces or extending beyond the limits of a province, or which have been declared to be for the general advantage of Canada are subject to exclusive federal legislative jurisdiction. Only purely intraprovincial railways are subject to provincial jurisdiction.

The current HSR options all involve an interprovincial facility engineered and built as a single entity subject to a single set of design criteria. The engineering of the roadbed facility, including if necessary an electrical power source, and the rolling stock will necessarily be highly coordinated. Even if the project developed beyond a single main line into a network having branch services and interswitched multiple intercity routes, these common design criteria would have to be maintained.

[1] *All work on legal and legislative matters was prepared by Mr. John F. Blakney, a member of Fraser & Beatty—Barristers & Solicitors.*

2. Findings

Given this context, we have examined combinations of the following possible institutional structures for the construction of a Windsor–Quebec City high speed rail corridor and subsequent provision of high speed rail services in relation to the balance of federal and provincial regulatory jurisdiction:

i) separate corporations having separate shareholder structures building and operating roadbed in each of the provinces of Ontario and Quebec;

ii) separate corporations having both identical and separate ownership structures for (a) the construction and supply of infrastructure and (b) the ownership and operation of rolling stocks as well as collateral services; and

iii) within the railway transportation services component of the business, various combinations under which inputs may be required from independent third party contractors (often termed outsourcing) including the acquisition of catering, marketing, and ticketing services from third party suppliers in these businesses and the acquisition of rolling stock maintenance services from a third party (possibly the rolling stock manufacturer or its Canadian distributor under an extended warranty program).

In the event that the HSR project were to be declared to be for the general advantage of Canada by special legislation, as has been the case for our national railways, exclusive federal jurisdiction over the business would be certain. However, use of the declamatory power does not appear to be necessary. We have examined the current case law with respect to interprovincial undertakings and the relevant provisions of the *Constitution Act*. We have concluded that under all possible combinations of the above institutional structures, given the need for integrated roadbed and rolling stock engineering, both the railway construction/roadbed operation business and the railway transportation service business (however they relate to each other in terms of investor and debt holder participation) would each be regarded as an undertaking subject to exclusive federal jurisdiction, regardless of the corporate or ownership structure adopted. Specifically, we have addressed the case of extreme outsourcing of inputs for the railway transportation business where there was a clear separation of control under separate corporate entities providing the railway roadbed on the one hand and the railway transportation service on the other.

An example of this scenario would be continued ownership of the rolling stock by the manufacturer which supplies this input to the transportation business under a long-term lease that includes maintenance services and a manufacturer's performance warranty coupled with acquisition of running trade services from a third party independent contractor and the supply of reservation and ticketing services through a third party computer reservation service (such as operated by airlines) rented to travel agents. Notwithstanding that, in this extreme case, the transportation service business would look very much like an air travel tour

operator, freight forwarder, or pool car operator, and would own very few hard assets, this business would still likely be regarded as part of a interprovincial railway undertaking subject to exclusive federal jurisdiction.

The key factor favouring exclusive federal jurisdiction under this scenario remains the design and engineering integrality of the roadbed and transportation service elements of the overall business.

However, there remains a possibility that exclusive federal jurisdiction over matters not relating to the development of the business and supply of the service may not be as extensive under such a scenario as it is under the current organizational structure of Canadian railways. The possibility arises that the supply of inputs may not be entirely subject to federal jurisdiction. This is primarily because the jurisprudence concerning interprovincial undertakings is not extensive and has not yet clearly addressed a service that extensively outsources. Under any set of reasonable circumstances, the ultimate service supplier should still be a federal undertaking. However, it is conceivable that some of the independent input suppliers may not be viewed as integrally related to that undertaking, in which case they would be subject to provincial regulatory jurisdiction. This possible exception may be relevant to labour relations issues but it does not create any complexities in relation to federal approval and regulation of the rail transportation service business *per se*.

Safety and service level regulation would still apply to the operator, and it would be the operator's obligation to ensure they were not violated regardless of the source of inputs to its business. In all likelihood, the operator would be required by its licensing authority, as a condition precedent to obtaining an operating license, to demonstrate that it was capable of enforcing these obligations on third party suppliers through contractual measures.

The same jurisdictional results would occur if the roadbed business were constructed within an existing federal railway, developed, and then spun out from that railway and operated through an entirely separate company. In this case, the roadbed business would be a federal undertaking.

In addition, if the roadbed business were developed and/or operated by a separate corporation or other entity within each province, even if that entity were entirely owned by the provincial government, that business would still, in our view, constitute a federal undertaking and be subject to federal regulatory controls, including licensing requirements under the federal *Railway Act* reviewed in Section 2 below.

3. Discussion

It is well-established that the corporate or ownership structure of a business will not influence a court's determination of whether the business in essence constitutes an interprovincial undertaking.

There have been a number of instances in which federal jurisdiction has been asserted over a local railway line on the ground that the line connected physically with an interprovincial line or with a line which had been declared to be for the general advantage of Canada. The outcome has consistently depended on the degree of operational integration between the connecting railways.

The traditional distinction has been that physical connection, even combined with some cooperatively organized through traffic, will not be sufficient to establish federal jurisdiction over the local line. However, where the local line is operated as the branch of an interprovincial line—as "a part of a continuous system"—then the local line constitutes part of an interprovincial undertaking.

Thus, when Ontario established its GO-Train commuter service, using a short stretch of Canadian National's interprovincial roadbed, it was held that the shared use of even a local part of the interprovincial line made the commuter service "a part of the interprovincial system". (see *The Queen (Ont.) v. Board of Transport Commissioners*, (1968) S.C.R. 118, at 128).

As well, more recent decisions of appellate courts in cases involving the communications industry have broadly applied the concepts of a single system and functional integration with an unequivocally interprovincial undertaking. In 1989, the Supreme Court of Canada concluded that the member telephone companies of Telecom Canada (now Stentor Network Management) were interprovincial undertakings by virtue of their collective planning of interprovincial transmission facilities and the joint use of their individual local networks for both intra-provincial and interprovincial services. The court was unmoved by the fact that all assets of certain members were located entirely within a province and that there was no separate legal entity supplying interprovincial services (*Alberta Government Telephones v. Canada (Canadian Radio-television & Telecommunications Commission)* (1989), 61 D.L.R. (4th) 193 (S.C.C.)).

Most recently, in December 1992, the Quebec Court of Appeal held in a unanimous decision that an independent municipal telephone company in that province constituted an integral part of a federal undertaking merely by virtue of its reliance upon facilities and computer assets of the federal undertakings in the provision of a number of communications services marketed on a national basis by the federal undertaking. (Procureur général du Quebec c. Téléphone Guèvrement (8 December 1992), 200-09-0578-911 (Que. C.A.))

4. Conclusion

For all practical purposes, it would not appear to be necessary to examine potential overlaps and differences between federal and provincial railway laws in addressing the issue of whether there are any material legal impediments to the development and operation of a high speed rail corridor. Federal law is, therefore, the focus of our review of existing regimes.

However, in the remote eventuality that provincial railway laws may apply to some part of the overall HSR corridor project, we have reviewed the relevant railway legislation of the provinces Ontario and Quebec. Based on this review, we have found that, with respect to the establishment and regulation of operations of railways (including the establishment of operating safety standards and other labour force rules aimed particularly at railway employees), there are no significant substantive differences between the federal *Railway Act* and the Ontario and Quebec railway statutes.

Neither provincial regime creates any substantive impediment to the establishment and operation of the HSR business. The only problem that would appear to arise would be the inconvenience and additional cost of regulatory overlap and duplication, and the risks that:

i) different jurisdictions might apply different safety and operating/service standards through conditions of license; and

ii) different environmental safeguards and prior impact assessment requirements might apply.

In the unlikely eventuality that provincial jurisdiction and railway laws extended to a portion of the workforce employed in the overall high speed rail corridor business, it is most likely that the relevant provincial regulatory authorities would adopt by reference safety standards which had been developed for the business by the federal government. A precedent for this result is the recent adoption by the Ontario Municipal Board of the applicable federal railway standards developed by the National Transportation Agency and Transport Canada as a condition of granting the operating authority to the new Goderich & Exeter short line railway.

B. Federal legislation

1. Introduction

Although there are at least 10 federal statutes having some bearing on the construction and/or operation of a HSR business in the Windsor–Quebec corridor, the key instruments are: (1) the *Railway Act* which regulates the establishment and operation of railways under federal jurisdiction, and (2) the *Canada Labour Code* which regulates labour relations, including the definition of bargaining units, the establishment, enforcement and interpretation of collective agreements, and certain public policy matters that may not be adequately addressed in individual collective agreements.

This section examines the *Railway Act* and other selected federal legislation that can establish regulatory constraints on the establishment and operation of the HSR business. Issues arising from the *Canada Labour Code* are reviewed in Chapter IV.

2. Railway Act

The discussion below is most relevant to the establishment of a new railway business on a new or distinctive right of way. Were the HSR to be constructed or operated by an existing federal railway using existing rights of way, new separate regulatory approval under federal railway legislation would probably not be required (e.g., if built within existing CNR and CPR land rights and/or operated by any of CNR, VIA, or CPR).

a) Establishment

A firm wishing to construct or operate a federal railway must first be established pursuant to a "Special Act". A "Special Act" of incorporation can either be an Act of the Parliament of Canada establishing the railway and authorizing its operations, or incorporation by Letters Patent issued by the Minister of Consumer and Corporate Affairs.

Under the Letters Patent option, the firm must first have obtained a certificate of public convenience and necessity, or a certificate of fitness from the National Transportation Agency (NTA).

A certificate of public convenience and necessity ("PC&N") is required for a new railway company establishing a new line, while the certificate of fitness is required for a new or continuing company proposing to operate an existing line. The NTA is obliged to issue a certificate of fitness within 120 days once it is satisfied that the firm, if incorporated, would be adequately insured against claims arising from the operation of the railway line.

Once the NTA receives the PC&N application, it must give such public notice of application as: "... appears to be reasonable in the circumstances". Certain matters to be taken into account by the NTA in considering an application include:

- economic feasibility of the railway;
- financial responsibility of the applicant and methods of financing and the extent to which Canadians will have an opportunity of participating in the financing of the company and in its construction;
- any public interest that may be affected by the granting or refusal of the certificate.

To date, the NTA has examined two PC&N applications and has required very extensive evidence.

The mandatory factors listed above are not exhaustive. The NTA may essentially define on its own what is relevant to the present and future public convenience and necessity. Additional relevant issues may be raised by other parties participating in the licensing process.

The NTA's Rules of Procedure currently contemplate a fairly wide-open public hearing process for such applications involving a low threshold of interest for third party interveners and extensive procedural rights for interveners, including posing interrogatories, calling evidence, cross-examination at an oral public hearing and argument.

It would be open to the NTA to address environmental as well as economic and financial issues and to require a comparative assessment of routing options. The NTA could make its decision to issue a PC&N certificate conditional upon the railway adopting a particular route and certain facility design parameters.

In making its PC&N or fitness certificate decision the NTA would be bound by any relevant policy direction that had been issued by the Governor in Council prior to the Agency's receipt of the particular application in proper form. Such policy directives, to be effective, must be laid before both Houses of Parliament for at least 30 sitting days and must be referred to a committee of each House for review during that period.

Arguably, the requirement that a direction be a "policy direction" precludes the government from issuing a direction that ties the NTA on how to decide a particular case.

In addition to the power to impose conditions, the Agency may review, rescind or vary a PC&N decision in the event of a change in facts or circumstances.

The Governor in Council (Cabinet) may, at any time, upon petition or of its own motion, vary or rescind an Agency PC&N decision.

In the event that separate corporations were to construct the railway lines and operate the service, each corporation would, in our view, be required to obtain a PC&N certificate since each would constitute a "railway" as the term is defined in the *Railway Act*.

In practice, it is very doubtful that the NTA would examine a roadbed construction application separately from the operating firm's application since the economic viability of each business depends upon the other. Rather, the NTA would require one application review proceeding for the entire undertaking regardless of the corporate structure chosen for the HSR business.

The presence of separate roadbed and transportation service corporations would not, however, unnecessarily complicate the NTA's determination of the PC&N issue.

b) Corporate Governance and Financial Matters

The corporate governance and financing of companies established under the *Railway Act* is determined by provisions in that Act and not by general business corporation statutes.

In general, these provisions are not materially different from the provisions that apply to other business corporations.

Under section 79 of the Act, railways are restricted in the extent of the security that they may give lenders by way of mortgage instruments. Such instruments are subject to statutory priorities in favour of any penalties imposed on the company for non-compliance with the Act and to the payment of the "working expenditure" of the railway. Working expenditure is defined in the act to include most non-capital cash expenditures normally incurred in operating a railway.

This statutory security limitation is unusual and may create a disincentive to investment by way of mortgage instruments. This potential problem is however mitigated by the fact that the railway may also issue bonds and debentures which can provide creditors with overall management and liquidation rights in the event of a failure to meet the instrument's conditions. It is probable that a security in the overall business will be more attractive to investors than a security exclusively in hard assets that would be provided by a mortgage instrument.

Thus, while it is a limiting and undesirable anachronism, the section 79 security limitation in context may not prove to be a significant barrier to obtaining adequate investment capital in a new railway business. It is unclear whether the section 79 limitation would have a negative impact on attracting new investment capital into an existing railway business.

It is also likely that, in the event that the HSR business is operated by a new organization, investors will take up a combination of equity and debt under terms of a shareholders agreement with debt enforcement right being established by this agreement rather than exclusively in separate security instruments. This structure is likely to remain until the company is a in position to be publicly traded.

c) Construction/Acquisition of Land/Operation

Section 106 establishes a railway's general power, including the power to enter lands to make surveys, to take lands or other property necessary for the

construction of the railway, and to divert highways and other transportation facilities for construction purposes (subject to a restitution obligation in section 107).

The new railway may not commence construction until the NTA has approved the general location and the construction plan has been deposited with and approved by the NTA (Section 111). The plan must show:

- the right of way with lengths of sections in miles;
- the names of terminal points;
- the station grounds;
- the property lines and owners names;
- the areas and lengths and width of lands proposed to be taken, in figures, stating every change of width, or other accurate description thereof;
- the bearings; and
- all open drains, watercources, highways and railways proposed to be crossed or affected.

The NTA is free to adopt any procedure for reviewing a plan. Conceivably, the plan review and the PC&N application proceeding could be joined instead of being sequential as provided by the Act. The plan review process could involve public hearings and consider both environmental, negotiating procedure, and economic issues similar to current National Energy Board pipeline facility approval proceedings.

In granting its sanction for the plan, or in giving leave to expropriate, the NTA may fix a "use it or lose it" period as well as a mandatory notice period prior to binding arbitration on land owner compensation.

No Crown lands or native reserve lands or statutorily recognized land claims may be taken without the consent of the Governor in Council but a railway does, otherwise, have the capacity to take federal and provincial Crown lands and lands of other federal undertakings, such as other railways.

Sections 160 to 188 provide a comprehensive expropriation code for lands covered in the plan. Any compensation disputes that remain after arbitration are to be settled by the court of the county in which the lands lie.

Sections 200 to 207 provide a structure for the construction of highway crossings and the payment of construction costs pursuant to an application for

construction authority to the NTA. Payment to adjacent and abutting land owners is determined through arbitration. The NTA may apportion such construction costs among the railway, the relevant municipality or other person to who the NTA's order to allow construction is directed.

The railway is required to provide adequate farm crossings and land owners may apply to the NTA for an order directing construction of a suitable crossing consistent with the terms of the *Railway Safety Act*.

d) Passenger Ticket Pricing Controls

Under Section 290 of the Act, any person may complain that a rail passenger tariff rate is "prejudicial to the public interest". If after a hearing the NTA upholds the complaint, it may order a change in the tariffs or make a report to the federal cabinet. In conducting its investigations, the NTA must consider:

1. the effect of the tariff on the financial ability of the railway and of other carriers of passengers to provide passenger services;

2. the effect of the tariff on the variety and quality of passenger services to the public; and

3. whether control by, or the interest of a railway company in, another form of transportation service, control of a railway company by, or the interest of the railway company of any other transportation service may be involved.

This list is not exhaustive. The scheme permits a consideration of a broader range of evidence than might be relevant to an examination of predatory pricing under competition law or non-compensatory (freight) rates under the National Transportation Act, 1987. However, the overall thrust of the provision is to permit disallowance of tariffs that harm consumer choice in passenger transportation services.

