

**Council of Ministers Responsible for Transportation and Highway Safety**

**National Highway System Review**

**Task Force Report**

**September 22, 2005**

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## **Executive Summary**

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Canada's National Highway System (NHS) was established in 1988 as a result of a federal-provincial-territorial cooperative study of the state and investment needs of key interprovincial and international highway linkages.

In 2004, a review and refinement of the criteria used to identify the NHS was undertaken by Transport Canada, which resulted in a proposal to add additional routes to the system. In September 2004 the Council of Ministers Responsible for Transportation and Highway Safety approved the proposed additions, and directed that a further review be undertaken of the National Highway System, using a criteria based approach like that employed by Transport Canada.

The Council also agreed that projects which involve significant rehabilitation of pavements and structures should be eligible for cost sharing, and directed that definitions be developed which would allow rehabilitation projects to be distinguished from maintenance activities on pavements and structures.

A Task Force was formed to address these issues, with participation by all federal, provincial and territorial transportation departments.

A detailed review of the NHS route network was undertaken to verify the accuracy and consistency in reporting of route and segment lengths. As a result, the length of the NHS was established at 27,002 kilometers, including the network identified in 1988 and the additions approved in September 2004.

A review of the approach used by Transport Canada in 2004 to apply eligibility criteria and thresholds was also undertaken. Additional information on a number of candidate routes was obtained, to support re-application of the criteria. This new analysis resulted in 8 additional routes (98 km in total) being identified as "anomalies" and deserving of inclusion in the 2004 NHS additions.

A review by the Task Force of linkages from the NHS to intermodal facilities and international border crossings was also undertaken to improve the consistency of the intent and approach first used in 1988. Specific eligibility criteria were developed and applied, resulting in identification of a number of additional routes in these categories, with an aggregate length of 508 km, for inclusion in the NHS.

The criteria based review of the National Highway System was pursued and developed, resulting in a proposal for a system comprised of three categories of routes:

### **Core Routes**

- Key interprovincial and international corridor routes (the original 1988 NHS routes, the September 2004 additions, anomalies to the 2004 additions, and links to key intermodal facilities and major border crossings which connect with "core" routes)

### Feeder Routes

- Key linkages to the Core Routes from population and economic centres (including links to intermodal facilities and significant border crossings)

### Northern and Remote Routes

- Key linkages to Core and Feeder routes that provide the primary means of access to northern and remote areas, economic activities and resources.

Eligibility criteria and thresholds were developed for each of these categories, and were used to evaluate candidate routes proposed by provinces and territories. The evaluation resulted in a proposal for a restructured and expanded National Highway System, as follows:

<b>Jurisdiction</b>	<b>Core Routes</b>	<b>Feeder Routes</b>	<b>Northern and Remote Routes</b>	<b>Total</b>
Yukon	1079 km	-	948 km	<b>2027 km</b>
Northwest Territories	576 km	-	847 km	<b>1423 km</b>
Nunavut	-	-	-	-
British Columbia	5861 km	447 km	724 km	<b>7032 km</b>
Alberta	3970 km	217 km	197 km	<b>4384 km</b>
Saskatchewan	2450 km	-	238 km	<b>2688 km</b>
Manitoba	982 km	742 km	370 km	<b>2093 km</b>
Ontario	6131 km	706 km	-	<b>6836 km</b>
Quebec	3448 km	766 km	1436 km	<b>5649 km</b>
New Brunswick	993 km	832 km	-	<b>1825 km</b>
Prince Edward Island	208 km	188 km	-	<b>396 km</b>
Nova Scotia	903 km	296 km	-	<b>1199 km</b>
Newfoundland and Labrador	1008 km	298 km	1163 km	<b>2469 km</b>
Total	<b>27608 km</b>	<b>4490 km</b>	<b>5922 km</b>	<b>38021 km</b>

A criteria-driven approach has the merit of introducing rigor in the determination of routes to be added to the NHS. The rigorous application of the criteria developed and agreed by the Task Group led to the acceptance or rejection of routes submitted by jurisdictions. The information received from jurisdictions, and the intent behind the Task Group consensus on criteria, were instrumental in developing the final recommendations for routes proposed for inclusion in the three NHS categories.

A number of outstanding issues were identified and proposed for further consideration, including:

- pursuit of consensus on the significance of major corridors within the larger metropolitan centres in support of national economic and mobility goals
- consideration of “performance characteristics” and minimum service standards for the restructured National Highway System concept, which encompasses three categories of routes, with a wide range of operating environments

- conduct of more regular reviews of the National Highway System in the future to consider changes in the NHS route inventory, or route categories, using the established eligibility criteria

## 1. Context

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In September 2004 the Council of Ministers endorsed the following resolution:

*The federal government, provinces and territories agree to proceed with an important review of the National Highway System (NHS), including the following points:*

- *Ministers recognize the opportunity to have a two-tier system to respond to new and diverse needs resulting from changes in the economy and the need for more flexibility in the implementation of the system.*
- *Ministers agree to immediately add 2,718 kilometers of new routes to the existing first tier of the NHS.*
- *Ministers are establishing a working group that will:*
  - *quickly develop criteria to identify routes to be included in tier 2;*
  - *define criteria to identify bridge and pavement structural rehabilitation work for tier 1 and tier 2 routes;*
  - *submit its report by March 31, 2005, at the latest*

A Task Force was formed by the Council of Deputy Ministers in October to address these issues, jointly Chaired by Mr. Roger Roy from Transport Canada and Mr. Doug Johnson from the New Brunswick Department of Transportation, with participation from each of the federal, provincial and territorial transportation departments.

Through the period from October 2004 to March 2005, the Task Force met on four occasions, and convened conference calls at regular (generally weekly) intervals to monitor the progress of the work.

## **2. National Highway System Review Task Force Membership**

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**Co-Chairs:** **Roger Roy**  
Transport Canada

**Doug Johnson**  
New Brunswick Department of Transportation

**Secretary:** **John Pearson**  
Council of Deputy Ministers Secretariat

**Members:** **Bob Leore, Mayank Rastogi & Ralph Jones**  
Transport Canada

**Jon Conquist**  
British Columbia Ministry of Transportation

**Jack Phelps & Vince Wu**  
Alberta Infrastructure and Transportation

**Les Bell**  
Saskatchewan Highways and Transportation

**Amar Chadha**  
Manitoba Transportation and Government Services

**Alan Stillar, Noris Bot & Bill Rhamey**  
Ontario Ministry of Transportation

**Pierre Leblond, Évangéline Lévesque & Pierre Beaudoin**  
Ministère des Transports du Québec

**Margaret Grant-McGivney**  
New Brunswick Department of Transportation

**Ralph Hessian**  
Nova Scotia Department of Transportation and Public Works

**Paul Godfrey & Foster Millar**  
Prince Edward Island Transportation and Public Works

**Cluney Mercer**  
Newfoundland Department of Works, Services and Transportation

**Bob Magnuson**  
Yukon Department of Highways and Public Works

**Jim Stevens**  
Northwest Territories Department of Transportation

**Methusalah Kunuk**  
Nunavut Department of Economic Development and Transportation



### 3. Background

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#### a) Development of Canada's National Highway System

The concept of a National Highway System for Canada arose in 1986 at a national symposium on the state of the nation's highway system organized by the Roads and Transportation Association of Canada. Participants in the symposium endorsed a resolution calling upon the federal, provincial and territorial governments to work together to define a National Highways Policy that would:

- establish future needs and define standards for the Canadian primary highway system;
- establish the benefits and costs of meeting those needs;
- establish funding alternatives for meeting those costs, with a view to recommending adoption of this policy by their governments

The resolution was presented to, and received support from, the Council of Ministers Responsible for Transportation and Highway Safety in September 1987. In February 1988 a cooperative study was launched to address the issues raised, led by a Task Force of representatives from the federal, provincial and territorial transportation departments. The study was structured in four phases:

Phase 1: Definition of the National Highway System

Phase 2: Economic Evaluation of the Benefits and Costs of the National Highway System

Phase 3: Funding Alternatives

Phase 4: Development of Options for a National Highways Policy

#### i) Identification of a National Highway System 1988 - 1992

In September 1988 the Task Force report on Phase 1 was presented to the Council of Ministers, and offered the following objectives for a National Highway Policy:

- to ensure that all regions of Canada are provided with adequate and required levels of service, safety and efficiency in highway transportation
- to provide proper and necessary emphasis and predictable support by levels of government to the NHS
- to serve and enhance interprovincial and international trade, travel and industry and promote Canadian competitiveness
- to bring cohesiveness and uniformity of standards to the major highway transportation linkages of national significance
- to meet growing regional transportation needs and address deteriorating highway conditions through sustained improvement programs
- to preserve and protect the substantial capital already invested by Canadians in what constitutes the backbone of the Canadian highway system

In this context, the report identified, and proposed adoption of, a National Highway System comprising 24,459 kilometres of existing interprovincial and international linkages based on the following criteria:

*Existing, primary routes that provide for interprovincial and international trade and travel by connecting as directly as possible a capital city or major provincial population/commercial center in Canada with:*

- another capital city or major population or commercial center*
- a major port of entry or exit to the USA highway network*
- another transportation mode served directly by the highway mode*

While the proposed National Highway System received endorsement, a supplementary listing of “Resource and Recreation Routes” (~ 7,800 km) was also identified for consideration as potential future additions to the NHS, in response to concerns raised by several Council members:

*“While primary arterial routes can be recognized in the national context by the application of appropriate population, economic activity or transportation function criteria, the emerging importance of routes to major resource and recreation areas should be considered within a highway policy study. These resource and recreation routes currently provide a transportation service of sizable regional significance and can be expected to play a major role in the nation’s economic development.”*

The report also included proposed minimum desirable “performance characteristics” for routes on the National Highway System, in recognition of the important role they play in support of the economy, and in the provision of safe and efficient interprovincial and international transportation. It was offered that routes on the National Highway System should:

- provide a minimum operating speed of 90 km/hr.
- be capable of providing all weather service, with no seasonal load restrictions, and be capable of carrying the national standards for vehicle weights and dimensions.
- provide a riding comfort index (RCI) of 6.0 or greater, or the equivalent rating using other measurement systems.

