Management's Discussion and Analysis

Business risks

In the normal course of business, the Company is exposed to various business risks and uncertainties that can have an effect on the Company's results of operations, financial position, or liquidity. While some exposures may be reduced by the Company's risk management strategies, many risks are driven by external factors beyond the Company's control or are of a nature which cannot be eliminated. The following is a discussion of key areas of business risks and uncertainties.

Competition

The Company faces significant competition, including from rail carriers and other modes of transportation, and is also affected by its customers' flexibility to select among various origins and destinations, including ports, in getting their products to market. Specifically, the Company faces competition from Canadian Pacific Railway Company, which operates the other major rail system in Canada and services most of the same industrial areas, commodity resources and population centers as the Company; major U.S. railroads and other Canadian and U.S. railroads; long-distance trucking companies, transportation via the St. Lawrence-Great Lakes Seaway and the Mississippi River and transportation via pipelines. In addition, while railroads must build or acquire and maintain their rail systems, motor carriers and barges are able to use public rights-of-way that are built and maintained by public entities without paying fees covering the entire costs of their usage.

Competition is generally based on the quality and the reliability of the service provided, access to markets, as well as price. Factors affecting the competitive position of customers, including exchange rates and energy cost, could materially adversely affect the demand for goods supplied by the sources served by the Company and, therefore, the Company's volumes, revenues and profit margins. Factors affecting the general market conditions for the Company's customers can result in an imbalance of transportation capacity relative to demand. An extended period of supply/demand imbalance could negatively impact market rate levels for all transportation services, and more specifically the Company's ability to maintain or increase rates. This, in turn, could materially and adversely affect the Company's business, results of operations or financial position.

The level of consolidation of rail systems in the U.S. has resulted in larger rail systems that are able to offer seamless services in larger market areas and, accordingly, compete effectively with the Company in numerous markets. This requires the Company to consider arrangements or other initiatives that would similarly enhance its own service.

There can be no assurance that the Company will be able to compete effectively against current and future competitors in the transportation industry, and that further consolidation within the transportation industry and legislation allowing for more leniency in size and weight for motor carriers will not adversely affect the Company's competitive position. No assurance can be given that competitive pressures will not lead to reduced revenues, profit margins or both.

Environmental matters

The Company's operations are subject to numerous federal, provincial, state, municipal and local environmental laws and regulations in Canada and the U.S. concerning, among other things, emissions into the air; discharges into waters; the generation, handling, storage, transportation, treatment and disposal of waste, hazardous substances and other materials; decommissioning of underground and aboveground storage tanks; and soil and groundwater contamination. A risk of environmental liability is inherent in railroad and related transportation operations; real estate ownership, operation or control; and other commercial activities of the Company with respect to both current and past operations. As a result, the Company incurs significant operating and capital costs, on an ongoing basis, associated with environmental regulatory compliance and clean-up requirements in its railroad operations and relating to its past and present ownership, operation or control of real property.

While the Company believes that it has identified the costs likely to be incurred for environmental matters in the next several years based on known information, the discovery of new facts, future changes in laws, the possibility of releases of hazardous materials into the environment and the Company's ongoing efforts to identify potential environmental liabilities that may be associated with its properties may result in the identification of additional environmental liabilities and related costs.

In railroad and related transportation operations, it is possible that derailments or other accidents, including spills and releases of hazardous materials, may occur that could cause harm to human health or to the environment. In addition, the Company is also exposed to potential catastrophic liability risk, faced by the railroad industry generally, in connection with the transportation of toxic inhalation hazard materials such as chlorine and anhydrous ammonia, or other dangerous commodities like crude oil and propane that the Company may be required to transport as a result of its common carrier obligations. As a result, the Company may incur costs in the future, which may be material, to address any such harm, compliance with laws or other risks, including costs relating to the performance of clean-ups, payment of environmental penalties and remediation obligations, and damages relating to harm to individuals or property.

The environmental liability for any given contaminated site varies depending on the nature and extent of the contamination; the available clean-up techniques; evolving regulatory standards governing environmental liability; and the number of potentially responsible parties and their financial viability. As such, the ultimate cost of addressing known contaminated sites cannot be definitively established. Also, additional contaminated sites yet unknown may be discovered or future operations may result in accidental releases.