It is also conceivable that the provision could be used to disallow unreasonably high charges permitted by a passenger railway's market dominance on the basis that such charges reduce the availability of that service, and passenger services as a whole to the public to a degree that is prejudicial to the public interest.

However, this scheme has, to date, only been activated by complaints of bus transportation service suppliers against low Via Rail charges.

The prevailing view is that the scheme does not permit the NTA to suspend or disallow a tariff until it has completed its investigation and hearing—thus delaying any possible remedy for a substantial period of time.

Section 291 requires passenger tariffs to be filed with the NTA published in accordance with its disclosures before they may be effective. There is no prior price approval requirement.

The balance of the *Railway Act* contains a detailed safety and operating code which is designed for a different rail technology. The Act does not create any material barrier to the construction or operation of a HSR business.

3. The Railway Safety Act

Under this Act, when railway work is proposed a notice must be given and any person "who considers that the safety of the person or the person's property would be prejudiced ..." may file an objection. The time for objections is posted in the notice itself.

Where there are public safety issues the Minister may, under section 40 of the Act, require an inquiry to be made and the time of the inquiry does not include the normal 60 days required for "assessment" or approval.

4. The Railway Relocation and Crossing Act

This Act applies where the proposed new railway line goes through urban areas and when federal funding is sought to pay for studies which are concerned with the public safety and convenience at railway crossings.

Section 3 provides that where the province and municipalities involved have agreed to an "accepted plan" they may together apply to the NTA for an order under sections 7 or 8.

Section 7 deals with an order the Agency might make to have the railway company remove a crossing or existing tracks.

Section 8 gives the Agency authority to order an existing railway company to permit the use of its railway line and crossings by other railway or "rapid transit" companies, etc.

Subsection 8(2) deals with the power to acquire lands and simply says that all provisions of law at the time applicable to the taking and valuation of lands shall apply. The procedures outlined above in the *Railway Act* would apply.

The timing of any order under section 7 or 8 will be largely determined by section 10 which requires that the province and the affected municipalities which have agreed to the plan have already passed the appropriate legislation in their jurisdictions.

Where it becomes necessary to value any land for the purposes of relocation under the Act, the Agency will simply enlist the services of a land appraiser to settle the

issue. The costs of new railway facilities situate within the urban plan and subject to this Act will also be determined by the Agency.

5. Canadian Environmental Assessment Act

(Assented to 23, June, 1992, not yet proclaimed in force pending preparation of implementing regulations)

This legislation, once proclaimed in force, would apply to the HSR rail business in the event that the roadbed construction entity were a federal Crown agent or department or a body subject to federal regulatory jurisdiction prescribed in regulations made under the Act, and the nature of the project is not excluded from the ambit of the Act.

Projects subject to the Act must go through an environmental assessment before a federal authority may give permission or commit funds to the project.

The Act permits the required environmental assessment to be folded into an existing process that also involves environmental assessment subject to certain conditions being met. In the event that a PC&N application process before the NTA were required, it is conceivable that any required environmental assessment could be represented by the NTA's own review of environmental impacts. Currently, the NEB has been delegated the environmental review function for pipelines under the Environmental Assessment Review Order.

Special provisions apply to lands affected by native interests defined as follows:

> 48. (1) Where no power, duty or function referred to in section 5 or conferred by or under any other Act of Parliament or regulation is to be exercised or performed by a federal authority in relation to a project that is to be carried out in Canada and the Minister is of the opinion that the project may cause significant adverse environmental effects on
>
> a) lands in a reserve that is set apart from the use and benefit of a band and that is subject to the *Indian Act*,
>
> b) federal lands other than those mentioned in paragraph (a),
>
> c) lands that are described in a land claims agreement referred to in section 35 of the *Constitution Act, 1982* and that are prescribed,
>
> d) lands that have been set aside for the use and benefit of Indians pursuant to legislation that relates to the self-government of Indians and that are prescribed, or
>
> e) lands in respect of which Indians have interests,

the Minister may refer the project to a mediator or a review panel in accordance with section 29 for an assessment of the environmental effects of the project on those lands.

48. (6) For the purposes of this section, "lands in respect of which Indians have interests" means

a) land areas that are subject to a land claim accepted by the Government of Canada for negotiation under its comprehensive land claims policy and that

i) in the case of land areas situated in the Yukon Territory or the Northwest Territories, have been withdrawn from disposal under the *Territorial Lands Act* for the purposes of land claim settlement, or

ii) in the case of land areas situated in a province, have been agreed on for selection by the Government of Canada and the government of the province; and

b) land areas that belong to Her Majesty or in respect of which Her Majesty has the right to dispose and that have been identified and agreed on by Her Majesty and an Indian band for transfer to settle claims based on

i) an outstanding lawful obligation of Her Majesty towards an Indian band pursuant to the specific claims policy of the Government of Canada, or

ii) treaty land entitlement.

Hence a separate environmental assessment may be necessary if lands subject to such aboriginal rights are validly covered within a railway plan.

6. Expropriation Act

The federal *Expropriation Act* provides an alternative basis for forced acquisition and compensation of private property for railway construction. This legislation has been incorporated by reference into the special Acts of major federal public works such as the St. Lawrence Seaway Authority.

The Act provides for direct ministerial control over defining what should be expropriated. However, objectors still can activate a public hearing on the merits of the notice of expropriation, although the hearing process can only result in non-binding recommendations. Compensation is determined by a market-value based statutory formula administered by independent appraisers. Compensation disputes are resolved through the courts at the instances of the expropriated party.

The time frames under the *Expropriation Act* are potentially tighter than under the *Railway Act*, with the exception of compensation dispute resolution.

7. National Transportation Act, 1987 (NTA)

Section 112 requires that all rates charged for rail freight be "compensatory". "Compensatory" is defined to mean exceeding the "variable cost, as determined by the NTA of the movement of the traffic concerned". This variable cost calculation must include a cost of capital. The Agency may conduct an investigation of a complaint that a rate is non-compensatory if, in its opinion, the investigation is warranted. The Agency has 90 days from receipt of a complaint to complete any investigation and it may issue interim remedial orders once it has commenced an investigation.

The Agency must disallow a non-compensatory rate unless the carrier establishes that the rate does not have the effect or tendency of substantially lessening competition or significantly harming a competitor and that it was not designed to have that effect. Overall the concept is similar to predatory pricing under competition law with an onus shift to the carrier to disprove anti-competitive effects once the rate is found to be non-compensatory. However, the regulatory standards for determining a non-compensatory rate can establish a "floor price" that is substantially higher than the floor price that is likely to be set under competition law.

The Agency is not required to issue such an order where it is found that the rate, even if not compensatory, "does not have the effect or tendency of substantially lessening competition or significantly harming a competitor and was not designed to have that effect".

Related to the above provisions, sections 58 to 63 provide for a system of public complaints to the Agency on the grounds that a rate or condition, *inter alia* for the carriage of goods by rail, may "prejudicially affect the public interest". The Agency has the power under these provisions to order the carrier to remove the prejudicial rate or condition. The statutory factors on which it is to base its consideration are much broader than those in the compensatory rates provision and can cover unreasonably high prices and exclusionary practices.

8. CN Special Act

The Canadian National Railways Act governs the relationship between the Governor in Council and Canadian National Railways ("CN") with respect to, among other aspects, the management and operation of railway lines which may be vested or owned, controlled or occupied by the Crown. The management and operation of these lines may be entrusted to CN by an Order in Council. Such management shall continue "during the pleasure of the Governor in Council" and is "subject to termination or variation in whole or in part by the Governor in Council".

CN has the right, subject to the Railway Safety Act to construct, maintain and operate railway lines, branches and extensions. Finally, the provisions of the Expropriations Act are generally applicable to CN. The Federal Court has jurisdiction in all cases arising out of any expropriation of land by or against CN.

CN is declared to be a work for the general advantage of Canada and is therefore subject exclusively to federal regulatory jurisdiction.

CN requires approval of the Governor in Council to acquire securities of other companies.

9. Financial Administration Act

The Financial Administration Act ("FAA") provides for the financial administration of the government, the establishment and maintenance of the accounts of Canada and the control of the affairs of Crown corporations. Section 89 of the FAA sets out the provisions for the issuance of directives by the Governor in Council to crown corporations. The section states, in part,

1. the Governor in Council may, on the recommendation of the appropriate Minister, give a directive to any parent Crown corporation, if the Governor in Council is of the opinion that it is in the public interest to do so; and

2. before a directive is given to a parent Crown corporation, the appropriate Minister shall consult the board of directors of the corporation with respect to the content and effect of the directive.

A parent Crown corporation is a corporation that is wholly owned directly by the Crown.

Parent Crown corporation annual capital budgets must be approved by Treasury Board. Its borrowing plans must be set out in annual corporate plans submitted to Treasury Board and particular borrowings must be approved by the Minister of Finance, subject to possible exemption by regulation.

Accordingly, the FAA establishes a comprehensive financial and management accountability structure for all railways that are owned by the federal government, including CN and VIA.

C. Provincial and municipal legislation

Given the very likely constitutional treatment of the entire HSR business as a federal undertaking, a review of provincial and municipal legislation is not necessary. As previously noted, our examination of provincial railway legislation has revealed that there

are no substantive impediments, other than administrative duplication and possible regulatory inconsistencies, presented by these regimes in relation to the regulatory approval of the business.

However, the prevailing view of constitutional authorities is that provincial railway legislation does not provide a basis for expropriating federal Crown lands. Nor can it be used to expropriate lands of federal railway undertakings at least where expropriation would impair the ability of the undertaking to achieve its purposes (i.e. railway rights of way). In this situation the only option for the provincial railway is negotiation.

As well, it is also generally held that provincial or municipal land use jurisdiction do not apply to federal undertakings. The leading cases in this regard relate to the exposure of airports to provincial zoning controls and have consistently found that zoning controls do not apply to airport operations or design. (see *Johannesson v. West St. Paul*, [1952] 1.S.C.R. 292; *Re: Orangeville Airport* (1976), 11 O.R. 2d 546 (Ont. C.A.)).

However, provincial railways may be subject to provincial and municipal land use controls. These controls may establish substantial barriers to the construction and operation of a provincial HSR on new rights of way particularly in urban and developed agricultural areas.

D. Issues and concerns

1. Issue: Does the current regime for approving railway development and construction create any impediments to the HSR project that require legislative change?

   Conclusion: The Railway Act currently provides an adequate regime.

Having carefully reviewed the provisions including procedural provisions of the federal *Railway Act* applicable to the planning, approval, and construction of a new railway under federal jurisdiction, we have concluded that there are no gaps or defects in the federal *Railway Act* despite its age that would act as substantive impediments to the planning, development, or construction of a high speed rail corridor that utilized either new rights of way or relied to some extent upon existing railway rights of way.

Specifically, the expropriation power of the *Railway Act* would provide for the acquisition of adequate property rights for the construction and operation of a high speed rail corridor including, if necessary, the forced acquisition of private property rights (including private property rights of existing railways) and existing provincial and municipal rights of way where negotiated solutions proved to be impractical. The expropriation powers of the federal *Railway Act* are currently adequate to ensure the capacity to develop and construct a self contained high speed rail corridor.

The *Railway Act* scheme, while designed for private share capital corporations, could also be applied to mixed government/private sector enterprises or to government-owned corporations.

However, the *Railway Act* railway approval regime contemplates an integrated roadbed/services business. It is doubtful that a roadbed business could alone obtain a PC&N certificate (a prerequisite to establishment if special legislation is not enacted) and land taken for it prior to the NTA consideration of the plan for the transportation services operation in support of the operator's PC&N application.

As previously discussed, if there were separate new businesses, the NTA would still probably require a joint hearing of the PC&N application. Or, if additional lands had to be taken for an existing railway, then the NTA would probably want to deal with leave to expropriate and the viability of the new operation in one proceeding. Nevertheless, the NTA could be directed to do otherwise by the Cabinet.

Consequently, in our view, the adoption of a different construction and approval scheme than that set out in the *Railway Act* would have to be justified on policy grounds rather than legal grounds.

2. Issue: Are there existing legislative options which are preferable to the *Railway Act*?

   Conclusion: The *Railway Act* schemes for approval of new railways and necessary expropriations have advantages over other alternatives despite the possibility of lengthy NTA hearings.

We have compared the land acquisition regime of the *Railway Act* with that of the federal *Expropriation Act* in terms of relative procedural efficacy and political acceptability. (The scheme of the CNR's enabling legislation tracks the *Expropriation Act* in this regard.) The expropriation powers of the federal *Railway Act* are exercised in the context of an overall licensing proceeding directed by the National Transportation Agency upon receipt of a railway license application (i.e. a request for a PC&N certificate) and a related request for leave to expropriate which is built upon a detailed plan of the railway undertaking identifying the specific lands required and overall engineering of the project. Thus, expropriation decisions as well as environmental impact decisions can be internalized in the processes of an independent regulatory agency which to date has had a preference towards conducting major matters through public hearings. The NTA offers, in effect, one stop shopping for all necessary approvals.

The NTA provides a forum for municipal land use policies to be taken into account given that these measures could not be enforced against a federal HSR undertaking.

The independence of the NTA from the federal Cabinet could mitigate provincial concerns over undue federal government influence or conflicts of interest in resolving conflicts between competing federal and provincial policies.

The *Expropriation Act* could also be used as the land acquisition vehicle for the high speed rail project. As adopted through special legislation, it was, for example, the vehicle for the acquisition of lands for the St. Lawrence Seaway and has also been used to acquire lands for national parks.

The principal difference between acquisition of land under the *Expropriation Act* and under the *Railway Act* is that the decision to expropriate under the *Expropriation Act* resides at the ministerial level and that this decision is exercised independently of other necessary decisions addressing the viability of the railway project and its environmental impacts.

Were the *Railway Act* to be relied upon as the regulatory vehicle for approval of the high speed rail project, we would expect that the hearing process would resemble a major pipeline facilities approval process as administered by the National Energy Board or its U.S. counterpart, the Federal Energy Resources Commission (FERC). Such a process can involve considerable time lags and out-of-pocket costs. However, given the public nature of such a process, it may prove to be politically more attractive. As the decision maker is somewhat at an arm's length relationship with the government, its decisions may have a higher degree of legitimacy. This independence may prove to be a significant factor given that some interests could perceive a conflict of interest on the part of governments if there is substantial government funding in the establishment of the railway while at the same time the government is calling the shots on the location of the facilities, taking cost minimization into account as an important criterion. At the same time, the decision-making discretion of the NTA can be constrained through the Cabinet's policy direction power and the Cabinet's capacity to vary or rescind NTA decisions.

It is worth noting that the expropriation of any lands for a high speed rail corridor at the end of this century could involve the taking of some lands having a high opportunity value as well as the taking of lands in areas which are much more built-up than during Canada's original railway construction phase. This could involve greater environmental sensitivities than in past railway projects. Again, the National Energy Board facilities approval model may provide an attractive vehicle for internalizing environmental, land acquisition, and economic viability issues within a single procedure, rather than establishing multiple procedures under existing legislation or legislating special procedures once government commitments in principle to the project have been given, for example, through development funding, policy endorsement, or special legislation providing an overall corporate or financial framework (as has occurred with the various U.S. projects).

It is also worth noting that it is very likely that the new federal *Environmental Assessment Act* will have been proclaimed in force prior to the development of a high speed rail corridor. There is a possibility that the high speed rail project, however it is structured in corporate and financial terms, may require a federal environmental assessment pursuant to the provisions of this legislation.

It is possible, however, that this environmental assessment could be delegated from the proposed Environmental Assessment Board to the National Transportation Agency.

Under the still applicable federal Environmental Assessment Guidelines and Order the environmental review of major pipeline projects has been delegated to the National Energy Board.

3. Issue: Does existing legislation pose problems for dealings with adjacent land owners and provincial governments?

   Conclusion: The *Railway Act* provides an adequate framework for dealing with level crossing, and farm crossing disputes.

The nature of any high speed rail technology requires a very secure facility corridor. Accordingly, special engineering considerations will apply to highway crossings and other types of crossings required for farming. The legal framework for adjudicating appropriate arrangements between highway owners and neighbouring land owners on the one hand and the railway right of way owner on the other is adequately set out under present federal and provincial railway legislation.

The real issue here is one of money. Given that both federal and provincial governments are likely to provide funds or non-cash support towards the development of the roadbed component of the business, it is likely that crossing engineering and funding matters will, to a large degree, be resolved through intergovernmental negotiation, possibly with some recourse to arbitration through the independent NTA as provided under the *Railway Act*. The extent to which such negotiations become a public event is a policy matter for the governments involved. However, note again that a NTA railway PC&N certificate proceeding will likely involve a fairly high public profile.