Phase 1 of the National Highway Policy for Canada Study concluded with the following:

- There exists a network of key interprovincial and international highway routes which are of vital significance to the national transportation system and the Canadian economy.
- That these routes will collectively constitute the National Highway System.
- That in the interests of enhancing the safety and efficiency of the National Highway System, the routes should meet the minimum standards for design, construction and operation.
- That the resource and recreation routes identified not be included in the National Highway System at present, but be prime candidates for consideration should the Council of Ministers expand the system in the future.

Subsequent phases of the study (from 1988 to 1992) addressed:

- the impacts on Canada's economy of undertaking an NHS upgrading program
- the benefits to highway users of an upgraded NHS

- the approaches used by other countries to manage and fund their highway systems in general, and their National Highway systems in particular
- the reaction of industrial sectors to the need for a National Highway System
- potential funding, cost sharing and implementation mechanisms for a National Highway Policy

No changes were made to the routes contained in National Highway System through the course of the study. Reports on each of the Phases were presented to the Council of Ministers, and were published and made available to interested parties.

### **ii) National Highway System Update – 1998**

In June 1997 the Council of Ministers directed that work be undertaken to provide updated information on the condition, needs and economic implications of the National Highway System. The study used the 1988 NHS network as the basis for updating the condition of the route inventory, the costs of upgrading to achieve the minimum “performance” standards, and for assessing the benefits which would be attributable to upgrading the system. While no changes were made to the NHS routes included in the review, small corrections to the lengths of some routes resulted in an updated NHS network length of 24,373 kilometers.

A report on the work was presented to the Council of Ministers in September 1998, and was subsequently published and released.

### **iii) Strategic Economic Highway System - 1998**

At the request of Québec, in 1997 work also began on the concept of a Strategic Economic Highway System, based on the premise that national and regional economies were dependent on support from by a broader network of highways than represented by the NHS.

The Task Force report on this concept offered the following criteria for identification of a Strategic Economic Highway System:

- The 1988 National Highway System criteria, plus
- serve centers of significant economic importance, including:
  - major manufacturing or processing sites
  - transportation hubs, intermodal facilities (eg. seaports, airports, rail terminals)
  - major recreation areas (eg. parks)
  - major existing resource extraction or processing areas (eg. mines, forestry, electric power generation sites, fisheries centers)
  - proven future resource centers
- provide network continuity between routes that meet the above criteria:

Using these criteria, the Task Force report identified an additional 42,000 km of existing or planned highways to supplement the 25,000 km National Highway System. The report on this work was presented to the Council of Ministers in May 1998, but was not endorsed, and consequently not published or released.

#### **iv) National Highway System Review – 2003/04**

In September 2003 the Council of Deputy Ministers directed that the route network identified as the National Highway System be reviewed to determine whether reapplication of the original eligibility criteria developed in 1987 would support including additional existing routes in the system. Each jurisdiction was invited to reapply the criteria to their road network and prepare a submission on the outcome, for review and discussion by a federal/provincial/territorial Task Force.

A report on the outcome was presented to the Council of Deputy Ministers in April 2004. The report identified an additional 10,800 km of roads (existing highways, connections to intermodal facilities and connections to border crossings) for consideration as potential additions to the designated National Highway System. The Task Force report was not endorsed due to concerns raised with the “qualitative” nature of the assessment and with the consistency of application of subjective criteria.

#### **v) Transport Canada “Due Diligence Review” – 2004**

In April 2004 Transport Canada provided a presentation to the Council of Deputy Ministers on the results of a feasibility study it had undertaken to develop and apply quantitative criteria which would be consistent with the intent of the subjective NHS criteria developed in 1988.

The study proposed that additions to the National Highway System be based on evaluation of existing routes which connect to:

- 1) Capital cities
- 2) Major provincial population centres representing population of at least 50,000 with an urban core representing at least 50% of this total, or urban area of at least 5% of the jurisdiction population
- 3) Economic Activity, based on population adjusted by high average income and with a high incidence of the labour force engaged in tourism
- 4) Major land border crossings with \$2 billion worth of foreign trade (imports and exports) and tourism, carried by the road mode, in 2001 and 2002

Application of these criteria resulted in identification of 2,718 km of new routes as candidates for inclusion in the National Highway System.

The results of this study were presented to the Council of Ministers in September 2004, and the identified new routes were endorsed for inclusion in the National Highway System.

This marked the first and only change in the National Highway System since its designation in 1988.

## **b) Selected International Experience – Criteria for National Highway Systems**

### **i) United States**

Jurisdiction over highways in the United States is quite similar to Canada, with the individual states holding primary responsibility for building, maintaining and operating the majority of the highway network. Dating back to 1916, the Federal government has provided funding support to the states for highway programs construction through a variety of programs.

In this regard, the Federal-Aid Highway Act and Highway Revenue Act of 1956 represented significant landmarks, resulting in creation of a national Highway Trust Fund based on dedication of taxes on motor fuel. The Highway Trust Fund also provided the means and opportunity to pursue construction of the Interstate System.

In 1995 the National Highway System Designation Act was passed, which identified and established a 260,000 kilometer NHS. The network includes the Interstate System and other roads considered to be “important to the nation's economy, defense, and mobility, and represents 4% of the country’s 6.3 million km of highways.

The US National Highway System consists of five parts:

1. Interstate Highway System
  - 70,000-km or 30 percent of the NHS.
2. Other Principal Arterials
  - includes 21 congressionally designated high-priority corridors as identified in ISTEA. (7,200 km.)
3. Strategic Highway Corridor Network
  - the non-interstate portion of the Strategic Highway Corridor Network, or STRAHNET, identified by the Department of Defense in cooperation with DOT (25,000 km).
4. Major Strategic Highway Corridor Network Connectors
  - more than 3,000 km of roads linking major military installations and other defense-related facilities to the STRAHNET corridors.
5. Intermodal Connectors:
  - about 148,000 km of important arterial highways that serve interstate and inter-regional travel and that provide connections to major ports, airports, public transportation facilities, and other intermodal facilities.

Perhaps most relevant to Canada’s current review of it’s NHS, the United States developed and applied a series of criteria for use in identifying Intermodal Connectors deserving of inclusion in the National Highway System (Part 5 above), as follows:

#### **Intermodal Connections - Primary Criteria**

##### Commercial Aviation Airports

- Passengers: scheduled commercial service with more than 250,000 annual enplanements.

- Cargo: 100 trucks per day in each direction on the principal connecting route, or 100,000 tons per year arriving or departing by highway mode.

#### Ports

- Terminals that handle more than 50,000 TEUs per year, or other units measured that would convert to more than 100 trucks per day in each direction.
- Bulk commodity terminals that handle more than 500,000 tons per year by highway or 100 trucks per day in each direction on the principal connecting route.
- Passengers: terminals that handle more than 250,000 passengers per year or 1,000 passengers per day for at least 90 days during the year.

#### Truck/Rail

- 50,000 TEUs per year, or 100 trucks per day, in each direction on the principal connecting route, or other units measured that would convert to more than 100 trucks per day in each direction.

#### Pipelines

- 100 trucks per day in each direction on the principal connecting route.

#### Amtrak

- 100,000 passengers per year

#### Intercity Bus

- 100,000 passengers per year.

#### Public Transit

- Stations with park and ride lots with more than 500 vehicle parking spaces, or 5,000 daily bus or rail passengers, with significant highway access.

#### Ferries

- Interstate/international -1,000 passengers per day for at least 90 days during the year.

### **ii) Australia**

The road network is largely owned, planned and managed by state, territory and local governments. A formal statement of responsibilities for road funding and management was agreed in the 1991 Inter-governmental Road Funding Agreement. Under this agreement:

- the Commonwealth has sole financial responsibility for construction and maintenance of the National Highway System (NHS);
- state and territory governments have responsibility for funding the development, maintenance and operation of urban and rural arterial roads;
- local government has responsibility for the local road network.

The NHS was established in 1974, and included 16,300 kilometres of major roads linking the state and territory capitals, as well as highways between Brisbane and Cairns and Hobart and Burnie.

In 1992, the inland routes between Melbourne and Brisbane, and between Sydney and Adelaide were added. In 1994, it was agreed that the city connections between the end points of the National Highway within the mainland capitals would be added to the network, resulting in a continuous national road network, thereby extending the length of the NHS to 18,500 kilometres. National Highways represent 2.4% of the country's 812,000 km highway network.

The objectives cited for the Australian National Highway System include:

- facilitating overseas and interstate trade and commerce;
- allowing safe and reliable access by a significant proportion of Australians to the services provided by major population centres;
- minimizing the cost of the National Highway to the Australian community;
- supporting regional development; and
- contributing to ecologically sustainable development.

The routes selected for inclusion in Australia's National Highway System were intended to:

- encourage and contribute to a major extent to trade and commerce, overseas and among the states;
- assist industry located in major centres of population to be complementary to industry located in neighbouring major centres;
- reduce significantly transport costs of the products of rural and/or secondary industry between points of production and points of export or consumption;
- provide for long distance movement associated with recreation and tourism; and which
- improve movements between defence production centres, defence supply and storage locations, and defence

More recently, in 2004 the national government in Australia announced a major transportation funding initiative under the framework of a newly designated "AusLink National Network", including national, regional and urban transport corridors, links to ports and airports, and intermodal connections between road and rail.

The Network is intended to support national and regional economic growth and development, and includes links between major centres, along with key links within the major cities.

In the context of "criteria" for use in route selection, planning for the AusLink National Network examined:

- interregional freight volumes and passenger flows
- the population and economic significance of centres proposed to be linked
- the trading importance of individual links and export gateways.

#### **4. Task Force Review - Approach and Findings:**

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To address the direction provided by the Council of Ministers, the Task Force developed and adopted a work plan that included the following elements:

- Preparation of an updated inventory of routes currently included in the National Highway System with:
  - Adoption of a more consistent approach to describing NHS routes (eg. start and finish points)
  - Updating route lengths to reflect changes which have occurred due to construction activities (eg. bypasses, realignments)
- Identification of corrections needed to the current National Highway System inventory:
  - Anomalies in Transport Canada's 2004 "due diligence" review
  - Inclusion of linkages to additional major intermodal facilities which meet appropriate criteria
  - Inclusion of linkages to additional major international border crossings which meet appropriate criteria
- Development of definitions for pavement and structural rehabilitation work, for use in clarifying work types which should be eligible for cost sharing
- Development of the concept of a criteria based National Highway System
  - Development of criteria and thresholds
  - Identification of routes through application of the criteria

##### **a) Updated Route Inventory for the National Highway System**

When the National Highway System was originally identified in 1988, descriptions of many of the routes included in the network were rather general in nature, and did not provide precise descriptions of start or end points, particularly in larger urban areas. In addition, some route lengths have changed over time due to construction activities in the intervening years (new alignments, introduction of bypasses, changes in intersection geometry, etc.)