While some exposures may be reduced by the Company's risk mitigation strategies (including periodic audits, employee training programs and emergency plans and procedures), many environmental risks are driven by external factors beyond the Company's control or are of a nature which cannot be completely eliminated. Therefore, there can be no assurance, notwithstanding the Company's mitigation strategies, that liabilities or costs related to environmental matters will not be incurred in the future or that environmental matters will not have a material adverse effect on the Company's results of operations, financial position or liquidity, and reputation in a particular quarter or fiscal year.

Personal injury and other claims

In the normal course of business, the Company becomes involved in various legal actions seeking compensatory and occasionally punitive damages, including actions brought on behalf of various purported classes of claimants and claims relating to employee and third-party personal injuries, occupational disease, and property damage, arising out of harm to individuals or property allegedly caused by, but not limited to, derailments or other accidents. The Company maintains provisions for such items, which it considers to be adequate for all of its outstanding or pending claims and benefits from insurance coverage for occurrences in excess of certain amounts. The final outcome with respect to actions outstanding or pending at September 30, 2014, or with respect to future claims, cannot be predicted with certainty, and therefore there can be no assurance that their resolution will not have a material adverse effect on the Company's results of operations, financial position or liquidity, in a particular quarter or fiscal year.

Labor negotiations

Canadian workforce

As at September 30, 2014, CN employed a total of 17,549 employees in Canada, of which 13,192 were unionized employees. From time to time, the Company negotiates to renew collective agreements with various unionized groups of employees.

On June 19, 2014, a binding arbitration decision was rendered on the collective agreement between CN and the Teamsters Canada Rail Conference, covering approximately 3,000 mainline conductors and yard crews (TCRC-CTY). The new collective agreement will expire on July 22, 2016.

In early September 2014, the bargaining process commenced for the renewal of the following collective agreements: CN's collective agreements with Unifor (formerly Canadian Auto Workers (CAW)) governing clerical, intermodal, shopcraft employees and owner operator truck drivers; with the Teamsters Canada Rail Conference, governing rail traffic controllers (TCRC-RCTC); and with the United Steelworkers of America governing track workers. These collective agreements will expire on December 31, 2014.

The bargaining process for the renewal of the collective agreement with the Teamsters Canada Rail Conference, governing locomotive engineers (TCRC-LE) is expected to commence in the fourth quarter of 2014. This collective agreement will expire on December 31, 2014.

Disputes relating to the renewal of collective agreements could potentially result in strikes, work stoppages, slowdowns and loss of business. Future labor agreements or renegotiated agreements could increase labor and fringe benefits expenses. There can be no assurance that the Company will be able to renew and have its collective agreements ratified without any strikes or lockouts or that the resolution of these collective bargaining negotiations will not have a material adverse effect on the Company's results of operations or financial position.

U.S. workforce

As at September 30, 2014, CN employed a total of 7,483 employees in the U.S., of which 6,028 were unionized employees.

As of October 21, 2014, the Company had in place agreements with bargaining units representing the entire unionized workforce at Grand Trunk Western Railroad Company (GTW), companies owned by Illinois Central Railroad Company (ICRR), companies owned by Wisconsin Central Ltd. (WC), Bessemer & Lake Erie Railroad Company (BLE) and The Pittsburgh and Conneaut Dock Company (PCD). Agreements in place have various moratorium provisions, ranging up to 2018, which preserve the status quo in respect of the given collective agreement during the terms of such moratoriums. Some of these agreements are currently under renegotiation.

The general approach to labor negotiations by U.S. Class I railroads is to bargain on a collective national basis. GTW, ICRR, WC, BLE and PCD have bargained on a local basis. Local negotiations may not generate federal intervention in a strike or lockout situation.

Where negotiations are ongoing, the terms and conditions of existing agreements generally continue to apply until new agreements are reached or the processes of the *Railway Labor Act* have been exhausted.

There can be no assurance that there will not be any work action by any of the bargaining units with which the Company is currently in negotiations or that the resolution of these negotiations will not have a material adverse effect on the Company's results of operations or financial position.