4. Issue: Is the current enabling legislation for railway safety and operating standards an adequate foundation taking into account possible HSR technologies?

   Conclusion: Current federal and provincial legislation is adequate. Of course, new specific regulatory standards will likely have to be developed.

We have reviewed existing federal railway legislation and regulations to assess whether this structure creates any significant impediments to the efficient operation of a high speed rail service. As in the case of railway development and construction, the existing federal railway law framework appears to be adequate to ensure safe operation of the high speed rail business. There may undoubtedly be special regulatory requirements arising from this new technology. The structure for modifying or adding to existing federal railway safety regulations is sufficiently flexible to accommodate these special requirements on a timely basis.

5. Issue: Could passenger ticket prices be regulated in a manner detrimental to profitability?

Conclusion: It is very doubtful that a type of profit cap could be introduced through the regulation of ticket prices under the current legislative framework.

As noted in the earlier consideration of statutory provisions, section 290 of the *Railway Act* provides for the NTA to roll back a rail passenger tariff found to be "prejudicial to the public interest" defined effectively to include the availability of passenger services. However, this scheme only contemplates the disallowance of individual tariffs, and not general control of profits and revenues.

In light of the presumably heavy competition in the HSR corridor from other modes of transport (passenger car, bus, air), it would seem very unlikely that the NTA would ever be asked to intervene to roll back ticket prices.

6. Issue: Would regulatory controls be a significant disincentive to the use of the HSR corridor for freight traffic?

Conclusion: Existing statutory provisions will not provide a significant disincentive for the carriage of freight traffic by HSR.

The compensatory freight rates provisions of the *National Transportation Act* are designed to establish a floor price for rail freight traffic movements. It should first be noted that these provisions were criticized in the recent report of the *National Transportation Act* Review Commission, and may not survive the next revision of the Act. Even if they do remain in place, the provisions should not pose a significant barrier to freight carriage activities. For the Agency to intervene in response to a claim that freight rates are not compensatory and are therefore to too low, it must in practice find that the rates are substantially reducing competition. Given the relatively small amount of freight that would be carried in a corridor that is heavily serviced by truck transportation, it seems very unlikely that the Agency could make such a finding. Similarly, in light of the competitive choices which a potential shipper would face from the trucking industry, which has relatively low entry barriers, it would seem very unlikely that a claim that rail freight rates in the HSR corridor were too high and as "prejudicial to the public interest", could be made out.

7. Issue: Would the expropriation power under either the federal *Railway Act* or the *Expropriation Act* be limited by aboriginal land claims?

Conclusion: Careful attention would have to be paid to any recognized Indian lands and to potential aboriginal land claims in the proposed rail corridor. The federal expropriation power may be inoperative for such lands.

As noted previously, the expropriation of native reserve lands, and lands forming part of a statutorily-recognized land claims settlement, requires the approval of the Governor in Council (i.e. the federal Cabinet).

These expropriation provisions are subject to further limitation in light of the *Indian Act,* and constitutional amendments concerning aboriginal rights made in 1982 and 1983.

Section 18 of the *Indian Act* provides that the Governor in Council's control over reserve lands is subject to the terms of any applicable treaty or surrender.

Section 35 of the *Constitution Act, 1982*, as amended by the *Constitution Amendment Proclamation, 1983*, provides constitutional protection for existing aboriginal and treaty rights, with "treaty rights" defined to include land claims agreements. Depending on the circumstances, a court could uphold an historic native land claim as an aboriginal right specifically entitled to constitutional protection. These rights are not necessarily extinguished by federal statutory provisions, such railway land expropriation powers in question.

In a recent case concerning fishing rights (*R.* v. *Sparrow*, 1990), the Supreme Court of Canada has held that any impairment of aboriginal rights would only be justified if the objectives were "compelling and substantial"; mere "public interest" is too vague. As well, the impairment would have to be consistent with the Crown's "special trust relationship" with native peoples. It is interesting to note that the Court offered "fair compensation" in expropriation as an illustration of the latter, thus suggesting that expropriation of aboriginal land would not necessarily be impossible.

8. Issue: What means exist to provide for regulatory oversight of the HRS business if this is considered to be appropriate?

   Conclusion: Several measures are available under existing legislation for all ownership options with the exception of operation by an existing private sector railway. However, the need for such special oversight is questionable.

In the case of a new railway requiring a PC&N certificate, through creative use of the NTA's power to give interim approval, attach conditions and review its own decisions, the existing legal framework could provide for periodic franchise renewal (popular with British privatizations of public utilities, and federal broadcasting regulation), an element of pro-active price regulation, and/or a consumer protection code involving service terms (including for example, an access code for disabled persons).

The oversight option would not be available if there was no PC&N certificate requirement, as would be the case if the rail lines were part of an existing federal railway. In the case of CNR, or any other federal Crown agent railway, regulatory oversight could still be exercised through existing powers of Cabinet direction to the CNR board and corporate plan review.

In the case of CPR, new measures would have to be enacted or established by agreement (such as financing or shareholder agreements) to provide for public or regulatory oversight of business performance (i.e. product development, pricing, service quality, consumer relations), as opposed to safety for which no new measures would be required. The tariff review mechanism of section 290 of the *Railway Act* focuses upon pricing and does not provide an adequate framework for a general review of the operation of the business.

The need for such special oversight is questionable. It should be kept in mind that the HSR business will operate in a highly competitive and mature transportation service market and will compete directly with the air, private automobile, and bus modes, none of which is exposed to such special oversight.

Arguably, public utility types of review measures are unnecessary where the supplier does not exercise market dominance and the prospect of special measures along these lines could well deter investor interest. At most, performance standards built into subsidy or financing agreements with government might be considered. But such terms would have to be very carefully designed to avoid inappropriate direct government involvement in management decision making. This is particularly important if the business is owned by both governments and private investors since special care is required to avoid a situation where the overall ownership and management rights of the government investor(s) exceed those of the non-government investors. Such a disparity, if it were to exist, should ideally be entirely a matter for negotiation between investor interests and not imposed by government.

Although some recent privatizations have involved policy reserve rights favouring the government in relation to defined major corporate changes and business decisions, such as a "golden share", the businesses to which they have been applied differ significantly from the HSR business in several important respects. These businesses have tended to be monopoly public utilities and the reserve is viewed as a partial substitute for direct regulation. In some instances the golden share concept has been proposed as a small or minority shareholder protection during the transition from state ownership to full private shareholder control. But most importantly, this concept has been applied to established relatively low risk businesses. In contrast, the HSR business will be risky, undeveloped and as noted will operate in a highly competitive market.

9. Issue: Is special HSR legislation necessary?

   Conclusion: Special legislation is not necessary, but may be desirable on policy grounds.

As discussed, there are no significant impediments to the development or operation of the HSR business under current federal laws that would necessitate an overriding Special Act. Specifically, we have found that the existing approval framework of the *Railway Act*, coupled with the Cabinet directive and appeal powers of the *National Transportation Act, 1987*, make review of the project (to the extent approvals are required) by the NTA

an attractive option. It provides for a comprehensive review of environmental, expropriation, and economic issues.

On the other hand, there may be some policy merit to special legislation. First, the legislation could crystallize stages in state funding support in a manner which is potentially more publicly accountable than through private financing agreements.

Second, it could provide a mechanism to codify intergovernmental and environmental arrangements. Notwithstanding likely exclusive federal regulatory jurisdiction over the project, there will be legitimate provincial funding and environmental concerns which politically may best be addressed through inter-governmental agreements. Even though these agreements could form the basis for a binding policy direction on the NTA or a condition of a financing arrangement, if the issues are sufficiently sensitive, codifying principles or standards in a federal statute may prove to be a necessary political resolution.

Third, as discussed below, investors may require statutory codification of measures to establish a level subsidy and public goods pricing playing field. One option for doing so, if intermodal legislation is not possible, would be legislative measures to gear government support for the HSR business to a formula for measuring government support for other modes. This could provide HSR investors with a fairly high degree of confidence and certainty that their investment, particularly in the high risk early years will not be undermined by unforeseen government policies that favour competitors.

10. Issue: Does the current intermodal legislative and policy environment create a substantial impediment to the development and operation of a HSR business in the corridor?

    Conclusion: Yes. The current lack of intermodal policy and government support coordination needs to be addressed before serious efforts are made to attract significant private investment capital to the HSR project.

Although current railway-specific (or intra-modal) legislation does not create material impediments to the development and operation of the high speed rail business, the same cannot be said for the existing inter-modal transportation framework and ensuing federal and provincial transportation infrastructure policies.

Taking into account (a) the relatively high business and financial risks that private investors will face should they elect to participate in this project (e.g., mature competitive market, large up-front outlays) and (b) the fact that the basic parameters for influencing consumer demand for the air, private automobile, intercity bus and high speed passenger rail transportation services in the Windsor to Quebec urbanized marketplace are to a very significant extent subject to federal and provincial public goods supply, taxation, and regulatory policy, it would appear to be very important, in order to maximize the private sector investor interest and ultimate economic viability of this project, to establish a more coherent, systematic, and predictable inter-modal legislative and policy framework.

The province of Ontario has recently announced plans to off-load the provision of certain intercity highway services into a separate government-controlled corporation having a balance sheet which is separate from that of the government as a whole and which should eventually include its own long-term debt. Airport facilities will probably continue to be devolved from the federal government to separate airport operating authorities. There is now increasing interest throughout North America in the possibility of setting usage-based fees for intercity roadway use and in establishing peak load or marginal cost driven prices for airport access. The same peak-load pricing principles could be applied to the utilization of airspace in the vicinity of airports or any other common property resource required to provide transportation services. Finally, on a separate track is the issue of the use of fuel taxes and licensing fees to fund highway maintenance in a fashion that reflects (a) the extent to which different types of vehicles consume highway infrastructure and contribute to implement demand for maintenance and facilities, and/or (b) consumption externalities (e.g., environmental impacts and public hazards).

Separate pricing (and privatization) of elements of transportation businesses which heretofore have been assumed to be pure public goods, or at least essentially a government responsibility, can reasonably be expected to be a major public policy development for inter-city transportation products throughout North America for the balance of the century. Approached wisely, this development can provide the springboard for a new statutory framework aimed at achieving inter-modal parity in government action. Leaving specific modal initiatives to be developed largely in isolation of each other makes it much more probable that potential private investors in relatively risky transportation businesses will perceive the turn-of-the-century policy environment to be even more confusing and unpredictable than it is now.

Regardless of whether the high speed rail business is conducted through a single integrated roadbed/transportation service entity or whether there are separate roadbed and service businesses having some degree of separate ownership, it is doubtful that the maximum amount of private sector funding will be forthcoming absent an inter-modal policy and legislative structure that can assure that the inevitable substantial taxpayer support for competing modes is similar when measured on the basis of support per unit of capital plant or per unit of service output.

It will also be necessary to ensure, within reasonable bounds, that the extent of taxpayer support and government regulatory burden and costs affecting competing modes: (1) can be reasonably anticipated; (2) can be expected to be comparable to that to which the high speed rail business will be exposed; and, (3) at the very least would not undermine the ability of the high speed rail project to compete in markets where it is relatively efficient. It would also be important to have such a general inter-modal framework (principles at least, given legislation would take some time) in place to provide a more rational structure for addressing the submissions of competing interests, both in the transportation sector and consumer interests, for and against the high speed rail project in the event that serious consideration is given to its development.

In the event that government investment funding and/or subsidies are needed by the HSR business, the absence of such a pre-existing framework will, in our view, make it much

more difficult for government to predict or to control their funding exposure to this business over time than if the framework were in place. Were the intermodal framework not present, and the government did impose new funding controls on the HSR business once it had begun operations, the legitimacy and competitive purpose of the decision would be much more open to attack, particularly from HSR investors.

There are many possible intermodal framework options. Options that might be considered include:

1. Federal-provincial transportation infrastructure program and planning and funding agreements;

2. Removal of the financial statements of all transportation infrastructure programs from government consolidated accounts;

3. Restricting transportation infrastructure program funding to fee-based revolving fund accounts;

4. Requiring private debt funding for all government supplied transportation infrastructure, subject possibly to express limits on general government guarantees;

5. Devolution of responsibility to Crown corporations from direct departmental and Ministerial accountability;

6. Establishment of a federal-provincial, municipal multi-modal investment and pricing policy advisory body having the right to advise Ministers but also to report its analysis and recommendations publicly;

7. Statutory multimodal user-pay or mixed taxpayer-user pay standards enforceable through independent agency appeals by private sector suppliers and user interests (Note: this would require complementary federal and provincial enabling legislation); and

8. Amendment of the *Competition Act* extending its coverage to the supply of transportation infrastructure or services **on a non-commercial** basis by governments and Crown agents, **for example as public goods that** are not **rationed through commercial supply and price terms.**

IV

Labour Issues

This chapter examines existing Canadian labour legislation and collective agreements which apply to passenger rail services, in order to identify any impediments that they would impose on an HSR service, and the manner in which these impediments or constraints may be overcome. A review of HSR labour practices in other countries as well as a review of the proposed HSR labour practices as defined to date by the Technology Consultant were also carried out as part of this examination.

A. Legislative framework

As concluded in the previous chapter, Federal jurisdiction will apply for all practical purposes to the construction and operation of HSR in the corridor. As a consequence, the Canada Labour Code and associated federal laws and regulations (e.g., safety standards) will be applicable to the workforce employed in the HSR corridor business.

In isolated circumstances, suppliers or third parties who are providing services (e.g., equipment maintenance, catering) to the HSR operator and who are **not** viewed as integrally related to the HSR undertaking, may be subject to provincial labour regulatory jurisdiction.

1. Canada Labour Code

The Canada Labour Code (Code) is subdivided into three parts:

- Part I — Industrial Relations
- Part II — Occupational Safety and Health
- Part III — Standard Hours, Wages, Vacations and Holidays

Part I of the Code is of primary concern here. It governs among, other things, the collective bargaining relationships between an employer and the union representing the company's employers. The Code provides the legal framework by which employees may select a union to represent their interests, how that union represents the employees, and the negotiation of collective agreements. In addition, the Code governs the negotiation of renewals to a collective agreement including the various

steps leading to the time when an employer may legally terminate a collective agreement and when a union may legally strike an employer.

In addition, Part I of the Code defines:

- The composition, powers and duties of the Canada Labour Relations Board (C.L.R.B.)
- Successor rights and obligations.
- Practices that an employer must follow when implementing technological changes.

The latter two issues are of particular importance to the introduction of HSR in the corridor.

2. Successor rights

"Successor rights" means the right of employees to continue to be governed under an established collective agreement and to be represented by the same bargaining agent (union) following the **sale** by the employer party to that agreement to a third party of the **business** in which those employees are engaged. The key questions are therefore whether there is a) a **sale** of b) a **business**. No successor rights would arise if a new corporation were established to develop and operate HSR in the corridor that did not involve the sale of a business of an established railway which was subject to a collective agreement.

Under federal labour legislation, successor rights are treated under Sections 43 to 47 inclusive of the Code. Both federal and provincial labour legislation[1] define the terms "sale" and "business" broadly leaving considerable discretion to the relevant statutory tribunals (e.g., C.L.R.B., Ontario Labour Relations Board, Québec Tribunal de travail) to determine whether successor rights actually flow in a given case. Traditionally, the key factor in determining whether a business has been sold is a continuity in the nature of the work done. Successor right also can flow if a portion of a business is sold. Under federal labour legislation, successor rights can arise only if the business is under federal jurisdiction before and after the sale.

Successor rights do not arise in genuine circumstances of subcontracting, loss of business to a competitor or corporate dissolution under federal labour relations law. However, under Ontario labour relations law, successor rights do apply where an employer begins to provide at the same premises, services substantially similar to those of the previous employer.

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[1] *Ontario Labour Relations Act; Le code de travail (Québec).*

3. Technological change in the work place

Under Section 51 of the Code, an employer is deemed to have introduced a technological change to his/her business when he/she introduces new equipment that results in a change in the manner in which he/she carries on the business.

Following sufficient notification to the bargaining agent by the employer of his/her intentions to effect a technological change that is likely to affect the employment of a significant number of employees, the bargaining agent has thirty days to apply to the C.L.R.B. for an order to serve notice to commence negotiations to revise the existing collective agreement to assist employees who will be affected by the proposed technological change. The C.L.R.B. will issue such an order where it concludes that the change will affect a significant number of employees. The employer may not implement the technological change until the C.L.R.B. has dealt with the agent's application.