A detailed inventory of routes on the National Highway System was assembled, including those originally identified in 1988 and those added in September 2004. The current inventory also provides detailed descriptions of all routes on the National Highway System within a province or territory, irrespective of ownership (ie. federal, provincial or territorial, municipal, other) (Appendix 2).



**Outcome:**

As a result of this review:

- the length of NHS route network designated in 1988 was determined to be 24,297 km (updated from 24,373 km reported in 1998)
- the length of the additional routes added to the NHS by the Council of Ministers in September 2004 was found to be 2,705 kilometers (rather than 2,718 km, as originally reported).

Consequently the aggregated length of all routes included in the National Highway System as of September 2004 was determined to be 27,002 km.

### National Highway System – September 2004

Jurisdiction	Length Reported (1998)	Length in Kilometers		
		Updated 1988 Network	September 2004 Additions	2004 System Length
Yukon	1092	1079	-	1079
Northwest Territories	562	576	-	576
Nunavut	-	-	-	-
British Columbia	4582	5388	408	5796
Alberta	3381	3524	432	3955
Saskatchewan	2087	2093	348	2441
Manitoba	866	863	42	904
Ontario	4927	5003	1005	6008
Quebec	2882	2854	404	3258
New Brunswick	953	962	-	962
Prince Edward Island	118	120	67	187
Nova Scotia	882	881	-	881
Newfoundland and Labrador	904	955	-	955
Federal*	1137	-	-	-
	24373	24297	2705	27002

\* Roads under federal jurisdiction have now been included in the provincial and territorial inventories, as well as route segments that fall under municipal jurisdiction.

#### b) Identification of Corrections Needed to the Current National Highway System

##### i) Anomalies in the findings of Transport Canada “Due Diligence Review”

The "quantitative criteria" methodology used in 2003-2004 by Transport Canada to identify potential candidate NHS routes was dependent upon the availability of sound and consistent data to develop thresholds and to support the analysis. While this analysis was not the subject of a detailed discussion when presented in the spring of 2004, at one of the first meetings of the NHS Review Task Force, a number of concerns or questions were raised with aspects of the outcome of the assessment. Some routes intuitively expected to be included did not meet the thresholds used.

During the course of the work, jurisdictions were provided the opportunity to identify any perceived “anomalies” in the application of the methodology used by Transport Canada and to bring forward new information or data that would support reassessment of the eligibility of routes. At the request of the Task Force, one change to the methodology used by Transport Canada in 2004 was introduced to allow it to be compatible with the 1988 NHS criteria. The change was to combine the value of tourism with the value of freight in the assessment of the importance of international border crossings.

The criteria developed by Transport Canada and used to assess the eligibility of candidate routes were as follows:

**Transport Canada “Due Diligence Review” Criteria used in 2004**

- The National Highway System comprises existing routes that connect to:
- Capital cities
  - Major provincial population centres defined by Census Metropolitan Area and Census Agglomerations (CMA/CA), representing population of at least 50,000 with an urban core representing at least 50% of this total, or urban area of at least 5% of the jurisdiction population
  - Economic Activity, based on population adjusted by high average income and CMA/CA with a high incidence of the labour force engaged in tourism
  - Major land border crossings with \$2 billion worth of foreign trade (imports and exports) and tourism, carried by the road mode, in 2001 and 2002

**Outcome:**

Additional routes that were found to meet the criteria developed by Transport Canada are described in Appendix 3. Inclusion of these routes would add 98 km to the National Highway System, summarized as follows:

**NHS Corrections: Anomalies in Transport Canada’s “Due Diligence Review”**

Jurisdiction	Length of Additional Routes
Yukon	-
Northwest Territories	-
Nunavut	-
British Columbia	-
Alberta	-
Saskatchewan	-
Manitoba	-
Ontario	20 km
Québec	59 km
New Brunswick	-
Prince Edward Island	20 km
Nova Scotia	-
Newfoundland and Labrador	-
<b>Total</b>	<b>98 km</b>

**ii) Linkages to intermodal facilities**

In its review of the National Highway System route inventory, it became evident to the Task Force that a number of major intermodal facilities were not linked to the NHS, in spite of the fact that the eligibility criteria developed in 1988 referred to inclusion of routes which connect primary highways “with another transportation mode served directly by the highway mode”.

To address this concern, criteria were developed by the Task Force to assist in identifying major intermodal facilities which should be linked to the National Highway System to promote modal integration, as follows.

**National Highway System  
Criteria for Inclusion of Linkages to Intermodal Facilities**

<b>Airports</b>
- an existing roadway link (shortest route) to a National Airport System airport, or
- an existing roadway link (shortest route) to a non-NAS airport which has a minimum 200,000 passengers per year or 50,000 tonnes of freight
<b>Marine Ports</b>
- an existing roadway link (shortest route) to a Canada Port Authority port, or
- an existing roadway link (shortest route) to other ports which have a minimum 100 trucks per day (in each direction) or 50,000 TEU's of freight per year, or
- existing roadway links (shortest routes) to ferry terminals at both ends of an interprovincial ferry service which provides a connection between two routes on the National Highway System
<b>Rail</b>
- an existing roadway link (shortest route) to an existing Class 1 railway freight terminal which has a minimum of 100 trucks per day (in each direction) or 50,000 TEU's of freight per year

Jurisdictions were invited to identify, document and submit candidate intermodal linkages for review against these criteria.

Proximity to the National Highway System was also used as a consideration in determining eligibility, with acceptance of the principles that:

- linkages from the NHS to the intermodal facility should be reasonably short, and
- the shortest, most heavily used route to the facility would generally be selected, irrespective of jurisdictional responsibility for the route.
- exceptions to selection of the shortest link, or a single linkage, would include:
  - circumstances where a geographic obstacle requires more than one connection or
  - where there is significant inbound and outbound traffic to the facility which would justify selection of two linkages, both of which meet the criteria

Submissions were prepared and submitted by the jurisdictions represented on the Task Force, for review and evaluation by Transport Canada.

**Outcome:**

Additional routes which were found to meet the criteria for Intermodal Linkages are described in Appendix 4.

The Task Force proposes inclusion of these routes in the National Highway System, which would add 508 km to the system. The proposed additions are summarized by jurisdiction as follows:

**National Highway System  
Major Intermodal Linkages (Core Routes)**

Jurisdiction	Length of Additional Routes
Yukon	-
Northwest Territories	-
Nunavut	-
British Columbia	65 km
Alberta	15 km
Saskatchewan	9 km
Manitoba	77 km
Ontario	103 km
Québec	131 km
New Brunswick	31 km
Prince Edward Island	1 km
Nova Scotia	22 km
Newfoundland and Labrador	53 km
<b>Total</b>	<b>508 km</b>

**iii) Linkages to international border crossings**

The criteria developed in 1988 to identify a National Highway System referenced the importance of linkages to “a major port of entry or exit to the USA highway network”. While the original NHS included most of the “major” road connections to the US, the review concluded that two key connections had been omitted.

These were addressed through application of the criteria developed and applied by Transport Canada in its “Due Diligence Review” in 2004, which provided definition of the term “major port of entry or exit” as follows:

*Major land border crossings with \$2 billion worth of foreign trade (imports and exports) and tourism, carried by the road mode, in 2001 and 2002*

**Outcome**

The proposed additional border crossings identified through this review are included in the previous section on anomalies.

**c) Development of Definitions for Pavement and Structural Rehabilitation Work**

In September 2004 the Council of Ministers agreed that major rehabilitation of pavement and bridge structures should be eligible for cost sharing under federal investment programs. To assist in distinguishing between rehabilitation projects and routine maintenance, the Task Force was directed to develop and propose definitions that would serve that purpose.

**Outcome:**

It is proposed that the definition for pavement rehabilitation found in the TAC Pavement Design and Management Guide (1997) be adopted, with the addition of a provision that the work being undertaken on cost shared projects must be intended to achieve at least a 10 year extension in pavement life:

**Pavement Rehabilitation**

Involves the application of appropriate measures, including reconstruction, to extend the life of an existing pavement structure when roughness, lack of structural adequacy, or excessive surface distress results in an unacceptable pavement. Such unacceptability can be in terms of serviceability, increased user costs and concern for safety. Rehabilitation may also be used to strengthen a pavement which will be subjected to higher than originally estimated traffic loads.

To be eligible for cost sharing, pavement rehabilitation projects on the National Highway System should be designed to extend pavement life by at least ten years.

It is proposed that the following definition be adopted to identify rehabilitation projects for bridges and structures which should be eligible for cost sharing:

**Bridge Rehabilitation**

Involves the application of appropriate measures, including reconstruction, to extend the life of an existing structure by restoring or improving its structural integrity. Rehabilitation may also be used to strengthen a bridge that will be subjected to higher than originally estimated traffic loads.

#### **d) Development of the concept of Route Categories for the National Highway System**

The notion of additional route categories for the National Highway System was first raised in 1988 when the Council of Ministers identified a network of “Resource and Recreation Routes” as a supplement to the National Highway System.

The National Highway System was originally developed as the focus for a cooperative policy study. It was identified using qualitative criteria, collective judgment and consensus building on routes within the highway network that represented the key interprovincial and international road linkages, from a national perspective.

As designation of a route as part of the National Highway System was of little consequence for the period 1988 to 2001, no further effort was taken to refine or improve the route eligibility criteria. However, the introduction of new federal infrastructure programs, accompanied by the requirement that eligible projects must be on NHS routes, brought new impetus to clarify the process to be used and criteria to be applied for achieving NHS designation.

The work initiated by Transport Canada in 2003/04 on eligibility criteria for the NHS provided much greater precision, and established a new foundation for ongoing discussion and review. It also provided a launching point for pursuing the concept of categories of routes which do not meet the criteria or thresholds for the original NHS, but which may meet other criteria or lower thresholds which warrant recognition in the national context.