Management's Discussion and Analysis

Regulation

The Company's rail operations in Canada are subject to (i) economic regulation by the Canadian Transportation Agency (Agency) under the *Canada Transportation Act* (CTA), and (ii) safety regulation by the Federal Minister of Transport under the *Railway Safety Act* and certain other statutes. The Company's U.S. rail operations are subject to (i) economic regulation by the Surface Transportation Board (STB) and (ii) safety regulation by the Federal Railroad Administration (FRA).

Economic regulation – Canada

The CTA provides rate and service remedies, including final offer arbitration (FOA), competitive line rates and compulsory interswitching. The CTA also regulates the maximum revenue entitlement for the movement of grain, charges for railway ancillary services and noise-related disputes. In addition, various Company business transactions must gain prior regulatory approval, with attendant risks and uncertainties.

On January 22, 2014, Transport Canada initiated a comprehensive review and consultation on the liability and compensation regime for rail. On August 1, 2014, Transport Canada launched a second stage of consultations with a view to strengthen the liability and compensation regime for railways and shippers by establishing supplementary compensation for incidents involving dangerous goods.

On March 7, 2014, the Government of Canada issued an Order in Council, requiring each of the Company and Canadian Pacific Railway Company to move progressively increasing minimum volumes of grain up to a prescribed weekly minimum of 500,000 metric tonnes. On May 29, 2014, Bill C-30 came into force. It amended the CTA by requiring the Company and Canadian Pacific Railway Company to each move at least 500,000 metric tonnes of grain weekly through to August 3, 2014. Bill C-30 also allows: (1) the Government to specify minimum amounts of grain to be moved in future grain crop years, (2) the Agency to extend current interswitching limits for specific regions or specific commodities, (3) the Agency to make regulations specifying what constitutes 'operational terms' for the purpose of the establishment of service level agreements, and (4) the Agency to order a railway company to pay shippers for expenses incurred as a result of the railway's failure to fulfill its service obligations. The amendments introduced by Bill C-30 are intended to remain in effect up to August 1, 2016, unless further extended by Parliament.

On June 25, 2014, the Government launched the statutory review of the CTA. The Government appointed a six-person panel to conduct this review. The panel's report is required to be provided to the Federal Minister of Transport 18 months after their appointment.

On August 1, 2014, the Government of Canada issued an Order in Council requiring each of the Company and Canadian Pacific Railway Company to move at least 536,250 metric tonnes of grain weekly, subject to volume demand and corridor capacity during the period of August 3, 2014 to November 29, 2014. Failure to move the prescribed minimum tonnage will be subject to an administrative monetary penalty of up to $100,000 per weekly violation.

The Company received letters from a Transport Canada Enforcement Officer requiring CN to provide detailed information and documentary evidence describing the factors that contributed to CN's failure to meet the minimum grain volume requirements in specified weeks and by how much these factors contributed to the failure.

On August 1, 2014, the Agency also issued an amendment to the interswitching regulations extending the distance to 160 kilometers from the current 30 kilometers limits for all commodities in the provinces of Manitoba, Saskatchewan and Alberta. The Agency also issued regulations defining what constitutes 'operational terms' for the purpose of rail level of service arbitrations.

No assurance can be given that any current or future legislative action by the federal government or other future government initiatives will not materially adversely affect the Company's results of operations or financial position.

Economic regulation – U.S.

The STB serves as both an adjudicatory and regulatory body and has jurisdiction over railroad rate and service issues and rail restructuring transactions such as mergers, line sales, line construction and line abandonments. As such, various Company business transactions must gain prior regulatory approval, with attendant risks and uncertainties. The STB has undertaken proceedings in the past few years in a number of areas.

On July 25, 2012, following hearings in June 2011 on the state of competition in the railroad industry, the STB commenced a proceeding to consider a proposal by the National Industrial Transportation League for competitive switching. In a first phase, parties submitted at STB's request on March 1, 2013, a wide variety of data to assess the scope and potential impact of the proposal and submitted reply comments on May 30, 2013. The STB held hearings on March 25-26, 2014 to further review these matters.