However, it should be noted that all railway collective agreements have exclusion from these provisions of the Code, because similar provisions are already written into the collective agreements which have precedence over the provisions of the Code.

4. Employees and independent contractors

The Code does not provide any clear definition of an "employee" and does not even address "independent contractors." Interpretation has been left to the courts. An "economic control test" appears to be the latest standard adopted by the judiciary and the C.L.R.B.

Generally speaking however, there is a clear distinction via the above test between an employee who works under a contract of service and an independent contractor who performs work for others through contracts for services. A key factor to characterizing an independent contractor is the degree to which his/her operation is separate from that of the business for which he/she has agreed to provide his/her services.

5. Summary

Federal labour legislation (i.e., the Canada Labour Code) will apply in practically all instances to the construction and operation of HSR in the corridor.

Aside from governing the collective bargaining process, the Code also deals with successor rights and technological change in the work place. Avoidance of successor rights under federal legislation would require the creation of an entirely new HSR enterprise totally separate from existing federally regulated railways. The sale of even a portion of one of the federally regulated railways' businesses to the HSR enterprise may involve the successor rights provisions of the Code. In any

event, the unions can be expected to try to protect their existing membership and influence, irrespective of how the HSR enterprise is established.

B. Union representation

For all practical purposes, there are two freight railways (CN and CP) and one passenger railway (VIA Rail) which operate currently in the corridor. Union representation for employees of these three railways is outlined below.

1. Present union representation

There are now currently ten unions which represent employees of CN, CP and VIA. They are described briefly in Appendix A.

a) Running trade unions

The Brotherhood of Locomotive Engineers (B.L.E.) and the United Transportation Union (U.T.U.) are commonly referred to as running trade unions. Conductors, for example, are members of the U.T.U. Historically, these unions have held collective agreements with CN and CP or their predecessor railways since before the turn of the century. Recently the B.L.E. and U.T.U. consolidated their representation in negotiations with the railways by forming the Canadian Council of Railway Operating Unions (C.C.R.L.U.).

b) Non-operating unions

The Canadian Brotherhood of Railway, Transportation and General Workers (C.B.R.T. & G.W.), the Transportation Communication International Union (T.C.U.), the Brotherhood of Maintenance of Way Employees (B.M.W.E.), and the Railroad Signalmen represented by a division of the International Brotherhood of Electrical Workers (I.B.E.W.) are commonly referred to as non-operating unions. Historically, they or their predecessors have held collective agreements with CN and CP since the early 1900's. The Rail Canada Traffic Controllers (R.C.T.C.) was formed in the early 1980's from a group of employees formerly represented by the T.C.U.

c) Shop craft unions

Until recently, there were a number of unions representing employees involved mainly in the maintenance of equipment and rolling stock. These were: the Canadian Automobile Workers (C.A.W.), the International Association of Machinists and Aerospace Workers (I.A.M.), the International Brotherhood of Electrical Workers (I.B.E.W.), the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada (U.A.J.A.P.), the Sheet Metal Workers International

Association (S.M.W.A.), the International Association of Boilermakers (I.B.B.), and the International Brotherhood of Firemen and Oilers (I.B.F. & O.). However, in June of 1994, the National Automobile, Aerospace and Agricultural Implement Workers Union of Canada (CAW–Canada) became the sole representative of all the former shop craft unions (see Section 3 below).

The other union groups—the CN and CP Police Associations, are prohibited by the Canada Labour Code from negotiating in concert with the other railway unions. They or their predecessors have held collective agreements with CN and CP for over 75 years.

2. Union representation at VIA Rail

Since VIA was formed in 1978, CN and CP unionized employees have been gradually transferred to VIA. Generally, the unionized employees have continued to be represented at VIA by the union(s) which represented them at CN or CP. In all cases, the terms of the CN or CP collective agreements became the terms for the VIA collective agreements. VIA currently has nine collective agreements with the: B.L.E., U.T.U., C.B.R.T. & G.W. (separate agreements for on-board services employees and off-train employees), the B.M.W.E. and four shop craft unions (i.e., C.A.W., I.A.M., I.B.E.W. and U.A.J.A.P.) now represented by CAW–Canada.[1] All collective agreements are for two-year terms and expired on December 31, 1993.

3. Recent changes in union representation

The number of employees at CN and CP have been greatly reduced since the introduction of new technology commencing in the 1950's (e.g., diesel locomotives) and in more recent times by competitive pressures from the trucking industry.

For example, CN had over 120,000 employees in the early 1950's, 80% of whom were represented by some sixteen different unions. Today, with fewer than 38,000 employees, CN must still deal with fourteen collective agreements.[1] CP with a smaller work force must deal with fifteen collective agreements.[1] Each union holds its own collective agreement with the railways; therefore, it is possible that the freight railways could be faced with fourteen to fifteen different sets of labour negotiations at the same time.

Faced with this problem, CN and CP filed applications in 1990 for review of the running trades and shop craft unions Certification Orders to the Canada Labour Relations Board (C.L.R.B.). VIA Rail filed similar applications in 1987 (shop craft unions) and in 1991 (running trade unions).

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[1] *A consolidated shop craft collective agreement has yet to be negotiated with CAW–Canada.*

The provision of the Canada Labour Code which was utilized by the companies is found in Section 18 of Part 1 of the Code which reads:

> *"18. The Board may review, rescind, amend, alter or vary any order or decision made by it, and may re-hear any application before making an order in respect of the application."*

Pursuant to the provisions of the Code, the C.L.R.B. conducted a series of investigations and hearings on the Shop Craft case over a period of two years. Finally, in the summer of 1992 the C.L.R.B., in separate CN and CP decisions, ordered that one union represent all shop craft employees at CN (instead of six) and one union represent all shop craft employees at CP (instead of seven). The C.L.R.B. made a similar decision regarding VIA employees in October of 1992.

After a series of legal delays, the C.L.R.B., in June of 1994, designated CAW–Canada as the sole representative of the shop craft unions. With respect to the running trade unions, the Canadian Council of Railway Operating Unions (C.C.R.O.U.) was certified by the C.L.R.B. in August of 1993 to represent the B.L.E. and U.T.U. in negotiations with the railways.

In spite of these recent union consolidations, changes in work rules and practices will take time. The B.L.E. and U.T.U. still exist as separate unions. The C.C.R.O.U. only represents these two unions for negotiation purposes. With regard to the merger of the shop craft unions under CAW–Canada, a new collective agreement still has to be negotiated to replace all the existing collective agreements. The process will be long and will not automatically mean significant change to existing work rules and practices.

4. Conclusions

Rationalization of union representation within the Canadian railway industry is now taking place. The consolidation of shop craft bargaining units is of particular importance. It should eventually lead to greater flexibility in work assignments and improve productivity of equipment maintenance. Thus, union representation within Canadian railways should not be a barrier to HSR development by the time that it could be introduced early in the next century.

C. Canadian railway collective agreements

A description of the key issues involving the work practices and pay systems for the running trades, shop craft unions and non-operating unions is presented below.

1. Running trades

The key issues concerning the B.L.E. and U.T.U. collective agreements are the pay system and the crew size.

a) Pay system

Under the current collective agreements, running trade employees are paid on a mileage basis system of pay. Also termed the "dual basis of pay," because the system pays miles run or hours involved whichever is the greatest, it has been in existence on the North American railway scene since the early 1900's.

A minimum day's work for an engineer (B.L.E.) operating in passenger service is 100 miles or 5 hours (note: it is eight hours in freight service). Extra pay is earned for train runs over 100 miles (termed "over miles") or over 5 hours in duration (termed "overtime"). Overtime pay is determined based on 20 miles per hour (note: it is 12.5 miles per hour for freight service) to equate time with miles (i.e., the collective agreement pay system is based on cents per mile). For example, if a trip involves a run of 100 miles, but a period of time in excess of 5 hours, the engineer would be paid overtime for all time in excess of the basic day of 100 miles or less, 5 hours or less. The same logic applies if a train run is in excess of 100 miles (i.e., the enginemen gets paid for all over miles). The system becomes more complex if both over miles and overtime are involved. However, using 20 miles per hour as the proxy, the enginemen will be paid whatever yields the greater amount. An engineer is also guaranteed a minimum of 4,200 miles over a 28-day period.

For a conductor or trainmen (U.T.U.), a minimum day's work is 150 miles or 7.5 hours. Extra pay is earned in the same manner as for an enginemen using 20 miles per hour as the factor to determine overtime pay based on miles. A conductor is guaranteed a minimum of 4,800 miles over a 28-day period.

The present pay system can become excessively costly for passenger rail, particularly as train speeds increase. For example on the Toronto–Montreal train run (a distance of 335 miles), an average employee makes four one-way trips per week and works from 25 to 30 hours. The average salary for a VIA engineer is $60,000/annum and for a VIA conductor, the average salary is $55,000/annum. The system is further complicated (and made more expensive) by a number of arbitrary payments (e.g., terminal time) which have been estimated to cost the railways in excess of 25% of the total running trade payroll.

Up to now, Canadian railway management has not been able to negotiate a more simplified and more efficient system of pay for running trade employees. However, major modifications to the running trade system of pay are now on the table in current negotiations between railway management and the running trade unions for new collective agreements.

b) Crew size

Since 1988, VIA Rail trains have been operating with a four-person crew: two engineers, one conductor and one assistant conductor (note: one additional assistant conductor is required for trains with greater than seven coaches excluding club cars). This is a reduction from a previous 5-person passenger crew.

VIA Rail is now making efforts to operate passenger trains with a two-person crew (i.e., one engineer and one conductor) where "operationally feasible" by 1995. VIA has already received approval to operate with one engineer from Transport Canada and had planned to begin reducing the number of locomotive engineers by operating Ottawa–Montreal trains with only one engineer. The reduction was objected to by the B.L.E., but an arbitrator ruled in favour of VIA. The B.L.E. has since appealed the arbitrator's ruling by seeking a judicial review by the Superior Court of Québec. The Court has since denied the union's application, but the B.L.E. has appealed that decision. The main issue is the adverse effects that the reduction will have on jobs, although VIA has indicated a willingness to negotiate this matter.

A reduction to one conductor will be part of the next round of negotiations with the U.T.U.

2. Shop crafts

The key issue regarding the shop craft unions is work flexibility in the shops. As earlier indicated, management contends that having multiple bargaining units lowers labour productivity because it hinders flexibility in job assignments. The C.L.R.B. has accepted this argument. The C.L.R.B. noted that the absence of fabrication of large components at VIA (VIA contracts this work out) as well as the type of minor repairs performed has greatly **decreased** the need for numerous employees heavily engaged in using their specific craft skills.

VIA Rail has been moving towards the maintenance characteristics of an HSR system (e.g., servicing in consist, emphasis on preventative maintenance). Combined with a more flexible job assignment system in the shops, efficient equipment maintenance practices should be in place for Canadian railways by the time HSR could be introduced in the corridor.

3. Non-operating unions

The C.B.R.T. & G.W. collective agreements for both on-board services and off-train employees now permit complete work flexibility both in terms of job assignments and hours worked per day. Staff are paid on the basis of a 40-hour work week averaged over a multi-week period. Part-time employment is allowed in certain conditions.

VIA Rail management are satisfied with the current C.B.R.T. & G.W. collective agreements and do not foresee any problems in adopting present work practices to HSR technology.

The railways have also expressed little concern with the B.M.W. & E (i.e., maintenance-of-way) collective agreement although there are numerous job classifications involved in the current collective agreements with CN and CP. It is interesting to note that VIA's contract has only two classifications ("foreman" and "worker") and may be the forerunner of the future CN and CP collective agreements.

4. Wage levels

Past research has generally concluded that rail workers are well paid. The report of the National Transportation Act Review Commission found that Canadian rail workers are the highest paid among transportation employees with average earnings (before benefits) of $841 per week in mid 1992. This compares with the average wage rate of a trucking industry employee of $565 per week. Comparisons with wages at Amtrak (see next section) confirm this conclusion.

When combined with the less-than-satisfactory productivity of Canadian railway workers resulting from the present pay system of the running trades or the job classification system of the shop crafts, present railway labour costs are considered excessive. This will be corrected to a certain extent if modifications are made to the collective agreements as discussed above.

5. Conclusions

The Canadian railway collective agreements as currently structured are considered a serious impediment to the development of HSR in the corridor. The pay system of the running trade collective agreement is considered the most serious impediment particularly when one considers the higher speeds of HSR operation.

However, as previously noted, there is a high probability that most of the impediments of the Canadian railway collective agreements will have disappeared by the time that HSR could be introduced into the corridor early in the next century.

D. Labour practices in other countries

Rail labour practices in the United States and France were researched for comparative purposes. The most significant findings concern the current pay system of Amtrak which will apply to its HSR service in the northeast corridor between Washington and New York.

1. United States (Amtrak)

The National Railroad Passenger Corporation (Amtrak) is responsible for providing all intercity passenger rail service in the U.S. Amtrak signed collective agreements with both the B.L.E. and the U.T.U. employing an hourly-based system of pay for the northeast corridor services in 1983 and for off-corridor services in 1986. The latest collective agreements between Amtrak and the B.L.E. and U.T.U. will expire on December 31, 1994.

a) Pay system

Under the Amtrak hourly-based pay system, running trade employees have a weekly guarantee of forty hours at the rate of the position. Time on duty is calculated from the time required to report for duty until released on completion of service. Overtime is payable at the time and one-half rate for all time in excess of eight hours.

Amtrak employees held away from home are paid for actual time held after twelve hours. There is a maximum payment of eight hours in held pay within any 24-hour period. This contrasts with VIA Rail employees held away from home who are paid for all time in excess of five hours (i.e., in the case of engineers) after the advertised departure time of their assigned passenger train service.

Based on an average of 2,080 hours per annum, annual wages for an Amtrak operating crew can range from $32,000 (U.S.) for an Assistant Conductor up to $45,000 (U.S.) for an engineer.

b) Crew size

Amtrak operates its northeast corridor services with **one** locomotive engineer. For off-corridor services, two locomotive engineers are required if the train run is greater than four hours in duration.

With respect to U.T.U. personnel, Amtrak must employ at least one conductor and one assistant conductor. A second assistant conductor is required if the train consist is between two and six coaches. A third assistant conductor is required for seven or more coaches in a train.

2. France (SNCF)

In France, operating crews also work on an hourly-based system of pay. There are specific rules[1] in regard to the maximum number of hours that a crew member can work in a day[2] depending upon factors such as:

- the number of consecutive days worked;
- whether the night period (i.e., between 12:30 a.m. and 04:30 a.m.) is partially or totally worked;
- whether a split shift is involved (one interval of at least one hour in duration is allowed although the total day cannot exceed eleven hours).

A normal day cannot exceed nine hours (or eight hours if the night period is partially or totally worked).

SNCF train crews can be employed in both conventional and HSR trains. HSR crews do not appear to be paid on a substantially different basis than that of conventional crews.

HSR trains operate with one locomotive engineer and one conductor per train set (one locomotive and up to eight coaches). The number of conductors can increase depending upon the number of passengers and the number of stops involved on a particular train run.

3. Conclusions

The key result of our review of passenger rail labour practices in the United States and France is the use of an hourly-based system of pay for the running trade employees versus the mileage-based system of pay still in use in Canada. With respect to crew size, there is less of a divergence. VIA Rail is fast approaching the use of one locomotive engineer in the cab and actually has less stringent requirements than Amtrak in the deployment of conductors.

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[1] *SNCF, Réglement PS4A no. 1, "Réglementation du travail," May 8, 1987.*

[2] *In Canada, hours of rest (which depend upon hours of duty) are specified in regulations enforced by the Railway Safety Board of Transport Canada (see Order No. R-40385 issued in 1987 by the former Railway Transport Committee of the Canadian Transport Commission).*

E. Proposed labour practices for HSR in the corridor

The technology consultant examined labour practices and costs for the Québec–Ontario High-Speed Rail Project. The technology consultant was responsible for determining the work rules under which the HSR system could be expected to operate. This section summarizes briefly the pertinent assumptions with respect to labour practices[1].

1. Running trades

The major conclusions of the research with respect to running trade employees are the following:

- Based on current collective agreement trends, it appears appropriate to assume a **two-person** crew (i.e., one engineering and one conductor) provided that crew members are not expected to collect tickets, assist passengers, etc. An additional on-board service person may be required if a two-person crew is adopted.