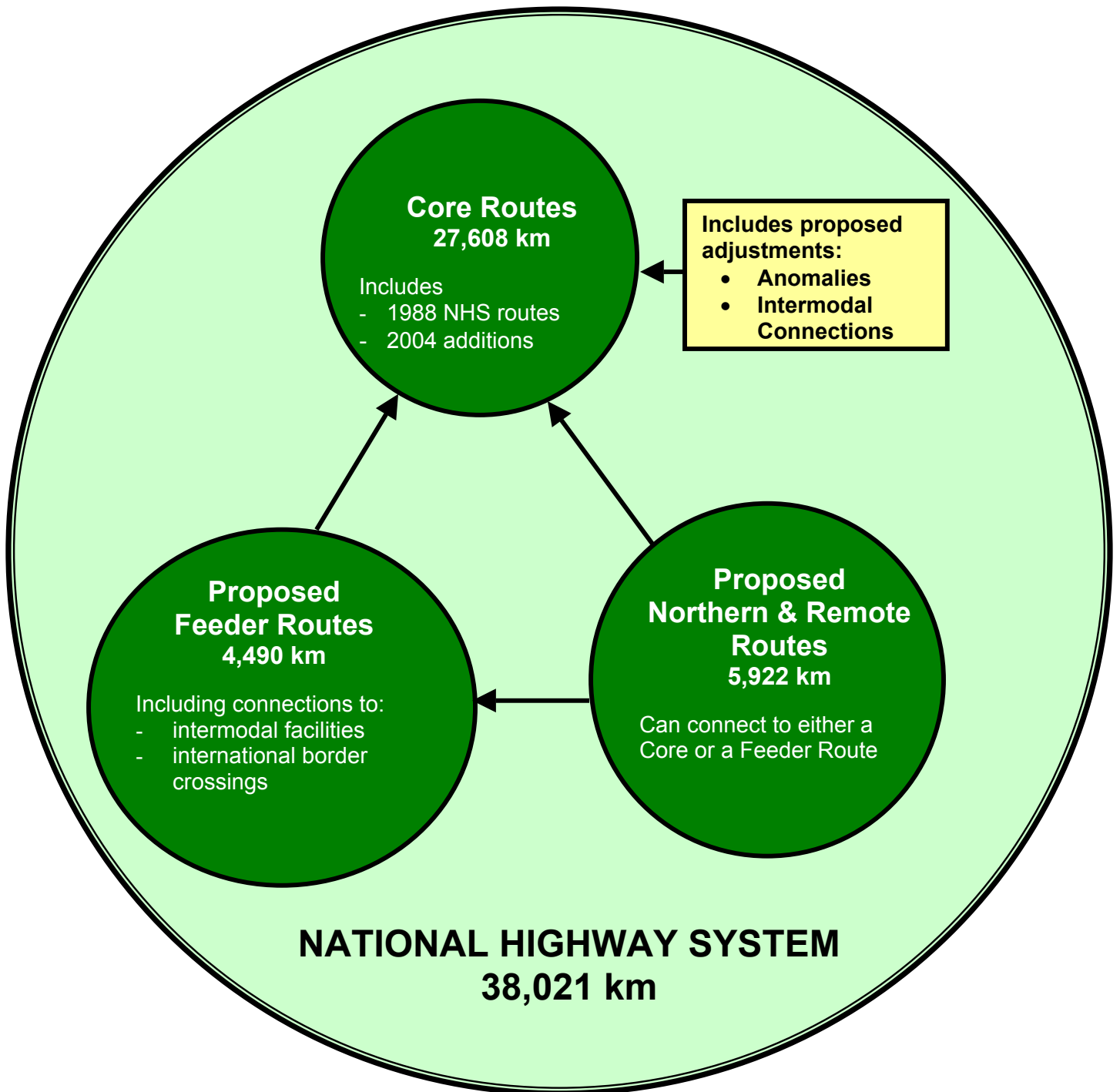
The approach taken by the Task Force focused on the concept of a National Highway System composed of several types of route networks categorized by the functions served and/or the activity levels experienced. In this regard, the concept proposed by the Task Force is a National Highway System comprised of three types of routes:

- **Core Routes**
  - Key interprovincial and international corridor routes (the original 1988 NHS routes, the September 2004 additions, anomalies to the 2004 additions, and linkages to key intermodal facilities and major border crossings connecting to “core” highways)
- **Feeder Routes**
  - Key linkages to the Core Routes from population and economic centres (including linkages to intermodal facilities and significant border crossings)
- **Northern and Remote Routes**
  - Key linkages to Core or Feeder routes that provide the primary means of access to northern and remote areas, economic activities and resources.

Criteria and thresholds were developed for each of these three categories for use in evaluating the eligibility of candidate routes.

## National Highway System – Concept

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### **i) Core Route Network**

It is proposed that candidate routes be evaluated for inclusion in this category using the following criteria:

#### **Core Route Network Criteria:**

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The NHS Core Route network includes existing routes that connect to:

- Capital cities
- Major provincial population centres defined by Census Metropolitan Area and Census Agglomerations (CMA/CA), representing population of at least 50,000 with an urban core representing at least 50% of this total, or urban area of at least 5% of the jurisdiction population
- Economic Activity, based on population adjusted by high average income and CMA/CA with a high incidence of the labour force engaged in tourism
- Major land border crossings with \$2 billion worth of foreign trade (imports and exports) and tourism, carried by the road mode

The NHS Core Route network also includes linkages which:

- connect a Core Route to intermodal facilities that meet the following criteria:

#### **Airports**

- an existing roadway link (shortest route) to a National Airport System airport, or
- an existing roadway link (shortest route) to a non-NAS airport which has a minimum 200,000 passengers per year or 50,000 tonnes of freight

#### **Marine Ports**

- an existing roadway link (shortest route) to a Canada Port Authority port, or
- an existing roadway link (shortest route) to other ports which have a minimum 100 trucks per day (in each direction) or 50,000 TEU's of freight per year, or
- existing roadway links (shortest routes) to ferry terminals at both ends of an interprovincial ferry service which provides a connection between two routes on the National Highway System

#### **Rail**

- an existing roadway link (shortest route) to an existing Class 1 railway freight terminal which has a minimum of 100 trucks per day (in each direction) or 50,000 TEU's of freight per year
- 

### **Application of Criteria**

Jurisdictions were invited to identify, document and submit candidate anomalies and intermodal linkages for inclusion in the NHS, as discussed in previous sections. Transport Canada reviewed and assessed the submissions made.

### **Outcome:**

Additional routes which were found to meet the criteria were described in the previous sections.



## ii) Feeder Route Network

It is proposed that candidate routes be evaluated for inclusion in this category using the following criteria:

### **Feeder Route Network Criteria**

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The NHS Feeder Route network includes existing highways that connect to a Core Route and which:

- are classified as primary or arterial highways (by function) by the provincial or territorial jurisdiction, and either
- provide a connection (shortest route) from a Census Agglomeration to the nearest Census Metropolitan Area, or:
  - serve 5% of the population of a jurisdiction, and
  - have at least 200 trucks per day (AADTT), and
  - have a seasonal peak increase in traffic of at least 25%

The NHS Feeder Route network also includes linkages which:

- connect a Feeder Route to intermodal facilities that meet the following criteria:
  - Airports**
    - an existing roadway link (shortest route) to a National Airport System airport, or
    - an existing roadway link (shortest route) to a non-NAS airport which has a minimum 200,000 passengers per year or 50,000 tonnes of freight
  - Marine Ports**
    - an existing roadway link (shortest route) to a Canada Port Authority port, or
    - an existing roadway link (shortest route) to other ports which have a minimum 100 trucks per day (in each direction) or 50,000 TEU's of freight per year, or
    - existing roadway links (shortest routes) to ferry terminals at both ends of an interprovincial ferry service which provides a connection between two routes on the National Highway System
  - Rail**
    - an existing roadway link (shortest route) to an existing Class 1 railway freight terminal which has a minimum of 100 trucks per day (in each direction) or 50,000 TEU's of freight per year
- connect a Feeder Route to an international border crossing that has:
  - 24 hour operation, and
  - a minimum of \$500 million per year of trade and/or tourism across border, or
  - Designated Commercial Office status<sup>1</sup>

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<sup>1</sup> a border office designated by the Canada Border Services Agency which provides 7 day, 24 hour service for the release of commercial shipments.

### **Application of Criteria**

Jurisdictions were invited to identify, document and submit candidate routes for inclusion in the Feeder Route network category (including linkages to intermodal facilities and international border crossings) for review and evaluation by Transport Canada.

### **Outcome:**

Routes which were found to meet the proposed criteria for the Feeder Route network are described in Appendix 5, and are summarized by jurisdiction as follows:

**Feeder Route Network**

<b>Jurisdiction</b>	<b>Feeder Routes</b>	<b>Intermodal Connections</b>	<b>Border Crossings</b>	<b>Total Length</b>
Yukon	-	-	-	-
Northwest Territories	-	-	-	-
Nunavut	-	-	-	-
British Columbia	370 km	-	76 km	<b>447 km</b>
Alberta	217 km	-	-	<b>217 km</b>
Saskatchewan	-	-	-	-
Manitoba	742 km	-	-	<b>742 km</b>
Ontario	698 km	-	8 km	<b>706 km</b>
Québec	719 km	-	47 km	<b>766 km</b>
New Brunswick	827 km	5 km	-	<b>832 km</b>
Prince Edward Island	188 km	-	-	<b>188 km</b>
Nova Scotia	296 km	-	-	<b>296 km</b>
Newfoundland and Labrador	298 km	-	-	<b>298 km</b>
<b>Total</b>	<b>4355 km</b>	<b>5 km</b>	<b>131 km</b>	<b>4490 km</b>

### iii) Northern and Remote Route Network

It is proposed that candidate routes be evaluated for inclusion in this category using the following criteria:

#### **Northern and Remote Route Network Criteria**

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The NHS Northern and Remote Route network includes existing highway, or planned highways that have passed environmental impact assessment, that connect to either a Core Route or a Feeder Route and which:

- are arterial highways<sup>2</sup> (by function), and
- provide year round service, and
- are the only primary connector for the region, or
- are the only primary connector to an adjacent province or territory

and

Satisfy one or more of the following:

- provides access to 20% of the jurisdiction's area, or
  - provides access to 10% of the jurisdiction's population, or
  - supports \$150 million per year in economic activity for the region (exports), or
  - supports 5% of the provincial or territorial GDP
- 

#### **Application of Criteria**

Jurisdictions were invited to identify, document and submit candidate routes for inclusion in the Northern and Remote Route network category for review and evaluation by Transport Canada.