On July 18, 2013, the STB issued a decision raising relief caps and making certain other technical changes for rate complaints brought under its simplified rate guidelines and on December 12, 2013, the STB instituted a proceeding to invite comments on how to ensure its rate complaint procedures are accessible to grain shippers and provide effective protection against unreasonable grain rates.

On December 20, 2013, the STB instituted a rulemaking to review how it determines the rail industry's cost of equity capital, and on April 2, 2014, joined it with a proceeding to explore its methodology for determining railroad revenue adequacy and the revenue adequacy component used in judging the reasonableness of rail rates.

On April 11, 2014, the STB adopted final rules, effective July 15, 2014, establishing that any person receiving rail cars from a rail carrier for loading or unloading, including third parties in addition to the consignor and consignee, who detains the cars beyond the period of free time specified in a carrier's governing demurrage tariff will generally be liable for demurrage if the carrier has provided that person with actual notice of the carrier's tariff establishing such liability.

On May 29, 2014, the STB instituted an advance notice of proposed rulemaking to invite comments on whether the safe harbor provision of its current fuel surcharge rules should be modified or removed.

As part of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), the U.S. Congress has authorized the STB to investigate any railroad over whose track Amtrak operates that fails to meet an 80 percent on-time performance standard for Amtrak operations extending over two calendar quarters and to determine the cause of such failures. Compliance with this mandate began with the third quarter of 2010 and is governed by performance metrics and standards jointly issued by the FRA and Amtrak on May 12, 2010. Should the STB commence an investigation and determine that a failure to meet these standards is due to the host railroad's failure to provide preference to Amtrak, the STB is authorized to assess damages against the host railroad. On January 19, 2012, Amtrak filed a complaint with the STB to commence such an investigation, including a request for damages for preference failures, for allegedly sub-standard performance of Amtrak trains on CN's ICRR and GTW lines. CN responded on March 9, 2012 to Amtrak's complaint. CN and Amtrak entered into STB-supervised mediation until October 4, 2012, and on joint motion of the parties shortly thereafter, the STB stayed the proceedings until July 31, 2013. The Company participated in a railroad industry challenge to the constitutionality of the joint FRA/Amtrak performance metrics and standards. On July 2, 2013, the U.S. Court of Appeals for the D.C. Circuit reversed a U.S. District Court decision and determined that Congress' delegation to Amtrak of joint legislative authority with the FRA to promulgate the metrics and standards to be unconstitutional. In light of that decision, and on joint motion of the parties, the STB further stayed the proceedings until July 31, 2014, to provide time that may be necessary for a final resolution on the constitutionality of the metrics and standards pending further appeals. On June 23, 2014, the Supreme Court granted the Government's petition seeking its review of the D.C. Circuit decision and will hear the case on December 8, 2014. On August 29, 2014, Amtrak filed with the STB a motion to amend its January 19, 2012 complaint against CN to limit it to a single Amtrak service over CN's ICRR line. On September 17, 2014, CN moved to dismiss the proceeding on the basis of the D.C. Circuit's constitutionality decision or alternatively to stay Amtrak's motion pending the Supreme Court's decision.

On July 30, 2013, Amtrak filed an application with the STB requesting the agency to set terms and compensation for a new CN/Amtrak Operating Agreement to replace the one that was expiring on August 11, 2013. On August 1, 2013, CN agreed to continue to make its facilities available to Amtrak during the STB's consideration, under the terms of the expired agreement.

The U.S. Congress has had under consideration for several years various pieces of legislation that would increase federal economic regulation of the railroad industry. In the current session of Congress, legislation to repeal the rail industry's limited antitrust exemptions (S. 638) has been introduced in the Senate, as well as a bill (S. 2777) to reauthorize funding for the STB that also addresses several economic regulatory matters, such as arbitration and STB investigation of complaints. There is no assurance that these bills or other legislation to increase federal economic regulation of the railroad industry will not progress through the legislative process.