- The current system of seniority districts under existing collective agreements should not pose any impediment to the introduction of run-through train services (e.g., Québec–Toronto).

- An hourly-based system of pay would be in place by the time HSR is introduced through the evolution of the existing collective agreements.

- The skill requirements of HSR drivers are attainable for drivers of conventional trains with proper training.

2. Shop crafts

The research results for the shop craft union employees indicate that the most important institutional barriers to efficient equipment maintenance practices will have been overcome primarily due to the consolidation of the bargaining units. Secondly, equipment maintenance practices of VIA are moving towards maintenance practices of an HSR system (e.g., servicing in consist). The main remaining issues are felt to be:

- training the workforce to maintain the new HSR equipment;

- contracting out some equipment maintenance functions although VIA Rail now does significant contracting out (e.g., component rebuilds).

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[1] *CIGGT, System Operations and Costs, Draft Final Report, August 1994.*

3. Non-operating employees

As confirmed in our research, the existing collective agreements appear satisfactory. The main issue is the contracting out of certain functions, although the advantages of contracting out are not evident based on research carried out to date. Many existing practices will be easily adaptable to HSR services.

4. Other issues

The report also addressed other labour issues as discussed below.

a) Wage and benefit levels

Wage and benefit levels were reduced slightly from existing VIA employment conditions and wage rates due to:

- a shift from mileage-based compensation to annual wages for the train crews
- reductions in wages for coach cleaners and baggage handlers
- reductions in salaries for executive/management positions.

b) Part-time employment

The use of part-time employment to meet the peak needs of HSR services is assumed. Many existing VIA collective agreements now allow for part-time employment as long as it does not exceed certain levels.

c) Contracting out

The greatest benefits for contracting out are in the areas of equipment maintenance (e.g., major repairs and car cleaning) and fixed plant maintenance (e.g., programmed maintenance). The decision to undertake the equipment maintenance function in-house versus external contracts will depend to a great extent on the financial relationship and arrangements between the equipment builder with the HSR franchisee.

5. Summary

Many of the findings of the technology consultant conform to the findings of this study particularly concerning the evolution of the existing collective agreements. Most labour impediments under the current collective agreements will probably have been removed by the time HSR is introduced in the corridor.

F. Summary and conclusions

The review of labour issues revealed a situation that is undergoing dynamic change. Some constraints under the existing labour regime were identified which could impede the development of HSR in the corridor. These are summarized below. However, as further discussed below, most of these constraints are expected to be eliminated by the time HSR could be introduced at the turn of the century.

1. Existing constraints

Federal labour legislation will apply to the builder and operator of the new HSR system. The existing legislation is not in itself considered an impediment to the introduction of HSR. The successor right provisions would be an impediment if in fact it is found necessary to try to avoid them. There is little to suggest, however, that this course of action will be necessary if the existing collective agreements continue to evolve as predicted.

The major constraints of the existing collective agreements are summarized below.

a) Union representation

The number of unions, particularly the number of shop craft collective agreements is now limiting flexibility of job assignments in the workplace and thus hindering the productivity of equipment maintenance activities.

b) Running trades pay system

The mileage-based system of pay is the most **serious labour impediment** facing HSR development. Under existing passenger operations, it leads to low productivity of the workforce and excessively costly operations. To superimpose this system on an HSR operation would substantially exacerbate these inefficiencies. It must be replaced by a more contemporary system based on time if the HSR operation is to be viable.

c) Running trade crew size

At present, the four-person VIA Rail crew is excessive. This must be reduced to a two-person crew for the HSR operation.

d) Wage levels

Rail workers are very well paid in comparison to skilled workers in similar occupations or to employees working for the other modes of transport. We believe that wage levels under the existing collective agreements are higher than necessary and could be a constraint, particularly when combined with the running trade pay system.

2. Elimination of constraints

As explained in this chapter, most, if not all the constraints identified above are expected to be eliminated by the turn of the century through the evolutionary process of negotiation of the existing collective agreements. Positive change is already underway with respect to union representation and running trade crew size.

The other constraints will come under extreme pressure as Canadian railways continue efforts to reduce costs in order to survive in a highly competitive marketplace. Railway management representatives at VIA indicate that the mileage-based system of pay is on the negotiating table and should be eliminated within the next couple of years.

Wage levels will also come under pressure in future collective agreement negotiations. Some reduction in wage levels of the rail industry relative to other sectors of the economy is thus expected.

3. Conclusions

The constraints of existing labour agreements should be removed by the time HSR could be introduced in the corridor. If, by chance, some remnants of the constraints remain, there is a strong possibility that new arrangements can be negotiated by the HSR enterprise with the labour unions particularly if jobs are saved or created. Expedients to avoid successor rights to overcome labour constraints should therefore be unnecessary.

V

Financing HSR

The manner in which the HSR system would be financed is a major determinant in the institutional options which can be considered. It is closely related to another major determinant—the project's risks and how these can be shared among the project participants[1].

HSR financing is dealt with more extensively in the financial analysis component[2] of this feasibility study. Its treatment here is solely for the purpose of exploring alternative institutional arrangements.

A. Perspective

The corridor HSR system clearly represents an undertaking of megaproject dimensions. Capital outlays for a 200+ km/hr system are estimated[3] in the order of $9.5 billion (1993 dollars); for a 300+ km/hr system in the order of $10.5 billion (1993 dollars). By way of comparison, capital expenditures on a number of other large projects are noted below:

- Pearson International Airport Terminal 3 (Toronto) — $0.5 billion
- PEI Fixed Link Crossing — $1.0 billion
- Hibernia Oil — $5.2 billion
- Eurotunnel (channel tunnel) — $16.0 billion

[1] *The HSR project risks are dealt with in Chapters VI and VII.*

[2] *See Price Waterhouse "Financial Analysis" report, October 1994—notably Appendix 10. The specific results of this financial analysis work to some extent supersede some of the discussion in this chapter.*

[3] *These estimates do not include provision for any federal or provincial taxes, or import duties.*

Another dimension of the project's scale is the time required for its completion. A period of approximately ten years will be required from a decision to proceed with detailed studies, approvals, etc. until commencement of operations.

It is now apparent, and widely recognized that no HSR project in North America is likely to be financially viable without significant financial support from the public sector. The results of previous corridor HSR studies have come to this conclusion, and the experience to date in the U.S. has been consistent with Canadian studies. An extensive study by the Transportation Research Board (TRB) of the U.S. National Research Council dealing with prospective HSR systems in the U.S. has come to similar conclusions[1].

Indeed, the Terms of Reference for this component study acknowledge that "government financial participation in one way or another will most probably be required."

Another key financing consideration is the quality of the project's assets as security against funds advanced by investors. Unfortunately, the large majority of the HSR system assets consist of fixed plant facilities which are non-fungible assets with comparatively little salvage value. Even the HSR train sets, which would be moveable, would not likely be easily marketable.

All of the above suggests that the corridor HSR project will not meet *project financing*[2] norms. Investors will seek recourse to governments and/or the project owners. In this connection it may be noted that an undertaking of this scale must have outstanding potential profitability to qualify for project financing. For example, Eurotunnel—which was financed in this way—promised outstanding returns to its investors when financed (and is still believed by some to promise respectable returns even though its costs have approximately doubled).

B. General financing considerations

A self-evident financing goal is to achieve the greatest practical extent of private sector financing. To assist the development of specific financing scenarios, a number of general financing considerations are outlined below.

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[1] *"Break-even volumes would be attainable only in the largest city-pair markets or on systems with low operating costs and low capital costs that were able to attract the majority of projected air travel for the year 2010 in their Corridors while charging fares generally higher than air fares. It is improbable that any single Corridor would have both low costs and market conditions that allowed high fares. Therefore, it is unlikely that any new U.S. HSGT system would cover its capital and operating costs under current conditions."—**In pursuit of speed: New Options For Intercity Passenger Transport**, Special Report 233—Transportation Research Board (National Research Council—page 116).*

[2] *Project financing may be defined as "the financing of an enterprise in which the lender is satisfied to look initially to the cash flows and earnings of the enterprise as a source of funds from which a loan will be repaid and to the assets of the enterprise as collateral for the loan."*

1. Assets amenable to private sector financing

Components of the project which are most amenable to private sector financing are the manufactured items and equipment, particularly those of a high technology nature. These would include:

- Operating plant (locomotives and car equipment).
- Electrical supply system, catenary, etc.
- Control system and other electronics.
- Track structure (or some components thereof).

The above elements of the project are most readily financed for the following reasons:

i) Some of the above can be provided through supplier financing supported by the banks of the suppliers/manufacturers. Client driven relationships will encourage banks to support important clients in their initiatives.

ii) Equipment and components manufactured outside Canada may be subject to export credit financing.

iii) The risk of cost overruns in these components of the project is much lower than in construction work.

The civil engineering/construction work will be considerably less amenable to private sector financing than the components outlined above. It is anticipated that most of the construction work would be conducted by Canadian construction contractors. Again, the risk of cost overruns in this phase of the work is higher. There may therefore be reason to entertain government financing of these costs.

Notwithstanding the lower attractiveness of construction and civil works in respect of private sector financing, there may yet be some possibility that some or all of these costs could be financed by the private sector subject to satisfactory project economics and adequate risk-sharing schemes (e.g., turn-key, fixed price contracts).

2. Debt/equity ratio

The proportions of debt and equity for the private sector financing will be governed by a number of considerations, and will ultimately reflect a balance between the required return on equity and debt cover ratios.

3. Délai

Un projet de train rapide prend beaucoup de temps avant de générer des recettes et il comporte en plus des risques à l'étape du développement. Or, les investisseurs n'aiment pas tellement attendre de longues périodes avant de pouvoir retirer des bénéfices. Il est donc probable que les premières étapes du projet soient forcément financées en grande partie par le secteur public ou des prêts à la construction garantis par l'État.

4. Séquence de financement

Voici la séquence générale prévue pour le financement du projet de train rapide.

a) Lancement du projet (planification, approbations, etc.)

Ces travaux seraient financés par les gouvernements et, dans une certaine mesure, par des investisseurs du secteur privé.

b) Construction

Des prêts à la construction pourraient être obtenus auprès de banques commerciales, mais il faudrait probablement qu'ils soient garantis par l'État.

c) Financement à long terme

Une fois le projet terminé et les services payants commencés, des prêts hypothécaires remplaceraient les prêts à la construction. Un financement de ce niveau nécessiterait probablement un consortium international d'institutions financières formé notamment de compagnies d'assurances et de certains types d'établissements bancaires.

C. Scénarios de financement

Quatre prototypes de scénario de financement ont été conçus, dans le but de connaître les différents résultats susceptibles de découler de l'analyse financière du projet de train rapide. Plus loin dans le rapport, ces scénarios seront adaptés aux diverses options institutionnelles retenues.

1. Scénario 1 : projet financé à 100 p. 100 par le secteur privé

Ce scénario envisage une situation optimiste où les prévisions de la clientèle et des recettes sont suffisamment élevées pour assurer un rendement financier respectable, mais non une rentabilité exceptionnelle. Il correspondrait à un taux de rendement interne d'au moins 10 p. 100 et d'au plus 20 p. 100. Le long délai d'exécution du projet et ses risques inhérents demeurent toutefois préoccupants pour les investisseurs.

the extended project development time frame and inherent risks remain a concern to investors.

In the above situation virtually the entire project can be supported by private sector financing. However, governments would probably be called upon to guarantee the construction loans until such time as the system successfully achieves full revenue service. At this time the guarantees would fall away, with the construction loans being taken out by the private sector long-term financing arrangements.

2. Scenario 2: 75% private sector financing

In this scenario some financial contribution is required of governments in order to reduce the private sector's investment to a level which can be serviced by the HSR systems ridership and revenues. Thus, approximately 25% of the total capital outlay would be provided by governments—either by way of direct grants, or through contribution of certain assets (e.g., land for right of way).

The government financial contributions would be made in the earlier stages of the project, although some private sector funding would also be required from the outset.

The balance of the project would be financed by the private sector. Again, it is assumed that the government will be required to guarantee construction loans until project completion when the long-term financing can replace the construction loans.

3. Scenario 3: 50% private sector financing

This scenario requires a very substantial financial contribution by governments in order to render the private sector investment financially viable. The overall arrangements, however, are highly similar to Scenario 2, except that the public sector would contribute more funds or assets. As before, governments would guarantee the construction loans.

4. Scenario 4: public sector owns most, if not all of the fixed plant

If the project financial results are such that significantly more than 50% of the capital must be supplied by governments, a public/partnership or perhaps a Crown corporation would be more practical arrangements.

There is one alternative arrangement, however, which merits attention, and which was specifically cited in our Terms of Reference. Sometimes referred to as the "public utility" option, this scheme entails public sector ownership of the fixed plant (i.e., right of way, track structure, electrification, signals and stations), with a private sector franchisee providing the train sets and maintenance facilities, and operating and maintaining the system.

Previous studies indicate that the above arrangement would be highly financially attractive to the franchisee. Net system revenues would easily cover the franchisee's investment in operating and maintenance plant, and would enable the payment of user fees. The user fees would effectively service a part of the public sector investment in the fixed plant. However, this scheme implies that a large proportion of the overall investment and risk would be sustained by the public sector.

VI

Major Project Requirements And Associated Risk Factors

The formulation of institutional options requires a clear delineation of the requirements and risks associated with the HSR undertaking.

In this chapter we examine the components of the HSR development project, focussing first on "requirements for success" (i.e., what must be done well), and subsequently addressing the risks in each of these components. This analysis is organized around four principal phases of the project, commencing with the planning/approvals phase.

For purposes of the analysis we assume:

i) A prefeasibility study has been conducted with sufficiently positive results to convince governments to proceed further.

ii) Approvals to proceed have been given at senior political levels of the government(s).

iii) Government(s) have agreed to participate in the project financing in a significant fashion.

For each of the major project phases, we list below the principal requirements, together with the associated risks.

Requirements annotated with asterisks represent activities which must be carried out by government(s)—at least in part.

A. Planning and approvals phase

1. Requirements

- Integrated multimodal planning*, delineating the role of HSR in relation to other transportation modes and developments, and establishing the overall priority to be accorded to HSR. For example:

- versus highway development (as well, may be opportunity for concurrent new highway/HSR construction);
- versus airport development/expansion (can HSR relieve, supplement or feed airports and airlines?);
- versus commuter service and/or conventional rail.

- System performance objectives* (i.e., service frequency, time in transit, schedules, reliability, number of station stops).
- Type of technology*.
- Routing* (existing versus new right-of-way; alternative locations; stations).
- Coordination of multimodal connections*.
- Land use planning*, including:
  - joint use lands;
  - lands to be acquired;
  - resolving land use conflicts;
  - seeking to avoid aboriginal lands.
- National Transportation Agency approvals*:
  - new railway company;
  - new railway line.
- Environmental mitigation and approvals.*
- Design standards and codes* (existing and new).
- Initial Financial Plan*.

2. *Risks*

- *Unable to resolve multimodal planning and priorities satisfactorily.*
- *Impossible to obtain consensus on routing plan.*
- *Unable to resolve land use conflicts.*

- *National Transportation Agency rejects, or requires significant change to railway plan.*
- *Environmental approvals prove to be huge stumbling block—or perhaps a lengthy, costly process.*
- *Unable to achieve consensus on design and/or operating standards.*
- *Unable to conclude an acceptable initial financial plan.*
- *Political opposition (i.e., lower level opposition).*

B. Land acquisition phase

- Detailed plan for acquiring/sharing of lands.
- Negotiations with landowners.
- Expropriation proceedings* (where negotiations fail).
- Appeals* on part of some expropriated land owners.
- Adjudication of appeals* by the courts.

1. *Risks*

- *Extensive resistance by landowners forces large-scale expropriation.*
- *Appeals to courts result in delays and/or increased capital outlays.*
- *Backlash from landowners escalates political opposition.*

C. Detailed design, construction, commissioning phase

- Final financing arrangements*.
- Civil engineering design and construction (e.g., grade preparation, track structure, bridges and other structures).
- Mechanical engineering design and manufacturing (i.e., locomotives and car equipment).
- Electrical and electronics engineering (e.g., power supply and electrification; communications, control).

- Inspection, testing, trials, commissioning*.