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<sup>2</sup> the highest roadway functional classification used by the jurisdiction (eg. trunk, primary etc)

**Outcome:**

Routes which were found to meet the proposed criteria for this category are described in Appendix 6, and are summarized by jurisdiction as follows:

**Northern and Remote Route Network**

<b>Jurisdiction</b>	<b>Route Length</b>
Yukon	948 km
Northwest Territories	847 km
Nunavut	-
British Columbia	724 km
Alberta	197 km
Saskatchewan	238 km
Manitoba	370 km
Ontario	-
Quebec	1436 km
New Brunswick	-
Prince Edward Island	-
Nova Scotia	-
Newfoundland and Labrador	1163 km
<b>Total</b>	<b>5922 km</b>

## 5. Outstanding Issues

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The National Highway System designated in 1988 provided a useful focus for studies of the importance of road transportation to Canada's economy and mobility needs.

The review process undertaken by the Task Force was successful in building consensus on a proposed approach based on specific criteria and thresholds. If approved, the approach provides a more robust foundation for identifying routes which merit recognition as components of the National Highway System. The criteria based approach can be used to manage the evolution of the National Highway System to adjust the NHS over time, using available data sources.

Despite the consensus achieved by the Task Force, the application of the criteria developed did not permit inclusion of two routes in Manitoba that did not meet the criteria for either Feeder routes or Northern and Remote routes, despite having significant truck traffic volumes.

In this regard, analysis and evaluation determined that a number of routes submitted by other jurisdictions did not meet the criteria. However an ongoing review process for the NHS would provide opportunities in the future to review and reconsider the eligibility of roads that do not currently meet the criteria.

It was also noted that the proposed National Highway System includes all of the original Trans-Canada Highway (TCH) with the exception of a single route - Highway 105 in Nova Scotia. While there was discussion of whether, as a basic principle, all highways that were designated TCH should be included in the National Highway System, no consensus was reached on a recommendation.

Within the purview of a periodic review of the NHS, the Task Force identified a number of tasks deserving further consideration:

### **a) Intra-metropolitan Connections:**

By-pass roads and connectors to major intermodal facilities in major Canadian urban centres are either in the NHS or part of the proposed routes recommended by the Task Force for inclusion in the NHS. However, further discussion is needed on the significance of major corridors within the larger metropolitan centres to national economic and mobility goals. Discussions within the Task Force centred around several points of view:

- because of the importance of the territory they cover, larger metropolitan areas can include more than one major economic node of national importance and the issue is to link these major economic centers to the NHS.
- the consequences of congestion on major intra-metropolitan corridors can have profoundly detrimental impacts on the national economy, and also impede the flow of interprovincial and international traffic
- congestion on major intra-metropolitan corridors is largely attributable to local traffic and therefore such routes would not be appropriate for inclusion in the National Highway System

Several key “intra-metropolitan” connections in Toronto, Montreal and Vancouver have been identified as candidates for inclusion in the National Highway System. It is possible that there may be additional routes of this kind deserving of consideration, depending upon the selection of appropriate criteria. Consideration of criteria could include further exploration of the concept of connections between major population nodes and economic centres located within metropolitan areas.

Resolution of this issue through further discussion and development of consensus on additional criteria should be accorded a high priority.

#### **b) “Performance Characteristics” for the National Highway System**

The 1988 report on Phase 1 of the National Highway Policy Study proposed that the “performance” of the National Highway System ought to meet minimum service standards, if the system is to properly support Canada’s economic and mobility goals:

- provide a minimum operating speed of 90 km/hr.
- be capable of providing all weather service, with no seasonal load restrictions, and be capable of carrying the national standards for vehicle weights and dimensions.
- provide a riding comfort index (RCI) of 6.0 or greater, or the equivalent rating using other measurement systems.

Further review and discussion of “performance characteristics” and minimum service standards is required in the context of the new NHS concept, which encompasses three categories of routes, with a wide range of operating environments.

#### **c) Ongoing Review of the National Highway System**

While the National Highway System has been in existence for seventeen years, it has received only sporadic attention over that period. The additions to the network in September 2004 represented the first change in the designated routes, and the last report on the condition of the NHS was undertaken in 1998.

It is recommended that a process be developed which would define the scope, terms, conditions, assessment framework and frequency for regular reviews of the NHS to be undertaken in the future. The process would be submitted for consideration by the Council of Ministers and if approved, would provide the basis for future changes to the NHS. It is envisaged that the review process would provide reports to the Council of Ministers on:

- the NHS criteria
- the state of the system
- the changes in the route inventory due to construction activities (e.g. bypasses and realignments)
- proposals for changes in the NHS route inventory, additions/deletions or route categories, using the established or revised and approved criteria as the eligibility determinant of the NHS route inventory over time.

It is recommended that the Task Force be maintained to develop and propose a review process for the NHS. If approved, the Task Force would assume responsibility for preparing

regular reports on developments to the Council of Deputy Ministers, through the Policy and Planning Support Committee.

## **6. Conclusions:**

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Since the fall of 2004, the work of the Task Force focussed largely on pursuit of approaches, criteria, and data which would support objective assessments of the relative importance of routes within the highway network to Canada's economy, economic development and mobility goals. The review demonstrated very clearly that Canada depends heavily on the highway transportation system, not only to support trade, commerce and mobility within Canada and with the United States, but as the primary, and sometimes only, means of access to and from large regions of the country.

The concept which has been developed proposes a National Highway System comprised of three categories of route types; Core, Feeder, Northern and Remote. Taken together, the routes in these categories constitute the National Highway System. Individually, each route has been shown to play a vital role in support of the economy and the movement of goods and people.

The National Highway System as proposed encompasses 38,021 km of key linkages, and represents 2.7% of the Canada's highway network.

## 7. Recommendations

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In keeping with the mandate provided to the Task Force and the work completed to date, it is recommended that the Council of Ministers accept the NHS Review Task Force report and:

### *Current National Highway System*

- endorse the amended length of National Highway System as 27,002 km as of September 2004
- approve the addition of 98 km of routes identified as anomalies, and a further 508 km of routes as links to intermodal facilities

### *Definitions for Rehabilitation*

- endorse the definitions which were developed for pavement rehabilitation and structure rehabilitation for use in identifying projects and work types on the NHS which are eligible for cost sharing

### *National Highway System Concept*

- endorse the concept of restructured National Highway System comprised of Core, Feeder and Northern and Remote categories, including approval of the proposed criteria and thresholds developed for each category
- endorse the resulting new National Highway System comprising 38,021 km of routes which have been identified in each of the three categories (as described in the Appendices and Maps)

It is further recommended that the Council of Ministers direct the Task Force to continue its work to:

- pursue resolution of the outstanding issues identified previously and
- develop a proposal for the conduct of regular future reviews of the National Highway System



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## Appendix 1: Proposed National Highway System

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<b>Jurisdiction</b>	<b>Core Routes</b>	<b>Feeder Routes</b>	<b>Northern and Remote Routes</b>	<b>Total</b>
Yukon	1079.0	-	948.0	<b>2027.0</b>
Northwest Territories	575.6	-	847.2	<b>1422.8</b>
Nunavut	-	-	-	-
British Columbia	5861.3	446.7	724.0	<b>7032.0</b>
Alberta	3970.4	217.0	196.6	<b>4384.0</b>
Saskatchewan	2449.8	-	238.2	<b>2688.0</b>
Manitoba	981.5	742.1	369.6	<b>2093.2</b>
Ontario	6130.6	705.6	-	<b>6836.2</b>
Québec	3447.9	765.6	1435.8	<b>5649.3</b>
New Brunswick	993.2	831.7	-	<b>1824.9</b>
Prince Edward Island	208.2	188.0	-	<b>396.2</b>
Nova Scotia	903.0	295.5	-	<b>1198.5</b>
Newfoundland and Labrador	1007.6	298.0	1163.0	<b>2468.6</b>
Total	<b>27608.1</b>	<b>4490.2</b>	<b>5922.4</b>	<b>38020.7</b>



## Appendix 2: Route Inventory for the National Highway System (September 2004)

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### a) Summary

<b>Jurisdiction</b>	<b>NHS Length (km)</b>		
	<b>1988 Network (Updated)</b>	<b>September 2004 Additions</b>	<b>September 2004 System Length</b>
Yukon	1079.0	-	<b>1079.0</b>
Northwest Territories	575.6	-	<b>575.6</b>
Nunavut	-	-	-
British Columbia	5388.0	408.0	<b>5796.0</b>
Alberta	3523.7	431.6	<b>3955.3</b>
Saskatchewan	2092.8	347.8	<b>2440.6</b>
Manitoba	862.6	41.5	<b>904.1</b>
Ontario	5003.0	1004.8	<b>6007.8</b>
Québec	2854.2	403.8	<b>3258.0</b>
New Brunswick	962.3	-	<b>962.3</b>
Prince Edward Island	120.0	67.0	<b>187.0</b>
Nova Scotia	881.0	-	<b>881.0</b>
Newfoundland and Labrador	955.0	-	<b>955.0</b>
	<b>24297.2</b>	<b>2704.5</b>	<b>27001.7</b>

## b) Route Descriptions

### National Highway System Routes by Jurisdiction (as of September 2004)

<b>YUKON</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
BC border – Alaska border	1	945.0	945.0		
Whitehorse – Alaska border	2	134.0	134.0		
<b>Subtotal 1988</b>		<b>1079.0</b>	<b>1079.0</b>		
<i>2004 Additions</i>					
None					
<b>Subtotal 2004</b>					
<b>Total</b>		<b>1079.0</b>	<b>1079.0</b>		

<b>NORTHWEST TERRITORIES</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Alberta border – Highway 3	1	187.0	187.0		
Enterprise – Hay River	2	48.6	48.6		
Highway 1 – Yellowknife	3	340.0	340.0		
<b>Subtotal 1988</b>		<b>575.6</b>	<b>575.6</b>		
<i>2004 Additions</i>					
None					
<b>Subtotal 2004</b>					
<b>Total</b>		<b>575.6</b>	<b>575.6</b>		