1. *Risks*

- *Impossible to raise funds in capital markets as originally planned (e.g., capital requirements unexpectedly large; capital markets unreceptive to nature and/or scale of the project; rate of return and/or security and control demanded prove unacceptable).*
- *Technology problems (e.g., due to particular Canadian climactic or other conditions).*
- *Construction and/or manufacturing cost overruns (due to design errors and/or management problems).*
- *Pressure for local sourcing leads to cost overruns.*
- *Strikes, work stoppages (resulting in delays and cost increases).*
- *Tort liability.*
- *Political opposition (continuing).*

D. Operation phase

- Train operations.
- Train control and scheduling.
- Equipment maintenance.
- Sales and marketing.
- Reservation system (full commercial system).
- Yield management (revenue maximization).
- Passenger handling (ticketing, station services, on board services).

1. *Risks*

- *Operational and/or technical problems (e.g., unable to gain access to satisfactory reservation system).*
- *Ridership and revenues fall short of plans and requirements.*

- *Response by competing modes (e.g., airlines) greater than anticipated (i.e., in terms of service frequency and/or price).*

- *Changes in government policy affecting relative competitiveness of other modes (e.g., road user charges, fuel taxes, provision of expanded airport and/or highway infrastructure).*

E. Observations

Clearly a project of this magnitude and complexity involves numerous demanding requirements to achieve success. Corresponding to these requirements are a range of risks which threaten the completion and/or viability of the project.

The **major risks** are recited below. Each represents a consideration capable of derailing the project:

i) the planning and approvals process becomes fraught with difficulties, requires an inordinate span of time to complete, and/or fails to achieve conclusive results;

ii) the land acquisition process proves to be unmanageable or too costly, (bear in mind that some political resistance will probably dog the project over a long period—c.f. Pickering Airport lands dispute);

iii) arranging private sector financing in the capital markets proves impractical or impossible;

iv) major cost overruns arise from detailed design, in construction, or equipment manufacturing.

v) ridership and revenues fall short of planned requirements, possibly due to:

- error in demand analysis and forecasting;
- unanticipated response by competing modes;
- government actions or policies which impair or disadvantage the economics or competitiveness of HSR.

VII

Formulation Of Institutional Options

Institutional options are concerned with the overall structure of the entities involved in the planning, design, construction, operation, management and governance of the HSR system—i.e., who takes responsibility for these activities; who undertakes to finance various components of the system; and who sustains the risks involved.

In formulating institutional options[1], we seek to determine the most appropriate assignment of roles and responsibilities, and the associated sharing of risks among the parties, taking into account the manner in which HSR might be financed.

A. Perspective

A wide spectrum of institutional options can be envisaged, ranging from largely public sector undertakings (as has been the case in Europe) to undertakings driven largely by private sector interests, with the minimum necessary government involvements.

As noted above, it is logical to structure HSR institutional arrangements around the risks and rewards inherent in the HSR enterprise. Ultimately, many of the risks involved manifest themselves as financial risks to the project's backers. Hence, the character of the institutional arrangements will depend in considerable measure on how the HSR enterprise can be financed—in particular, how much financial support governments will be called upon to supply.

As a starting point, it is clear from the analysis of requirements and risks set out in Chapter VI that some components of the HSR undertaking are much better suited to the abilities of the public sector, while others are more suited to the private sector. By way of brief comment, the character of each of the major project phases is outlined below.

1. Planning and approvals phase

There is a great deal of public sector involvement or intervention in this phase. This is to be expected, given that the HSR system's purpose is to serve public transportation requirements on a large scale. For example, the necessary integrated

[1] *This chapter deals only with the formulation of institutional options. The evaluation of these options is reported in Chapter VIII.*

multimodal planning, routing, land use planning, National Transportation Agency approvals, and environmental approvals are all processes primarily driven by public sector determinants.

Viewed from the private sector perspective, a HSR enterprise largely financed by private sector capital could be much at risk vis-à-vis the public sector processes and decisions embodied in the planning and approvals phase.

2. Land acquisition phase

This phase can be envisaged as either a public or private sector undertaking, or some combination thereof. Even if entirely financed by private sector interests, some public sector involvement seems inevitable.

In all probability, land acquisition will prove to be controversial and problematic. Even with skillfully executed, well justified land use planning, many landowners can be expected to resist surrendering their properties.

In the circumstances, it may prove more expedient for land acquisition to be handled by public sector agencies.

3. Detailed design, construction, commissioning phase

The components of this phase are largely in the domain of the private sector. Even if the HSR system were a wholly public sector enterprise, much of this activity would normally be contracted to the private sector. However, some public sector involvement in testing and commissioning is mandatory in respect of standards and safety.

4. Operation phase

This phase can also be seen to be the realm of the private sector. In fact, some stakeholders argue that a top-notch, service-oriented enterprise driven by commercial processes is an absolute necessity. At the same time, VIA Rail believes it is best able to handle most components of the operation phase.

It is important to note that private sector interests can be vulnerable to significant changes in government transportation policy (e.g., user charges) in the operation phase.

All of the above suggests formulation of institutional arrangements on the basis of "who does what best" as a starting point, always bearing in mind the realities of HSR financing requirements.

B. The institutional options

A range of institutional arrangements is outlined below in three major categories:

- wholly private sector entities;
- public/private partnerships;
- wholly public sector entities.

In each case a brief statement defines the institutional arrangement. This is followed by some comments and observations. The evaluation and elaboration of the institutional options is described in Chapter VIII.

1. Wholly private sector entities

This is essentially the concept which has been pursued until recently in the U.S., without any success to date. This option would still require the negotiation of major aspects of the HSR system planning with governments.

a) New private sector corporation

Private sector interests would launch a new corporation, or possibly a family of corporations to plan, design, build, own and operate the HSR system.

b) CP Rail

CP Rail could conceivably undertake, or take the lead role in the development of the HSR system. CP Rail could contribute both assets and knowledge, as well as development capital.

The above wholly private sector options correspond to financing Scenario #1 (see Chapter V, page 70).

2. Public/private partnerships

Public/private partnerships involve a sharing of the responsibilities and risks of the HSR enterprise between the public and private sectors. This type of arrangement seems most consistent with the basic assumptions of the present project—i.e., that both public and private sectors would contribute to the funding of the HSR system. In all of the public/private options the private sector would be responsible for operation the HSR system.

The institutional options outlined below are defined in terms of the roles and responsibilities of the parties rather than corporate structures. They are arranged in increasing levels of public sector involvement and responsibility. In all cases, the public sector role may be shared among the federal and provincial governments. In

addition, government(s) might contract some components within their responsibility to the private sector.

a) Public sector takes lead responsibility for planning and approvals

Government(s) would take the lead responsibility up to completion of all approvals, and would sustain most of the costs during this phase. Private sector interests would also be involved in many of the component activities, particularly setting system performance objectives, specifying the technology, and developing the initial financial plan.

As previously noted, many of the components of this phase require the involvement of, or must be governed by public sector interests. Having government(s) take the lead responsibility would relieve private sector interests of risks largely beyond their control. The private sector would take responsibility for the remainder of the project.

Although public sector involvement would be high in this phase, the associated public sector financing would only be about 2% in relation to total capital expenditures.

The above option corresponds closely to financing Scenario #1 (see Chapter V, page 70), because public sector expenditures would be very modest under this arrangement.

b) Public sector takes lead responsibility for planning and approvals; land acquisition; and grade separations

In addition to 2a), above, government(s) would also take responsibility for land acquisition. As the price paid for the land would also be within government control, it would be logical that governments pay for and own the land, possibly leasing it to the private sector partners.

In addition, government(s) would take responsibility for provision of all new or upgraded road crossings. In this case, provincial and possibly municipal authorities would likely be the principal public sector participants. Apart from reducing the financing requirements and risks to the private sector, this arrangement would probably minimize any controversy over the type or scale of grade separations and/or other crossings to be provided.

Under this arrangement, private sector interests would be relieved of three major categories of activities and associated risks which would be particularly difficult for them to sustain and control. The private sector would then take responsibility for the remainder of the project.

Public sector involvement in the project financing would be significant under this option, as illustrated below.

Public Sector Capital Expenditures[1] (% of total project)	
Planning & Approvals Work	2%
Land Acquisition	5%
Grade Separations	15%
Total:	22%

The above option generally corresponds to financing Scenario #2 (see Chapter V, page 71).

c) Public sector takes responsibility for planning and approvals; land acquisition; grade separations; and earthworks and drainage

Under this option the public sector involvement would be further expanded to include provision of the earthworks and drainage. The associated public sector involvement in financing would be as follows:

Public Sector Capital Expenditures (% of total project)	
Planning & Approvals Work	2%
Land Acquisition	5%
Grade Separations	15%
Earthworks & Drainage	17%
Total:	39%

The above option corresponds approximately to financing Scenario #3 (see Chapter V, page 71).

d) Public sector takes responsibility for land acquisition, infrastructure and civil works, and some technology costs

This option represents an even larger financial participation by the public sector, and corresponds to the financing option developed by Price Waterhouse and Banque Nationale de Paris. The option was designed to achieve the maximum possible private sector financial participation which could be supported in light of the specific project costs and revenues. The associated financing and governance arrangements are somewhat complex,

[1] *The capital expenditure figures are approximate averages of both the 200 + km/hr and the 300 + km/hr systems for the total Québec–Windsor corridor based on the reports of SNC–Lavalin (infrastructure costs) and CIGGT (system operations and costs).*

and are described in the component study report titled "Financial Analysis"—November 15, 1994—authored by Price Waterhouse.[1]

Important features of this option include:

- a public/private partnership with shared responsibility for the planning work.
- capital structure:
  - 1.4% equity (1/2 public sector; 1/2 private sector)
  - 7.2% convertible subordinated debentures (wholly private sector)
  - 91.6% debt (various sources, but largely provided and guaranteed by public sector).
- overall result is approximately 72% public sector funding and 28% private sector funding, for those HSR configurations for which this financing arrangement is judged feasible.

In effect, under this option the public sector involvement in financing would be as follows:

Public Sector Capital Expenditures
(% of total project)

Planning and Approvals Work[2]	1%
Land Acquisition	5%
Grade Separations	15%
Earthwork and Drainage	17%
Track Structure and Bridges	18%
Stations and Other Infrastructure	10%
Electrification (70% share)	6%
Total:	72%

The public sector financing would be channelled through a Crown corporation established as the public financing agency. A construction and operations company, with both private and public ownership, would finance most of the equipment and technology investments.

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[1] *See especially Chapter 3—"Project Finance Considerations" and Appendix 10—"Banque Nationale de Paris—Note on Financial Structure."*

[2] *The private sector equity contribution would finance a portion of these costs—representing about 0.7% of the total project costs.*

e) Public sector takes responsibility for all fixed plant

This arrangement would extend all of the above to the point where government(s) would take full responsibility for the construction and ownership of all fixed plant, except maintenance facilities. Again, the actual design and construction might well be contracted to the private sector. Private sector interests would take responsibility for supplying the operating plant (train sets), and for operating the service.

Under this option, the private sector partner would probably pay a user fee to government(s) for use of the fixed plant. This scheme was captioned "the public utility option" by the Ontario-Québec Rapid Train Task Force.

Clearly this option places the lion's share of capital investment and risks in the hands of governments, as illustrated below.

Public Sector Capital Expenditures (% of total project)	
All Fixed Plant Except Maintenance Facilities	82%
Train Sets and Maintenance Facilities (private sector)	18%

The above option corresponds, by definition, to financing Scenario #4 (see Chapter V, page 71).

3. Wholly public sector entities

Included in this category are HSR undertakings wholly funded by government(s), and for which many or all of the risks are sustained by the public sector. Each of these options involves the possibility (if not probability) of contracting out certain components of the undertaking to the private sector (e.g., construction; certain operations). Such contracting may reduce, at least to a limited degree, total risks to governments.

In view of the stated intention that financing of the HSR system be shared by the public and private sectors, this category of options may be viewed as somewhat unrealistic. However, it is possible that the project financial analysis might indicate a very large public sector funding requirement, while at the same time cost/benefit analysis might show the project to be attractive.

a) New crown corporations

i) Federal crown corporation

A "purpose-built" crown corporation, probably empowered by special legislation, would be created to plan, build and operate the HSR system.

This arrangement implies that most (if not all) capital funding and risks would be sustained by the federal government.

ii) Combination of federal and provincial crown agencies

A tailor-made combination of federal and provincial crown agencies would share the planning, construction, and operation of the HSR system.

This arrangement reflects the fact that the HSR system would serve Québec and Ontario. As the residents of these provinces would be the primary beneficiaries of the HSR system, it seems logical that these provinces would share in the capital funding and risks along with the federal government.

b) Existing crown corporations

For each of the options listed below, the additional possibility of combination with provincial crown agencies can be considered.

i) VIA Rail Canada Inc.

VIA could be transformed to take responsibility for the HSR enterprise.

This would imply a major change and expansion in VIA's role and corporate structure. It would galvanize government policy in respect of VIA's future.

ii) Canadian National (CN)

The HSR enterprise could be imbedded within CN, either as a separate division or as a subsidiary company.

Although CN has both relevant skills and assets to contribute, this too would involve a major change and expansion in CN's role. Present government policy appears more oriented toward achieving a fully commercial freight operation, possibly capable of privatization.

iii) VIA/CN combination

This is a hybrid of i) and ii), above. VIA would be responsible for operations, while CN would be responsible for construction and maintenance of the fixed plant. Again, this would imply major changes in both corporations, and possibly the need to establish subsidiary HSR entities.

iv) Crown corporation resurrection

It is conceivable that some existing, but inactive crown corporation could be rejuvenated or transformed to provide a home for the HSR enterprise.

The merits of such an approach may be questioned, unless a particularly suitable corporate vehicle is available for this purpose.

VIII

Evaluation Of Institutional Options

In this chapter we provide an evaluation of the various institutional options which have been formulated in response to various factors affecting the HSR project.

A. Evaluation criteria

In a general way, the Terms of Reference suggest four major categories of determinants for the institutional options:

i) Financing considerations.

ii) Appropriate roles of participants and sharing of risks.

iii) Legislation and legal considerations.

iv) Labour considerations.

Determinants i) and ii) have loomed large in the formulation of the institutional options. In contradistinction, determinants iii) and iv) do not appear to interact significantly in formulating or evaluating the institutional options, and explained below.

As concluded in Chapter III, it seems virtually certain that the HSR enterprise(s) will be under federal jurisdiction. This is all the more clear given that in the evaluation of corridor segments, the Montreal–Quebec segment, and the Toronto–Windsor segment are to be evaluated only as additions to the central Montreal–Toronto corridor segment. Thus, all corridor segments to be considered involve inter-provincial operations. Moreover, the review of relevant legislation revealed that there are no significant problems posed by the development of an HSR system which would *require* modification of existing legislation, or new legislation.

Similarly, it would appear that the labour considerations are unlikely to become determinants of preferred institutional options. As explained in Chapter IV, it seems probable that the existing work rules, method of payment and general railway labour regimes are likely to be rationalized by the year 2000 in favour of a regime which would be satisfactorily economic for HSR operations. Should this not occur, it still appears probable that special arrangements can be negotiated with the unions which would remove problems which significantly hinder the economic feasibility of HSR operations.

Accordingly, the need to consider special institutional options to avoid successor rights[1] is largely obviated.

As a result of all of the above, the evaluation task is considerably simplified by avoiding any requirement to structure and evaluate institutional options for corridor segments and/or for routing/technology options.

Given the above fortunate simplification of affairs, the following three major criteria emerge as logical determinants against which the suitability of the institutional options may be gauged.

1. Appropriate accommodation and sharing of risks

The institutional arrangements should provide for appropriate roles and responsibilities for the major participants such that the project requirements and risks are sustained in a workable, equitable fashion.

2. Maximum private sector financing

The arrangements should facilitate the maximum extent of private sector financing which could be sustained, given the project's economics.

3. Maximum business effectiveness and efficiency

This criterion incorporates a number of sub-criteria, as follows:

i) facilitates system of planning and approvals;

ii) facilitates land acquisition and/or expropriation;

iii) facilitates construction and commissioning;

iv) facilitates operation through strong management capacity.

B. Evaluation results

The institutional options formulated in Chapter VII are evaluated here in relation to the above criteria.

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[1] *Had this not been so, there may have been a need to consider special arrangements to create new corporate entities designed to be as far removed as possible from existing railway enterprises.*

Within this context the evaluation is summarized in Exhibit VIII-1. The evaluation is articulated in terms of four, simple, self-explanatory ratings: *good*, *fair*, *poor* and *unworkable*.