<b>BRITISH COLUMBIA</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Alberta border – Victoria	1	993.0	889.0	3.0	101.0
Alberta border – Dawson Creek	2	42.0	42.0		
Alberta border – Hope	3	833.0	833.0		
Tete Jaune Cache – Hope	5	531.0	531.0		
Alberta border – Prince Rupert	16	1074.0	1074.0		
Victoria – Hwy 99	17	44.0	41.0	3.0	
Cache Creek – Km 133 of Alaska Hwy	97	1812.0	928.0		884.0
US Border - Jct 1/99 (N. Vancouver)	99	59.0	47.0	12.0	
<b>Subtotal 1988</b>		<b>5388.0</b>	<b>4385.0</b>	<b>18.0</b>	<b>985.0</b>
<i>2004 Additions</i>					
Highway 99-U.S. Border (Pacific Highway)	8th Ave. /15	3.0	3.0		
Abbotsford – US Border (Huntington)	11	3.0	3.0		
Nanaimo – Parksville	19	33.0	33.0		
Jct 97/97C (near Peachland) – Jct 97A/97B	97	80.0	80.0		
Swan Lake (Jct 97) - Sicamous (Jct 1)	97A	66.0	66.0		
Grindrod (Jct 97A) - Salmon Arm (Jct 1)	97B	14.0	14.0		
Merritt (Jct 5) - near Peachland (Jct 97)	97C	106.0	106.0		
Jct 1/99 (Horseshoe Bay) – Whistler	99	103.0	103.0		
<b>Subtotal 2004</b>		<b>408.0</b>	<b>408.0</b>		
<b>Total</b>		<b>5796.0</b>	<b>4793.0</b>	<b>18.0</b>	<b>985.0</b>

<b>ALBERTA</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>2004 National Highway System</i>					
Sask border – BC border	1	536.4	426.8	26.3	83.3
Fort Macleod – Edmonton	2	555.6	524.3	31.3	
Donnelly – N. of Grimshaw					
Medicine Hat – BC border	3	324.1	324.1		
US border – Lethbridge	4	103.4	103.4		
E. of Calgary – Sask border	9	326.8	326.8		
Sask border – BC border	16	636.8	530.0	29.1	77.8
N. of Grimshaw – NWT border	35	465.3	465.3		
Edmonton – BC border	43	498.6	498.6		
Valleyview – Donnelly	49	76.6	76.6		
<b>Subtotal 1988</b>		<b>3523.7</b>	<b>3275.9</b>	<b>86.7</b>	<b>161.1</b>
<i>2004 Additions</i>					
Edmonton – Fort McMurray	15/28A/28/6 3	431.6	413.2	18.4	
<b>Subtotal 2004</b>		<b>431.6</b>	<b>413.2</b>	<b>18.4</b>	
<b>Total</b>		<b>3955.3</b>	<b>3689.1</b>	<b>105.1</b>	<b>161.1</b>

<b>SASKATCHEWAN</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Manitoba border – Regina	1	245.6	236.0	9.5	
Regina – Alberta border	1	406.3	393.7	12.6	
Manitoba border – Saskatoon	16	419.3	398.5	20.7	
Saskatoon – Alberta border	16	271.5	255.8	15.7	
Saskatoon – Alberta border	7	261.8	254.6	7.2	
Regina – Saskatoon	11	254.4	243.3	11.1	
Estevan (US border) - Regina	6, 39	233.9	224.0	9.9	
<b>Subtotal 1988</b>		<b>2092.8</b>	<b>2006.0</b>	<b>86.8</b>	
<i>2004 Additions</i>					
Saskatoon – Prince Albert	2, 11	135.7	129.3	6.5	
Hwy 1 – Yorkton	10	160.6	150.9	9.7	
Moose Jaw – Hwy 11	2	51.4	51.1	0.3	
<b>Subtotal 2004</b>		<b>347.8</b>	<b>331.3</b>	<b>16.4</b>	
<b>Total</b>		<b>2440.5</b>	<b>2337.3</b>	<b>103.3</b>	

<b>MANITOBA</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Ontario border – Sask border	1	501.0	501.0		
Portage-la-Prairie – Sask border	16	267.3	264.0	3.3	
Winnipeg – Emerson (US border)	75	94.3	87.6	6.7	
<b>Subtotal - 1988</b>		<b>862.6</b>	<b>852.6</b>	<b>10.0</b>	
<i>2004 Additions</i>					
Brandon – Highway 16	10	41.5	41.5		
<b>Subtotal - 2004</b>		<b>41.5</b>	<b>41.5</b>		
<b>Total</b>		<b>904.1</b>	<b>894.1</b>	<b>10.0</b>	

<b>ONTARIO</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Fort Erie (US border) - Toronto	QEW	139.0	139.0		
Que border – Windsor (US border)	401	817.0	817.0		
London – Sarnia (US border)	402	103.0	103.0		
US border - QEW	405	9.0	9.0		
QEW - Hwy 401 IC	427	8.0	8.0		
Highway 401 – US border	137	4.0	4.0		
Prescott (US border) - Ottawa	416	79.8	79.8		
Quebec border – Ottawa	417	182.8	182.8		
Toronto - Parry Sound	400	210.4	210.4		
Parry Sound - Sudbury	69	181.5	181.5		
Ottawa – Manitoba	17	1966.3	1934.7	31.6	
Quebec border – Kirkland Lake	66	58.4	54.5	3.9	
North Bay – Nipigon	11	991.5	978.2	13.3	
Fort Frances - Kenora	71	194.3	190.0	4.3	
Thunder Bay – US border	61	58.0	58.0		
<b>Subtotal 1988</b>		<b>5003.0</b>	<b>4949.9</b>	<b>53.1</b>	
<i>2004 Additions</i>					
QEW (Burlington) – Hwy 401 (Woodstock)	403	81.9	81.9		
Hwy 400 IC Connection - Hwy 11 (Barrie)	400A	1.1	1.1		
Barrie – North Bay	11	238.6	238.6		
Hwy 401 - Peterborough	35/115	44.8	44.8		
Hwy 12 (west of Lindsay) - Hwy 400 (Coldwater)	12	74.0	74.0		
Ottawa - Hwy 12 (West of Lindsay)	7	319.0	313.1	5.9	
Highway 401 - Guelph	6	15.4	15.4		
Hamilton - Hwy 401	6	25.9	25.9		
Kitchener - Guelph	7	20.8	12.2	8.6	
Hwy 401 – Ambassador Bridge (Windsor)	3	10.9	4.5	6.4	
US Border at Cornwall - Hwy 401 IC	138	3.8		3.8	
Hwy 17 – Sault Ste Marie (US Border)	17B	10.6		10.6	
Hwy 400 (Barrie) – Collingwood	26	63.0	47.6	15.4	
Stratford – Kitchener	7/8	52.5	49.2	3.3	
Hwy 17 – Elliot Lake	108	27.2	24.7	2.5	
Hawkesbury (Quebec Border) – Hwy 417	34	19.2	14.3	4.9	
<b>Subtotal - 2004</b>		<b>1004.8</b>	<b>947.3</b>	<b>57.6</b>	
<b>Total</b>		<b>6007.8</b>	<b>5897.2</b>	<b>110.7</b>	

<b>QUÉBEC</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Montréal – Sherbrooke	A10	137.7	137.7		
Montréal – Champlain	A15	53.7	53.7		
Montréal – Ontario border	A15, 101, 117	668.3	668.3		
Ontario border – Rivière-du-Loup	A20	500.0	493.3		6.7
Rivière-du-Loup – New Brunswick border	185	100.9	100.9		
Longueuil (Hwy 20) – Anjou (Hwy 40)	A25	8.1	8.1		
Montréal (Hwy 10) – Philipsburg	A35, 133	58.7	58.7		
Ontario Border – Québec	A40	343.4	343.4		
Québec – Sept-Îles	138	630.0	630.0		
Charny (Hwy 20) – Chicoutimi	73, 175	209.3	209.3		
Trois-Rivières – Rock Island	A55, 155, A55	144.1	144.1		
<b>Subtotal - 1988</b>		<b>2854.2</b>	<b>2847.3</b>		<b>6.7</b>
<i>2004 Additions</i>					
Gatineau – Montréal	50/148	155.4	155.4		
Trois-Rivières – Shawinigan	55	40.4	40.4		
Rivière-du-Loup – Matane	20/132	204.9	204.9		
Hawkesbury – Hwy 148	344	3.1	3.1		
<b>Subtotal - 2004</b>		<b>403.8</b>	<b>403.8</b>		
<b>Total</b>		<b>3258.0</b>	<b>3251.3</b>		<b>6.5</b>

<b>NEW BRUNSWICK</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Nova Scotia border – Quebec border	2	523.1	523.1		
St. Stephen (US border) – Petticodiac	1	231.4	231.4		
Saint John – Fredericton	7	76.0	76.0		
Aulac (Hwy 2) – Cape Jourimain	16	57.8	57.8		
Moncton – Port Elgin	15	59.5	59.5		
Woodstock – US border	95	14.5	14.5		
<b>Subtotal 1988</b>		<b>962.3</b>	<b>962.3</b>		
<i>2004 Additions</i>					
Hwy 1 – St. Stephen (US border)	3				
<b>Subtotal 2004</b>					
<b>Total</b>		<b>962.3</b>	<b>962.3</b>		

<b>PRINCE EDWARD ISLAND</b>		Total Length	Responsible Gov't		
<i>Summary</i>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Borden – Wood Islands	1	120.0	120.0		
<b>Subtotal - 1988</b>		<b>120.0</b>	<b>120.0</b>		
<i>2004 Additions</i>					
Confederation Bridge		8.0			8.0
Summerside - Charlottetown	2	59.0	59.0		
<b>Subtotal - 2004</b>		<b>67.0</b>	<b>59.0</b>		<b>8.0</b>
<b>Total</b>		<b>187.0</b>	<b>179.0</b>		<b>8.0</b>



<b>NOVA SCOTIA</b>		Total Length	Responsible Gov't		
<b>Summary</b>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
Bedford – Yarmouth	101	309.0	309.0		
Halifax – Truro (Hwy 104)	102	101.0	101.0		
N.B. border – Port Hastings (Hwy 105)	104	272.0	272.0		
Port Hastings (Hwy 105) – Sydney (Hwy 125)	4/104	131.0	126.0	5.0	
Sydney (Hwy 4) – North Sydney (Hwy 105)	125	19.0	19.0		
North Sydney (Hwy 125) – North Sydney ferry terminal	105	3.0	3.0		
TCH 104 – Caribou Ferry Terminal	106	18.0	18.0		
Victoria Road – Hwy 118	111	3.0	3.0		
Hwy 102 – Hwy 111	118	14.0	14.0		
Digby (101) – Digby Ferry Terminal	303	8.0	5.0	3.0	
Yarmouth Hwy 101 – Yarmouth Ferry Terminal	3,1	3.0		3.0	
<b>Subtotal 1988</b>		<b>881.0</b>	<b>870.0</b>	<b>11.0</b>	
<i>2004 Additions</i>					
None					
<b>Subtotal 2004</b>					
<b>Total</b>		<b>881.0</b>	<b>870.0</b>	<b>11.0</b>	

<b>NEWFOUNDLAND AND LABRADOR</b>		Total Length	Responsible Gov't		
<b>Summary</b>	Route		Prov/Terr	Municipal	Federal
<i>1988 National Highway System</i>					
St. John's – Port-aux-Basques	1	911.0	870.0		41.0
Trans-Canada Hwy – Argentia	100	44.0	44.0		
<b>Subtotal 1988</b>		<b>955.0</b>	<b>914.0</b>		<b>41.0</b>
<i>2004 Additions</i>					
None					
<b>Subtotal 2004</b>					
<b>Total</b>		<b>955.0</b>			

## Appendix 3: NHS Corrections – Anomalies (Core Routes)

### a) Summary

#### NHS Corrections - Anomalies (Core Routes):

Jurisdiction	Length of Additional Routes
Yukon	-
Northwest Territories	-
Nunavut	-
British Columbia	-
Alberta	-
Saskatchewan	-
Manitoba	-
Ontario	19.7
Québec	58.7
New Brunswick	-
Prince Edward Island	20.0
Nova Scotia	-
Newfoundland and Labrador	-
<b>Total</b>	<b>98.4</b>

### b) Route Descriptions

Province/Route	From	To	Length
<b>Ontario</b>			
Nicholas St	Hwy 417	MacDonald-Cartier Bridge	4.1 km
Highway 420, Roberts St Bridge Approach	QEW	Rainbow Bridge (Niagara Falls)	4.7 km
Dougall Ave. Ouellette Ave Wyandotte St	Highway 401	Windsor-Detroit Tunnel	10.9 km
		<i>Total</i>	19.7 km
<b>Québec</b>			
A-13	A-40 (Montréal)	A-640 (Boisbriand)	15.8 km
A-640	A-40 (Terrebonne)	A-13 (Boisbriand)	36.0 km
A-540	A-20 (Vaudreuil-Dorion)	A-40 (Vaudreuil-Dorion)	5.0 km
A-5	Ontario Border (Macdonald-Cartier Bridge)	A-50 (Hull)	1.8 km
		<i>Total</i>	58.6 km
<b>Prince Edward Island</b>			
1A	Travelers Rest	Albany	20.0 km
		<i>Total</i>	20.0 km

## Appendix 4: NHS Corrections - Intermodal Linkages (Core Routes)

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### a) Summary

#### NHS Corrections – Intermodal Connections (Core Routes)

<b>Jurisdiction</b>	<b>Length of Additional Routes</b>
Yukon	-
Northwest Territories	-
Nunavut	-
British Columbia	65.3
Alberta	15.1
Saskatchewan	9.2
Manitoba	77.4
Ontario	103.1
Québec	131.2
New Brunswick	30.9
Prince Edward Island	1.2
Nova Scotia	22.0
Newfoundland and Labrador	52.6
<b>Total</b>	<b>508.0</b>

**b) Route Descriptions**

<b>Route</b>	<b>From</b>	<b>To</b>	<b>Length</b>
<b>British Columbia</b>			
McGill St.	Hwy 1	Port of Vancouver - Vanterm and Centerm	4.0 km
Deltaport Way	Hwy 17	Pt of Vancouver - Deltaport	10.0 km
River Road and Elevator Road	Hwy 17/99	Fraser River Port	15.0 km
Fairview Terminals Rd	Hwy 16	Port of Prince Rupert	2.0 km
Highway 19 - link to Duke Pt Ferry Terminal	Hwy 1	Duke Pt. Ferry Terminal - Duke Pt.	7.6 km
Bridgeport Rd / Sea Island Way Couplet	Jct Hwy 99/Bridgeport Road	Vancouver International Airport	1.7 km
McTavish, Canora & Willingdon Rds	Jct Hwy 17/McTavish Rd.	Victoria International Airport	0.8 km
Airport Way	Hwy 97	Kelowna Airport	0.3 km
Mt. Lehman Road	Hwy 1	Abbotsford Airport, Jct. Mt. Lehman/Approach Dr.	2.9 km
Old Cariboo Hwy	Hwy 16	Prince George Airport, Jct. Johnson/Ellis Rds.	5.0 km
176th St. & 104th Ave.	Jct Hwy 1/176th street	CN Vancouver Intermodal Terminal (VIT) N of Hwy 1 and S of the Fraser River.	2.0 km
Highways 7B, 7 & Kennedy Road	Jct Hwy 1/7B	CP Vancouver Intermodal Facility (VIF) on the E side of the Pitt River and N of the Fraser River	14 km
		<i>Total</i>	65.3 km
<b>Alberta</b>			
96th Ave NE, Barlow Trail (Calgary)	Deerfoot Trail (Hwy 2)	Calgary International Airport	2.9 km
Highway 69	Junction Hwy 63 (south of Fort McMurray)	Fort McMurray Airport	6.0 km
Barlow Trail, 114th Ave SE, 52nd Street SE, Dufferrin Place SE (Calgary)	Deerfoot Trail (Hwy 2)	CP Intermodal Terminal	3.4 km
Barlow Trail, 54th Avenue SE, 27th Street SE (Calgary)	Deerfoot Trail (Hwy 2)	CN Intermodal Terminal	1.9 km
184th Street (Edmonton)	Yellowhead Trail (Hwy 16)	CN Intermodal Terminal	0.9 km
		<i>Total</i>	15.1 km
<b>Saskatchewan</b>			
Lewvan Drive & Regina Ave	Hwy 1	Regina Airport	4.5 km
Airport Drive	Circle Drive	Saskatoon Airport	1.7 km
11 <sup>th</sup> Street and Chappel Drive	Highway 7	Saskatoon Chappel Yard – CN Rail terminal	3.0 km
		<i>Total</i>	9.2 km

<b>Manitoba</b>			
PTH 7/ Route 90/ Sargent Ave./ Wellington Ave.	PTH 101	Winnipeg Airport	11.0 km
PR 221/Route 25/Keewatin St	PTH 101	CPR Weston	11.0 km
PTH 1 East/Plessis road	PTH 100	560 Plessis Rd./Symington Yard (CN)	6.0 km
Hwy 101 (North Perimeter Rd)	East Jct Hwy 1	West Jct Hwy 1	49.4 km
		<i>Total</i>	77.4 km
<b>Ontario</b>			
403	Hwy 403/QEW	Hwy 401 & 410	20.9 km
410	Hwy 401	Bovaird Dr	6.7 km
427	Hwy 401	Regional Rd 7	12.1 km
409	Hwy 401	Pearson Airport	4.1 km
Hwy 6	Hwy 403	Hamilton Airport	9.7 km
Regional Rd 7 and Regional Rd 50 and Rutherford Rd	Hwy 427	CP Intermodal Terminal (Vaughan)	6.0 km
Steeles Ave and Airport Rd and Intermodal Dr	Hwy 410	CN Intermodal Terminal (Brampton)	7.1 km
Derry Rd and Airport Rd and Intermodal Dr	Hwy 427	CN Intermodal Terminal (Brampton)	5.6 km
Gardiner Expwy & Kipling Ave & Queens St N	Hwy 427	CP Obico Intermodal Terminal (Toronto / Etobicoke)	3.5 km
Trafalgar Rd	Hwy 401	CP Expressway Intermodal Terminal (Milton)	1.7 km
Regional Rd 7 & Keele St & Administration Rd	Hwy 400	CN RoadRailer Intermodal Terminal (Vaughan)	4.3 km
McCowan Road	Hwy 401	CP Expressway Intermodal Terminal (Milton) (Toronto/Scarborough)	1.6 km
Bronson Ave and Airport Parkway	Hwy 417	MacDonald Cartier Airport (Ottawa)	9.8 km
Airport Rd and Oxford St E	Hwy 401	London Airport	10.0 km
		<i>Total</i>	103.1 km

<b>Québec</b>			
A-10 (Port of Montreal (POM))	A-15 (Exit 57)	A-720 (Ville-Marie)	4.3 km
A-720 (Ville-Marie) (POM)	A-15 (Exit 63)	Notre-Dame St.	7.7 km
Mill/De la Commune/Berri Streets (POM)	A-10 (Bonaventure)	Notre-Dame St.	2.6 km
Notre-Dame St. (POM)	Berri St.	De Boucherville St.	8.8 km
René-Lévesque/Viger/Lorimer	A-720 (Ville-Marie)	Notre-Dame St.	0.8 km
Dickson/Souigny Sts. (POM)	Notre-Dame St.	A-25	3.5 km
Des Futailles St.	Notre-Dame St.	Tellier St.	0.9 km
Tellier St.	Des Futailles St.	De Boucherville St.	0.6 km
De Boucherville St.	Notre-Dame St.	A-25	2.9 km
Henri-Bourassa Boul. (Port of Quebec (POQ))	A-40	Port of Québec	3.9 km
Hwy 136/Dalhousie/Quai Saint-Andre/St-Paul/A-440 (POQ)	A-73 (Québec)	Henri-Bourassa Boul.	14.0 km
A-440 (POQ)	Henri-Bourassa Boul.	A-40 (Beauport)	6.5 km
Des Recollets St. (Port of Trois-Rivières)	A-40	Royal St.	1.3 km
Royal/Normand/Notre-Dame Sts. (Port of Trois-Rivières)	Des-Recollets	Port Gate (Lavérendrye St.)	2.1 km
A-70/Hwy 170 (Port of Saguenay)	Hwy 175	Waskwaswasipi Bridge	18.4 km
Maritime Rd. (Port of Baie-Comeau)	Hwy 138	Du Quai St.	3.8 km
Hwy 138/Retty St. (Port of Sept-Iles)	Smith St.	Entrance to Port	3.7 km
A-520 (Dorval/Trudeau Airport)	A-40	Romeo-Vachon Boul.	7.9 km
Romeo-Vachon/Michel-Jasmin (Dorval Airport)	A-520	Dorval/Trudeau Airport	0.9 km
Local Roads (Mirabel Airport)	A-50	Henri-Fabre St.	2.0 km
A-540 (Quebec Airport)	A-73	De l'Aéroport Boul.	4.9 km
De l'Aéroport Boul. (Quebec Airport)	A-540	Entrance to airport	1.8 km
Hickmore/McArthur Sts. (CN yard)	A-520	A-13	1.8 km
43 Ave./46 Ave./Dubreuil St.	A-520	CP Intermodal Terminal	2.4 km
Paré St.	A-15	CP Expressway Terminal	1.4 km
A-13 (CN/CP)	A-20	A-40	6.0 km
Hwys 132/138 (CN/CP)	A-20	A-15	16.3 km
		<i>Total</i>	131.2 km