Comments and explanatory notes on the evaluations are provided below.

i) **Wholly private sector entities**

Both of the wholly private sector options rate poorly on accommodation and sharing of risks due to the very limited role which would be played by public sector institutions. Private sector financing—which would be 100%—is simply deemed unworkable. Effectiveness and efficiency is rated as poor due to the fact that major problems are expected to occur in the planning and approvals phase and in the land acquisition phase in the absence of an adequate public sector involvement.

ii) **Public/private partnerships**

a) **Public sector responsible for planning and approvals (c.f. Financing Scenario #1)**

Accommodation and sharing of risks is judged no better than fair, as problems are anticipated in the land acquisition phase without public sector involvement here. Once again private sector financing—which would be close to 100% in this case—is simply deemed unworkable. Effectiveness and efficiency is rated as fair, again limited by an inadequate public sector role in the land acquisition phase.

b) **Public sector responsible for planning and approvals; land acquisition; grade separations (c.f. Financing Scenario #2)**

The accommodation and sharing of risks is good in this case because the public and private sectors are each undertaking roles most suitable to them. Similarly private sector financing—approximately 75% in this case—is judged good, *assuming that this extent of private financing proves financially feasible.*[1] Business effectiveness and efficiency is also rated good because each of the sub-criteria appears to be satisfied by this arrangement.

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[1] *The financial analysis conducted by Price Waterhouse of these specific HSR projects reveals that Option ii b) would not be financially feasible.*

Exhibit VIII-1
Evaluation of institutional options

Institutional Options	Criteria: Accommodation & Sharing of Risks	Criteria: Maximum Private Sector Financing	Criteria: Maximum Business Effectiveness & Efficiency
i) Wholly private sector entities			
a) New private sector corporation.	poor	unworkable	poor
b) CP Rail.	poor	unworkable	poor
ii) Public/private partnerships			
a) Public sector responsible for planning and approvals.	fair	unworkable	fair
b) Public sector responsible for planning and approvals; land acquisition; grade separations.	good	good	good
c) Public sector responsible for planning and approvals; land acquisition; grade separations; and earthworks and drainage.	fair	fair	good
d) Public sector takes responsibility for land acquisition, infrastructure and civil works, and some technology costs.	poor	fair	good
e) Public sector responsible for all fixed plant.	poor	poor	fair
iii) Wholly public sector entities			
a) New Crown corporations.	poor	poor	poor
b) Existing Crown corporations (i.e., VIA or CN or VIA/CN).	poor	poor	poor

c) **Public sector responsible for planning and approvals; land acquisition; grade separations; and earthworks and drainage (c.f. Financing Scenario #3)**

The accommodation and sharing of risks is judged only fair in this case because the public sector is called upon to undertake a substantial proportion of the overall risks. Private sector financing—approximately 50% in this case—is judged fair, and again *assumes that this level of private sector financing proves to be financially feasible*.[1] Business effectiveness and efficiency is judged to be good, again because the four sub-criteria appear to be satisfied by this arrangement.

d) **Public sector takes responsibility for land acquisition, infrastructure and civil works, and some technology costs (c.f. Financing Scenario #4)**

The accommodation and sharing of risks is judged poor, partly because the public sector portion of financing is high. Moreover, the components of the project which would fall to the public sector to finance (e.g., land acquisition, civil works) are intrinsically more risky than the components which the private sector would finance (e.g., train sets).[2] The extent of private sector financing is rated fair (28% in this case). While the Price Waterhouse financing plan appears to maximize the extent of possible private sector financing, the resulting private sector share remains somewhat modest. Business effectiveness and efficiency would be good assuming the governance and management structure proposed.[3]

One further characteristic of this option must also be considered. The financing plan in the Price Waterhouse report, while maximizing the extent of possible private sector financing, effectively precludes any possibility of competitive bidding in granting the HSR franchise.[4] The economies normally associated with competitive bidding would therefore be foregone, at least in substantial part.

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[1]*The financial analysis conducted by Price Waterhouse of these specific HSR projects reveals that Option ii c) would not be financially feasible.*

[2]*See Chapter VI—"Major Project Requirements and Associated Risk Factors.*

[3]*See Price Waterhouse Report—Appendix 10, Chart 3.*

[4]*See "Granting the HSR Franchise," p. 104 of Chapter IX.*

e) **Public sector responsible for all fixed plant (c.f. Financing Scenario #4)**

The accommodation and sharing of risks is judged poor in this option because a very large majority of the risk would be sustained by the public sectors. Similarly, private sector financing—18% in this case—is considered poor. Business effectiveness and efficiency is judged fair, the only limitation being problems which could arise in maintenance standards and practices for fixed plant owned by the public sector, but maintained by a private sector operator.

iii) **Wholly public sector entities**

a) **New Crown corporations**

Both of the sub-options considered under this heading are rated poor on all three criteria, largely because the public sector is called upon to sustain all of the risks, provide all of the financing, and to conduct the entire operation.

b) **Existing Crown corporations**

Similar to options considered under iii a), above, existing Crown corporations were rated poor on all three criteria for essentially the same reasons as stated above. In the case of VIA Rail, there is certainly a desire on the part of VIA to be deeply involved in HSR, but VIA itself does not appear to be an appropriate vehicle to undertake the entire HSR project. As to CN, we previously noted CN has both relevant skills to contribute, but this would involve a major change and expansion in CN's role. Present government policy appears more oriented toward achieving a fully commercial freight operation rather than expansion into a larger public sector role. The VIA/CN combination is more promising than either VIA or CN by itself, but still suffers from lack of private sector involvement, and full public sector risk exposure.

C. Views of potential participants/stakeholders

As part of our work we consulted with a number of parties who could become participants or stakeholders in the HSR enterprise(s). These included the Class I railways (CN, CP, VIA), equipment manufacturers (ABB, Bombardier) and financial institutions[1].

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[1] *We also consulted with representatives of the Ontario, Québec and Federal governments, but their views are not included above.*

The views of these parties add a further dimension to the evaluation of the various institutional options.

The views and statements of each party have been treated as confidential. Accordingly, the following text summarizes the relevant comments by topic. While a variety of views and interests were articulated, there was a considerable degree of consistency in many of the responses.

1. Institutional arrangements

All potential participants proposed some form of public/private partnership as a preferred arrangement. In most cases, the government role was seen as including planning, approvals, land acquisition, grade separations and earthworks/drainage (i.e., Option ii c)). Several parties considered the "public utility" option as most attractive (i.e., Option ii d)).

Two participants were strongly in favour of a private sector owner-builder-operator entity which would have a commanding role in the design, construction, commissioning and operation of the HSR system.

2. Financing

Generally speaking, there was very little interest shown by most of the potential participants in any significant involvement in financing HSR. At least half of the parties stated flatly that they had no interest in becoming involved in financing.

Consistent with the preference for public/private partnership arrangements, all participants envisaged governments providing a substantial portion of the required financing. For example, all parties saw governments providing the land and grade separations, and most would also look to governments to provide the earthworks and drainage. In sum, most parties would look to government to provide 50% or more of the required funding.

It was difficult to obtain any definitive statements from Canadian financial institutions; indeed it was difficult even to arrange a consultation on the subject of financing HSR. However, the very limited response we did receive has led us to conclude that Canadian banks will probably be highly restricted in the kinds of financing they will entertain, and will likely look to government guarantees as security for loans they might advance (e.g., construction loans).

3. Stakeholder's desired roles

The desired roles of the participants varied considerably, reflecting their particular interests. The range of roles included manufacturing and possibly maintaining the train sets; construction, maintenance and operation of the fixed plant; operation and maintenance of the HSR system; and the complete design-building-operation of the HSR system (in a builder-owner consortium).

4. Other comments

Two parties expressed concern that government policy regarding competing modes of transportation and provision of infrastructure needed to be resolved in such a way as to reduce the risks of building HSR. Comments were also made on existing problems with railway tax burdens (particularly fuel taxes and municipal property taxes).

D. Evaluation–summary

Taking into account both our evaluations against the established criteria, as well as the views of potential participants/stakeholders, it is evident that the public/private partnership options represent the only alternatives which can be considered for practical purposes. Of these, only Option ii d) is feasible for the HSR system(s) under study here. However, this option is rated marginal, at best.

The financial analysis does confirm (indirectly), that the institutional option ii e) "Public Sector Responsible for All Fixed Plant"[1] would be financially feasible. That is, the private sector would be able to finance the operating equipment and operate the service, and would be able to pay a fee for use of the fixed plant. However, this would not alter or improve the fundamental financial character of the project. In fact, the extent of risk borne by the public sector in option ii e) would be greater than for the two scenarios selected by Price Waterhouse which maximize the extent of possible private sector financing. However, it might be possible to structure this option in a fashion to achieve competitive bidding in granting the HSR franchise, thus gaining the economies deriving from a competitive process.

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[1] *See pp. 82 and 91 for elaboration of this option.*

IX

Elaboration Of Institutional Options And Implementation Considerations

The formulation and evaluation of the institutional options as described to this point is largely at the concept level. In this chapter we seek to elaborate some of the principal features which would in most cases be common to the institutional options identified above as most likely to find acceptance.

A. Major participants' roles

As previously noted, options involving private sector participants envisage an arrangement in which the HSR system "owner" is granted a franchise to build and/or operate the HSR service. Hence the owner/franchisee occupies a central role in the overall HSR enterprise. There are, however, other important roles, as discussed below.

1. Promoters

Promoters are the parties who exercise efforts to bring a project into being. Normally promoters of a HSR system would have a commercial interest in one or more aspects of the project (and might possibly become owners).

While a fully declared promoter of the corridor HSR system may not yet have emerged, it is evident that the HSR rail equipment manufacturers, VIA Rail, and governments all have varying degrees of interest which may lead them to act, at least in part, as a HSR project promoter.

2. Owner/franchisee

The owner/franchisee is the party which eventually takes the initiative and responsibility to build and operate the HSR system. The owner would bring together the various parties essential to development of the HSR system, and would be granted authority to build and operate it. Thus the owner would be extensively involved with governments, engineers, construction contractors, financiers, and appropriate operating entities. In fact, the HSR system operation may be structured as a separate component of the owner/franchisee entity.

As concluded in the previous chapter, public/private partnership options represent the only practical alternatives. The Price Waterhouse report has recommended a public/private partnership option which would consist of two entities as follows:

i) **Public Financing Entity.** The public sector would incorporate a Public Financing Entity, likely a **Crown corporation**, to finance and own the Infrastructure and Civil Works. Once completed, the Public Financing Entity would lease the Infrastructure and Civil Works to the Construction and Operations Company. The Public Financing Entity would obtain its financing from private sector institutional investors.

ii) **Construction and Operations Company.** A Construction and Operations Company would be incorporated under **joint ownership of the private and public sectors** to manage the full scope of the project during the construction and operating periods. This jointly-owned company would raise financing for the equipment and technology costs, and subsequently would operate the HSR services and lease the Infrastructure and Civil Works from the Public Financing Entity.

The composition of the jointly-owned construction and operations company which would spearhead the development of HSR in the Québec–Windsor corridor, is far from evident at this time. Clearly such an entity would require world scale project management and development skills, and must have high credibility with financial institutions. It may also be necessary for the company to have, itself, financial resources if recourse to the owner is demanded by financiers.

The construction and operations company is envisaged to be a share capital business corporation[1]. It is assumed that all members of the company would contribute some equity capital. Additional equity capital would be created through convertible subordinated debentures.

Possible private sector members of an owner/franchisee entity might include the following participants (but probably not all of them):

Construction contractors
Engineers
HSR equipment manufacturers
Other HSR suppliers (e.g., electrical and control systems)
Existing Class I railway(s)
Railway operations/maintenance contractor(s)
Real estate developer(s)
Financial institutions.

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[1] *Possibly this entity might begin life as a limited partnership.*

One or two of the above participants would have to take the lead in structuring and managing the company. This would normally be the partner(s) with the largest potential rewards and/or financial stake in the enterprise. It seems probable, therefore, that the owner/franchisee would be led by a major construction design/contracting organization, with experience in developing world scale projects. Financial institutions and possibly HSR equipment manufacturers may be closely in step with the lead player.

As noted above, the parties which would form an owner/franchisee entity for the corridor HSR system have not yet emerged in Canada. However, a possible precedent has been set in the U.S. by the Texas TGV Corporation, the designated franchisee of a prospective Dallas/Fort Worth–Houston HSR system. The principal member of this enterprise was the Morrisson Knudsen Corporation—a major U.S. engineering and construction company. Other members of the Texas TGV Corporation were Bombardier and G.E.C.–Alsthom. This initiative, however, has been abandoned after the Texas TGV Corporation was unable to arrange financing.

3. Operators

HSR system operation and maintenance is an important component of the HSR enterprise. As noted above, the operating entity is likely to be a part, or subsidiary component of the construction and operations company. The subject of HSR operations is dealt with in further detail below.

4. Financiers

The project financiers would be responsible for raising the private sector capital to be invested in the HSR system. This would constitute a large and probably complex financing undertaking. Most of the private sector capital is expected to be debt provided by various kinds of financial institutions (e.g., insurance companies). To the extent that financial institutions themselves invest equity capital, they would become part of the owner/franchisee entity.

In any event, the financing of the corridor HSR system represents a world scale project. Accordingly, it will probably be necessary to organize an international consortium of financial institutions to handle a project of this magnitude.

5. Government

It is apparent that government would be called upon to play a major part in bringing the HSR initiative to fruition. Governments would play a number of roles, including:

- partners in system development (leading the planning/approvals and land acquisition phases)

- providers of assets (both physical assets—e.g., land, and financial assets)

- guarantors of certain financial instruments (e.g., construction loans)
- part owner of the construction and operations company.

The large involvement of governments in financing the HSR system raises the question of whether governments would, consequently, be *investors* in and/or *subsidizers* of the system. The public/private ownership option recommended by Price Waterhouse would involve governments as both investors and subsidizers. The assumptions made in formulating the institutional options (reference Chapter VII) imply that, for the private sector to achieve its required return on investment, government assets would have to be provided by way of grant with no expected direct financial return, so that governments would in fact be mainly subsidizers of HSR. Presumably the justification for this would be the resultant socioeconomic benefits, and possibly some tax revenues—if these can be shown to be a net increment to government revenues.

The above fact does not, however, absolutely require that governments contribute their assets entirely as lump sum grants in the early stages of the project development, although such an arrangement would probably be favoured by the private sector investors. An alternative would be for governments to contribute part or all of their assets by way of an annual subsidy to the system—i.e., similar to the arrangement proposed for the P.E.I. fixed link crossing. This arrangement would keep the public and private sector more at arms length, and could encourage efficiency and effectiveness. It would also put HSR on a basis where government subsidies would be more easily comparable to public support of other transport modes.

The Price Waterhouse report recommends a similar approach. Infrastructure and civil works costs would be financed by private sector institutional investors in the form of Infrastructure and Civil Works Notes. This obligation would be serviced by a government guaranteed annual Infrastructure and Civil Works Subsidy, commencing in the first full year of operations, that would be designed to fully repay the Infrastructure and Civil Works Notes over a period of thirty-five years.

B. HSR operations

Operation and maintenance of the HSR system is, by itself, a major undertaking. As it seems unlikely that an existing or conventional railway company will take a lead role in the owner/franchisee entity, it is necessary to consider how the operations and maintenance functions would be performed, and by whom.

1. Operations and maintenance (O&M) functions

The following O&M functions are involved.

Train operations
Train control
On-board services (including catering and commissary)
Reservations, ticketing and customer service
Sales and marketing
HSR equipment maintenance
Fixed plant maintenance
Management and administration of all of the above.

To achieve its full potential, the HSR system must provide a highly reliable, comfortable and pleasing travel experience. Accordingly, all of the above functions must be performed with excellence.

2. Who would operate and maintain HSR?

There are numerous combinations of participants who could, collectively, form an effective HSR O&M unit. Potential participants, and their possible roles are listed below.

- VIA Rail Canada Inc. (all functions except fixed plant maintenance).
- An existing HSR operator—e.g., SNCF—(all functions, but probably restricted to train operations and passenger services).
- Airlines—e.g., Air Canada, Canadian Airlines (on-board services, reservations, ticketing, customer service, sales and marketing).
- Canadian freight railways—e.g., CN and/or CP (fixed plant maintenance, train operations, train control, possibly some passenger service functions).
- HSR equipment manufacturers (HSR equipment maintenance).
- New ventures specifically formed to conduct some or all of the O&M functions.

Given the absolute need to achieve fail proof performance, proven experience and capability will be at a premium. The owner/franchisee will therefore probably opt for participants with a track record of success in the HSR functions, or in very similar functions. For example, an existing airline-style reservation system with full linkages to other travel services, and fully capable of supporting yield management would probably be adopted rather than developing a new, proprietary

system from scratch. Again, involvement of HSR equipment manufacturers in the equipment maintenance function—at least in the early years of operation—would seem prudent if not necessary.

Ultimately, the owner/franchisee would select the participants and develop an O&M unit based on the most favourable arrangements which come forward.

3. VIA Rail Canada Inc.

The potential role of VIA in HSR O&M functions deserves special attention in this report. VIA has publicly declared their strong interest in being the operator of any HSR corridor system[1]. Indeed, given that a HSR service would replace most or all conventional rail service in the corridor, VIA considers that their raison d'être would be substantially eroded should VIA not be the HSR operator.

It is certainly true that VIA is the only company in Canada with extensive, up-to-date experience in rail passenger operations[2]. It is also true that VIA has established a credible track record of service, at least in their corridor operations[3]. Moreover, VIA is actively pursuing reduced time in transit in their corridor operations, and now operates trains on four-hour schedules between Montreal and Toronto. VIA is planning further, incremental corridor service performance improvements.

In the U.S., Amtrak is also positioning itself to be the operator of HSR systems[4]. Amtrak already operates a moderately high-speed rail service (the 125-mile per hour "Metroliner") in the northeast corridor, and plans to upgrade performance with new, faster equipment. Amtrak has been designated as the operator of a small maglev system being planned for the Orlando area, and was seeking a similar role

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[1] *As evidence of such interest, VIA has conducted two extensive studies of HSR in the Corridor—the first in 1984 and the second in 1989.*

[2] *Several Class II railways operate smaller scale, intraprovincial passenger services in Canada.*

[3] *"During the past few years VIA has established the credibility as a successful, reliable and efficient passenger carrier with the highest level of customer acceptance and on-time performance in North America. Surveys show that in 1992 VIA met or exceeded the expectations of 94% of our Corridor customers, 90% felt they received good value for money and 92% would recommend VIA to their friends and relatives. Our on-time performance in the Corridor increased from 87% in 1989 to 90% in 1992."—VIA submission on institutional options, dated February 4, 1993 to KPMG.*

[4] *"We intend aggressively to pursue opportunities to design, build, operate and maintain new high-speed systems. While our ability to help fund the cost of these systems is strictly limited, our goal is to be the high-speed rail operator of choice in this country."—Testimony of W. Graham Claytor, Jr., President and Chairman of the Board, National Railroad Passenger Corporation (Amtrak) before the Subcommittee on Transportation and Related Agencies Appropriations, U.S. Senate—March 4, 1993.*

in the Texas TGV project. It is probable, therefore, that Amtrak will become a significantly player in HSR in the U.S., to the extent that HSR systems develop there.

VIA believe that they are in a position to contract with the HSR owner/franchisee to conduct all of the HSR O&M functions. However, in so doing, VIA would subcontract a few of these functions (e.g., catering, fixed plant maintenance).

VIA make the following case[1] for becoming the corridor HSR operator.

> *i) VIA is the only experienced operator of an intercity rail passenger system in Canada. It has the staff experienced in passenger rail marketing, on-train customer services, off-train customer services, and passenger rail rolling stock maintenance. A new operator would take a long time and incur a high cost to develop this know-how; it took a long time for VIA.*
>
> *ii) There are valuable synergies to be gained from having one company operate both conventional and HSR services. VIA would ensure convenient connections between conventional and high-speed trains so that passengers are not inconvenienced. Also, personnel and facilities could be shared between HSR and conventional services, resulting in cost efficiencies. This would be particularly important assuming a phased introduction of HSR in which the Montreal–Ottawa–Toronto segment would be built first.*
>
> *iii) VIA's labour costs would be competitive.*
>
> *iv) VIA's overhead cost for HSR would be as low or lower than any other organizations.*
>
> *v) VIA owns assets which would permit it to be efficient and competitive. For example, VIA owns well maintained, modern maintenance facilities in Montreal and Toronto which were designed to handle high-speed rail rolling stock; as well, VIA owns station facilities and rights-of-way that could form part of an HSR network.*
>
> *vi) HSR planners will need input from the operator: VIA would provide such input based on its experience and its knowledge of the corridor.*

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[1] *Adapted from VIA's submission on Institutional Options, dated February 4, 1993 to KPMG.*

In addition, VIA argue[1] that there would be negative consequences should VIA not become the HSR operator.

> *i) Having one company operate HSR and another operate conventional trains would be less efficient because the overhead cost carried by the two organizations would be higher than it would for a single, efficient operator.*
>
> *ii) Convenient passenger transfers between Montreal–Ottawa–Toronto trains and connecting trains might be jeopardized (15 to 20 per cent of passengers on the southwestern Ontario, Montreal–Québec and eastern long distance trains transfer to Montreal–Ottawa–Toronto trains).*
>
> *iii) VIA would incur costly layoff and reorganization expenses.*
>
> *iv) The HSR operator would be chosen five to ten years before HSR's inauguration. During this period, morale among VIA employees would deteriorate, good employees would leave and the cost and quality of conventional train services would suffer. In fact, the future of the conventional services would be in jeopardy, and their demise could negatively affect revenues of the HSR system. Conversely, the higher the rail ridership before HSR starts up, the higher the HSR ridership is likely to be.*

Our consultations with other potential participants generally revealed acceptance of VIA as a good candidate for at least some of the O&M functions. However, these stakeholders consider that VIA should be prepared to bid or compete for the O&M functions they wish to provide, rather than being anointed with this role from the outset. In addition, some reservations were expressed concerning VIA's close ties to government, and the ability of ministers to influence VIA's affairs.

VIA, in turn, stated that they are fully prepared to compete for the O&M functions, and are confident of their ability to emerge successful in any such competition.

We believe that there are strong arguments to consider VIA for some, if not all of the HSR O&M functions. However, it is important that any such arrangement be developed through negotiation with the HSR owner/ franchisee, and should involve whatever degree of competition may practically be introduced in such negotiations.

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[1] *Idem.*

In addition, we consider it desirable for VIA to create some separation between their HSR unit and the balance of the VIA establishment. The rationale for such a separation is two-fold:

- In order to be in harmony with the owner/franchisee, VIA's HSR unit should be a commercial, profit-oriented entity.
- Government influence and interference with the HSR unit must be minimal.

The above separation can be achieved in a number of ways. Perhaps the most logical option is to establish a subsidiary HSR company with a separate, commercially oriented Board of Directors, which could include representatives of the HSR owner/franchisee. The VIA HSR company would have its own employees conducting the O&M functions, and could contract with the VIA parent organization for certain administrative and corporate functions (e.g., accounting and payroll; legal services).

C. Mechanisms for public/private partnerships

Our evaluation of institutional options revealed that public private partnership arrangements are the only options which can be practically considered for a corridor HSR project, and that significant public sector funding would likely be required. As a further elaboration of possible institutional arrangements, several mechanisms which may be used in the public private partnership are outlined briefly below.

1. Build–own–operate–transfer (BOOT)

The BOOT concept has been successfully used in a number of public service projects which were developed by private sector enterprises. Examples include the Eastern Harbour Crossing in Hong Kong, Eurotunnel, coal-fired power plants in Turkey, and the Thames River Crossing at Dartford, England. The prospective P.E.I. fixed link crossing is also being developed under BOOT arrangements.

BOOT involves the granting of an exclusive concession to an owner/ franchisee who develops and operates the project for a fixed number of years (probably at least thirty years in the case of HSR), following which the system and all of its assets is transferred back to the public sector. At this point government(s) can contract the operation to a new contractor, or back to the original contractor, may operate the system themselves, or may retire the project.

BOOT provides a mechanism whereby public sector investments can ultimately be reclaimed by the public after the period of years required for private sector investors to realize upon and recover their investment. Given the expected substantial public sector funding in HSR, the BOOT model would appear to be a suitable vehicle for the corridor project.

2. Service contracts

Service contracts are perhaps the most common vehicle for private sector participation in public sector projects. Service contracts involve the provision of specified quantities of service or work for specified prices and time frames. HSR operations and maintenance functions provide numerous opportunities for negotiation of service contracts. Indeed, it would be VIA's intention to enter into a service contract embracing all of the O&M functions.

3. Turnkey projects

Turnkey construction is another concept, somewhat akin to BOOT, by which public sector agencies can involve private sector participants. In the turnkey model, a public agency contracts with private sector interests to build and commission a facility for a specified price in accordance with specified standards. A turnkey contract may also involve operation of the facility for a period following its completion.

A number of the HSR system's major components might be provided by way of turnkey projects—including the train sets and the electrical system. In this case, the owner/franchisee could well be the immediate party contracting for the turnkey facility.

D. Implementing the institutional arrangements

In this final section we provide some guidance on the manner in which the proposed institutional arrangements may be brought into being. All of this assumes that governments decide in favour of proceeding with the HSR corridor project, and that there is a satisfactory response from the private sector to support the initiative.

1. HSR Authority

A purpose-built public agency will be required to breathe life into the HSR undertaking, and to guide and control its development. This might be termed the "Central Canada HSR Authority."

The Authority would be a creation of the federal, Ontario and Québec governments, and as such might be seen as an extension (albeit a major expansion) of the present tripartite government project. The Authority would be responsible for most of the

public sector roles. For example, in the planning and approvals phase the Authority would determine the routing, station locations and overall level of service. It would also take primary responsibility for obtaining all of the necessary approvals, including environmental approvals. It would also probably be responsible for land acquisition. The Authority would be deeply involved in the public sector funding or as described earlier, this role could be undertaken by the Public Financing Entity either as part of, or separate from the Authority.

A most important function of the Authority would be selection of an owner/ franchisee, and the granting of the franchise.

2. Policy and legislation

In proceeding with the HSR project, governments would need to resolve a number of policy issues. The development of a coherent intermodal policy would be of first importance. This issue is discussed in considerable detail in Chapter II (see pages 52 to 54), and we recite below the essence of this important policy matter.

> *It is doubtful that the maximum amount of private sector funding will be forthcoming absent an intermodal policy and legislative structure that can assure that the inevitable substantial taxpayer support for competing modes is similar when measured on the basis of support per unit of capital plant or per unit of service output.*
>
> *It will also be necessary to ensure, within reasonable bounds, that the extent of taxpayer support and government regulatory burden and costs affecting competing modes; (1) can be reasonably anticipated; (2) can be expected to comparable to that to which the high-speed rail business will be exposed; and, (3) at the very least would not undermine the ability of the high-speed rail project to compete in markets where it is relatively efficient.*

A number of stakeholders commented on the need to resolve the above issue. The taxation of transportation enterprises, including the taxation of HSR, present related policy issues.

As explained in Chapter II, special legislation is not absolutely necessary for HSR, but may be desirable on policy grounds. The legislation could crystallize stages in state funding support in a manner which is potentially more public accountable than through private financing agreements. It could also provide a mechanism to codify intergovernmental and environmental arrangements. It could also address some aspects of the intermodal policy concern described above.

Finally, special legislation may well be needed to establish the Central Canada HSR Authority—its mandate, powers, and modus operandi.

3. Granting the HSR franchise

Granting the HSR franchise would be perhaps the most demanding requirement of the Authority. The franchise must be awarded in a fashion so as to produce the best results for the public's investment, and so as to establish limits on the risks which governments would be called upon to sustain.

We believe that serious consideration should be given to a competitive bidding process in awarding the franchise. Should governments decide to proceed with a HSR project, several equipment manufacturers may come forward, around which competing owner/builder consortia may form. For example, in the case of the 300+ km/hr technology, the French TGV, German ICE, Italian Pendolino, and possibly Japanese suppliers may wish to bid.

In a competitive bidding process the Authority would establish an extensive range of system performance and quality specifications, as well as other matters such as minimum Canadian content guidelines. The responsibility of the Authority to provide approvals and certain assets (e.g., land, grade separations) would be defined. The competition would then be based upon the most favourable financial arrangement presented by the competitors[1].

The above process would appear to be the ideal arrangement for granting the franchise, and would likely result in the best value for money to the public. It is not certain, however, that such a process will prove workable for practical reasons. For example, in a project of such scale it might not be possible for more than one consortium to form with the required Canadian content.

As explained in our evaluation of institutional options,[2] the specific financing arrangements embodied in the financial analysis of the HSR alternatives examined in the Québec/Ontario High Speed Rail Project would, in fact, preclude the possibility of competition in granting the franchise.

Should a competitive process prove impractical, the Authority would revert to negotiation of a directed contract with a designated owner/franchisee. Clearly the terms of such a franchise would have to be negotiated with great skill and care.

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[1] *This process is similar to the process employed in granting the P.E.I. fixed link contract.*

[2] *See Chapter VIII, p. 90.*

Appendix A

Canadian Railway Unions

Canadian Railway Unions

	Name	Description
1.	The Brotherhood of Locomotive Engineers (B.L.E.)[1]	An international union representing locomotive engineers and hostlers employed by CN, CP, and VIA.
2.	The United Transportation Union (U.T.U.)[1]	The U.T.U. is headquartered in Ottawa, Ontario, and represents conductors, assistant conductors, trainmen, yardmasters, yard foremen, and yardmen employed by CN, CP, and VIA.
3.	National Automobile, Aerospace & Agricultural Implement Workers Union of Canada (CAW–Canada).	A Canadian union which succeeded the former Brotherhood of Railway Carmen (B.R.C.). In June of 1994, CAW–Canada became the sole representative of all the former shop craft unions at CP, CN and VIA.
4.	Canadian Brotherhood of Railway, Transport and General Workers (C.B.R.T. & G.W.)[2]	A Canadian union with headquarters in Ottawa, Ontario. The Brotherhood represents clerks and other classes of employees employed by CN and on-board and off-board employees of VIA Rail. They do not represent CP Rail employees.

[1] *The B.L.E. and the U.T.U., although still legally separate unions joined together to form the Canadian Council of Railway Operating Unions (C.C.R.O.U.). The C.C.R.O.U. was certified by the Canadian Labour Relations Board in August of 1993 to consolidate representation and negotiations for the Running Trades.*

[2] *This union is still a separate union but has joined with CAW–Canada for negotiating purposes only.*

	Name	Description
5.	Transportation Communication International Union (T.C.U.)	An international union representing clerks and other classes of employees at CP Rail. They also represent a small number of CN employees. They do not represent VIA Rail employees.
6.	Brotherhood of Maintenance of Way Employees (B.M.W.E.)	An international union representing employees who maintain track and buildings on both CN and CP. There are a small number of employees represented by the Brotherhood and employed by VIA in the maintenance of stations and other VIA buildings.
7.	Railroad Signalmen represented by a division of the International Brotherhood of Electrical Workers Council (I.B.E.W. #11)	The signalmen maintain railway signal equipment and train radios on both CN and CP. VIA does not employ signalmen.
8.	Rail Canada Traffic Controllers (R.C.T.C.)	A Canadian union headquartered in Winnipeg, Manitoba, representing train dispatchers, train controllers, and operators employed by CN and CP. VIA does not employ this type of employee.
9.	International Association of Machinists and Aerospace Workers (I.A.M.)[3]	An international union representing machinists, machinists' helpers, and apprentices employed by CN, CP, and VIA. In addition, for VIA only, this union represents boilermakers and sheet metal workers.
10.	International Brotherhood of Electrical Workers (I.B.E.W.)[3]	An international union representing electricians, electricians' helpers, and apprentices employed by CN, CP, and VIA.
11.	United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada (U.A.J.A.P.)[3]	An international union representing pipefitters' helpers, and apprentices employed by CN, CP, and VIA.

12.	Sheet Metal Workers International Association (S.M.W.I.A.)[3]	An international union representing sheet metal workers, sheet metal workers' helpers, and apprentices employed by CN and CP. This union does not represent employees of VIA.
13.	International Association of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers (I.B.B.)[3]	An international union representing boilermakers, boilermakers' helpers, and apprentices employed by CN and CP. This union does not represent employees of VIA.
14.	International Brotherhood of Firemen and Oilers (I.B.F. & O.)[3]	An international union representing hostlers, hostlers' helpers, and labourers employed in CP motive power shops. They do not represent similar classifications on CN or VIA.
15.	Canadian National Railway Police Association (C.N.R.P.A.)	A Canadian Association representing a small number of Railway Police employed by CN. VIA does not employ their own railway police force.
16.	Canadian Pacific Police Association (C.P.P.A.)	A Canadian Association representing a small number of Railway Police employed by CP.

[3]*The Canadian workers of this union are now represented by CAW–Canada.*