<b>New Brunswick</b>			
Mun. Streets to Port of Saint John - East side	Route 1	Port of Saint John - East side	7.1 km
Mun. Streets to Digby ferry & Port of Saint John - West side	Route 1	Digby Ferry/Port of Saint John - West side	2.2 km
Route 111	Route 1	Saint John Airport	9.6 km
Nevers Road, Route 102	Route 2	Fredericton Airport	5.8 km
Route 15, Harrisville & Dieppe Blvd, Route 132	Route 2	Moncton Airport	6.2 km
		<i>Total</i>	30.9 km
<b>Prince Edward Island</b>			
Brackley Point Road	Route 1	Charlottetown Airport	1.2 km
		<i>Total</i>	1.2 km
<b>Nova Scotia</b>			
Joseph Howe/ Kempt/ Barrington/ Lower Water/ Hollis Sts.	102	Port of Halifax	12.0 km
Dartmouth - Rtes 111 & 322	Rte 188	Port of Halifax (Autoport)	10.0 km
		<i>Total</i>	22.0 km
<b>Newfoundland and Labrador</b>			
Route 2	TCH	Port of St. John's	14.8 km
Portugal Cove Rd	TCH	St. John's Airport	1.3 km
Route 450A	TCH	Port of Corner Brook	3.9 km
Route 340	TCH	Lewisport Marine Terminal	15.0 km
Route 350	TCH	Port of Botwood	17.6 km
		<i>Total</i>	52.6 km

## Appendix 5: Feeder Route Network – Proposed Routes

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### a) Summary

<b>Jurisdiction</b>	<b>Feeder Routes</b>	<b>Intermodal Connections</b>	<b>Border Crossings</b>	<b>Total Length*</b>
Yukon	-	-	-	-
Northwest Territories	-	-	-	-
Nunavut	-	-	-	-
British Columbia	370.4	-	76.3	<b>446.7</b>
Alberta	217.0	-	-	<b>217.0</b>
Saskatchewan	-	-	-	-
Manitoba	742.1	-	-	<b>742.1</b>
Ontario	697.9	-	7.7	<b>705.6</b>
Québec	719.1	-	46.5	<b>765.6</b>
New Brunswick	827.0	4.7	-	<b>831.7</b>
Prince Edward Island	188.0	-	-	<b>188.0</b>
Nova Scotia	295.5	-	-	<b>295.5</b>
Newfoundland and Labrador	298.0	-	-	<b>298.0</b>
<b>Total</b>	<b>4355.0</b>	<b>4.7</b>	<b>130.5</b>	<b>4490.2</b>



## b) Route Descriptions

### i) Feeder Routes

Province/ Route	From	To	Length (km)
<b>British Columbia</b>			
Hwys 97	Hwy 97C north of Peachland	Downtown Penticton	44.1 km
Hwy 101	Downtown Powell River	Vancouver (Langdale ferry terminal)	112.2 km
Island Highway 19	Parksville, Jct 4A/19	Campbell River, Jct Hwy 19/28	118.4 km
Hwy 4	Downtown Port Alberni	Island Highway, Jct Hwy 4/19	38.0 km
Cassiar Highway	Terrace, Jct Hwy 16/37	Kitimat, Jct. Hwy 37/Nalabila Blvd.	57.7 km
		<i>Total</i>	370.4 km
<b>Alberta</b>			
Hwy 28/28A	Junction Hwy 63 (NE of Edmonton)	Cold Lake	217.0 km
		<i>Total</i>	217.0 km
<b>Manitoba</b>			
Route 6	Thompson	Winnipeg	752.5 km
		<i>Total</i>	752.5 km
<b>Ontario</b>			
Hwy 138	Hwy 417	Hwy 401 at Cornwall	35.4 km
Hwy 7/10	Hwy 410	Owen Sound	152.1 km
Hwy 12	Hwy 400	Midland	18.0 km
Hwy 19	Tillsonburg	Hwy 401	22.5 km
Hwy 24	Simcoe	Hwy 403	36.2 km
Hwys 3/77	Leamington	Hwy 401	61.3 km
Hwys 144/101	Sudbury	Hwy 11 (Timmins)	362.4 km
Hwy 17	Hawkesbury East	Hwy 417	10.0 km
		<i>Total</i>	697.9 km
<b>Québec</b>			
A-55/155/169/170	Shawinigan (8th St.)	Hwy 170 (Saint-Bruno)	285.1 km
Hwy 169	Hwy 170 (Saint-Bruno)	Alma (Boul. Auger)	8.9 km
A-70/170	Hwy 169 (Saint-Bruno)	Chicoutimi (Hwy 175)	47.6 km
A-73/173	A-20	Saint-Georges (Hwy 271)	89.3 km
A-10/112	Sherbrooke (A-55)	A-73	157.6 km
Hwy 161	A-20	Victoriaville (des Bois Francs St.)	23.9 km
Hwy 139	A-10	Cowansville (de la Rivière)	15.4 km
Hwy 139	A-10	Granby (Principale)	8.2 km
A-30	A-20	Sorel (Hwy 133)	59.0 km
A-31	A-40	Joliette (Hwy 158)	13.7 km
Hwy 201	Valleyfield (A-530)	A-20	10.4 km
		<i>Total</i>	719.1 km

<b>New Brunswick</b>			
Routes 8	Fredericton	Bathurst via Miramichi	258.0 km
Route 11	Shediac	Miramichi	122.0 km
Route 11	Miramichi	Bathurst	180.0 km
Route 11	Bathurst	Campbellton	117.0 km
Route 17	Campbellton	St. Leonard	150.0 km
		<i>Total</i>	827.0 km
<b>Prince Edward Island</b>			
Route 2 East	Charlottetown (Route 1, Perimeter Hwy)	Souris (MacPhee Ave.)	77.0 km
Route 2 West	Summerside (Slemon Park Boundary)	Tignish (Hwy 153)	77.0 km
Route 3	Cherry Valley (Route 1)	Georgetown (Water St.)	34.0 km
		<i>Total</i>	188.0 km
<b>Nova Scotia</b>			
Hwy 103/ Hardscratch Rd/ Starr's Rd.	Halifax (Hwy 102)	Yarmouth (Hwy 101)	295.5 km
		<i>Total</i>	295.5 km
<b>Newfoundland and Labrador</b>			
Hwy 430	TCH at Deer Lake	St. Barbe Ferry Terminal	298.0 km
		<i>Total</i>	298.0 km

**ii) Connections to Intermodal Facilities (Feeder Routes)**

<b>Province/ Route</b>	<b>From</b>	<b>To</b>	<b>Length (km)</b>
<b>New Brunswick</b>			
Turgeon Rd./Hwy 134	Hwy 11	Port of Belledune	4.7 km
		<i>Total</i>	4.7 km

**iii) Connections to International Border Crossings (Feeder Routes)**

<b>Province/ Route</b>	<b>From</b>	<b>To</b>	<b>Length (km)</b>
<b>British Columbia</b>			
Hwy 97	Penticton (Railway St.)	U.S. Border (Osoyoos)	65.0 km
Hwy 95	Highway 3 (Curzon)	U.S. Border (Kingsgate)	11.3 km
		<i>Total</i>	76.3 km
<b>Ontario</b>			
Route 138	Hwy 401 at Cornwall	U.S. Border	3.8 km
		<i>Total</i>	3.8 km
<b>Québec</b>			
Hwy 173	St. Georges (Hwy 271)	U.S. Border (Armstrong)	46.5 km
		<i>Total</i>	46.5 km

## Appendix 6: Northern and Remote Network – Proposed Routes

### a) Summary

#### Northern and Remote Route Network

Jurisdiction	Route Length
Yukon	948.0
Northwest Territories	847.2
Nunavut	-
British Columbia	724.0
Alberta	196.6
Saskatchewan	238.2
Manitoba	369.6
Ontario	-
Québec	1435.8
New Brunswick	-
Prince Edward Island	-
Nova Scotia	-
Newfoundland and Labrador	1163.0
<b>Total</b>	<b>5922.4</b>

### b) Route Descriptions

Jurisdiction/Route	From	To	Length (km)
<b>Yukon</b>			
Klondike Highway	Hwy 1	Jct. Dempster Hwy	483.0 km
Dempster Highway	Klondike Highway	NWT border	465.0 km
		<i>Total</i>	948.0 km
<b>Northwest Territories</b>			
Mackenzie Hwy (Hwy 1)	Jct Hwy 3 at km 187.5	Wrigley	505.5 km
Ingraham Trail (Hwy 4)	Yellowknife	Kilomter 69	69.2 km
Dempster Hwy (Hwy 8)	Yukon Border	Inuvik (Navy Road)	272.5 km
		<i>Total</i>	847.2 km
<b>British Columbia</b>			
Highway 37	Hwy 16 at Kitwanga	Highway 97 (Yukon Border)	724.0 km
			724.0 km
<b>Alberta</b>			
Highway 58	Rainbow Lake	Jct. Hwy 88	196.6 km
		<i>Total</i>	196.6 km

<b>Saskatchewan</b>			
Highway 2	Prince Albert	LaRonge	238.2 km
		<i>Total</i>	238.2 km
<b>Manitoba</b>			
Highway 10/60	Highway 6	Flin Flon	369.6 km
		<i>Total</i>	369.6 km
<b>Québec</b>			
Hwy 111/109	Hwy 117	Radisson	869.3 km
Hwy 389	Baie-Comeau (Hwy 138)	Newfoundland/Labrador Border	566.5 km
		<i>Total</i>	1453.8 km
<b>Newfoundland and Labrador</b>			
500	Quebec border	Labrador City (Avalon Dr.)	19.0 km
Route 500/510	Labrador City (Avalon Dr.)	Blanc Sablon Ferry Terminal	1144.0 km
		<i>Total</i>	1163.0 km