On October 8, 2014, the STB issued a decision requiring all Class I railroads to provide each week a broad range of operational data, starting October 22, 2014. The STB is seeking to provide access to rail performance data sought by shippers and to meet the STB's objective of promoting transparency, accountability, and improvements in rail service. The STB also directed that data specific to Chicago and a narrative summary of operating conditions in Chicago as well as Chicago Transportation Coordination Office (CTCO) contingency protocols and other industry-wide information be provided from individual railroads. In addition, the STB indicated that it will soon initiate a rulemaking to determine whether to institute permanent data reporting requirements on service performance.

The acquisition of the Elgin, Joliet and Eastern Railway Company (EJ&E) in 2009 followed an extensive regulatory approval process by the STB, which included an Environmental Impact Statement (EIS) that resulted in conditions imposed to mitigate municipalities' concerns regarding increased rail activity expected along the EJ&E line (see the section of this MD&A entitled Contractual obligations). The Company accepted the STB-imposed conditions with one exception. The Company filed an appeal at the U.S. Court of Appeals for the District of Columbia Circuit challenging the STB's condition requiring the installation of grade separations at two locations along the EJ&E line at Company funding levels significantly beyond prior STB practice. Appeals were also filed by certain communities challenging the sufficiency of the EIS. On March 15, 2011, the Court denied the CN and community appeals. As such, the Company has estimated remaining commitments, through to December 31, 2016, of approximately $66 million (US$59 million), in relation to the acquisition.

The STB also imposed a five-year monitoring and oversight condition, subsequently extended by one additional year to January 2015, during which the Company is required to file with the STB monthly operational reports as well as quarterly reports on the implementation status of the STB-imposed mitigation conditions. This permits the STB to take further action if there is a material change in the facts and circumstances upon which it relied in imposing the specific mitigation conditions. On November 8, 2012, the STB denied the request of the Village of Barrington, Illinois (Barrington) that the STB impose additional mitigation that would require CN to fund the full cost of a grade separation at a location along the EJ&E line in Barrington. On December 26, 2012, Barrington appealed the STB's decision to the U.S. Court of Appeals for the D.C. Circuit. On July 18, 2014, the U.S. Court of Appeals for the D.C. Circuit issued its decision denying Barrington's petition.

A first oversight audit of the Company's EJ&E's operational and environmental reporting was completed in April 2010, and after public comment was finalized by the STB in December 2010. In December 2011, the STB directed a second oversight audit that commenced on February 17, 2012, that audit was completed on April 30, 2012, and released publicly by the STB on June 18, 2012. On August 27, 2014, Barrington filed a petition requesting the STB to extend its oversight for two additional years. CN replied on September 16, 2014, in opposition to the petition.

The resolution of matters that could arise during the STB's remaining oversight of the transaction cannot be predicted with certainty, and therefore, there can be no assurance that their resolution will not have a material adverse effect on the Company's financial position or results of operations.

The Company's ownership of the former Great Lakes Transportation vessels is subject to regulation by the U.S. Coast Guard (USCG) and the Department of Transportation, Maritime Administration, which regulate the ownership and operation of vessels operating on the Great Lakes and in U.S. coastal waters. In addition, the Environmental Protection Agency (EPA) has authority to regulate air emissions from these vessels. Regulatory initiatives of these U.S. government agencies may materially adversely affect the Company's financial position or results of operations.

On November 8, 2011, the Federal Maritime Commission (FMC), which has authority over oceanborne transport of cargo into and out of the U.S., initiated a Notice of Inquiry to examine whether the U.S. Harbor Maintenance Tax (HMT) and other factors may be contributing to the diversion of U.S.-bound cargo to Canadian and Mexican seaports, which could affect CN rail operations. The Company filed comments in this proceeding on January 9, 2012. In July 2012, the FMC issued its study, which found that carriers shipping cargo through Canadian or Mexican ports violate no U.S. law, treaty, agreement, or FMC regulation. The report stated, however, that the HMT is one of many factors affecting the increased use of foreign ports for cargo bound for U.S. destinations and that amendment of the current HMT structure should be considered so as to assist U.S. seaports. On September 17, 2013, the *Maritime Goods Movement Act* (Bill S. 1509) was introduced and assigned to a congressional committee for consideration. The bill proposes to replace the HMT with a Maritime Goods Movement Fee which would be imposed on any U.S.-destined cargo regardless of its point of entry into North America. Among the bill's goals is to discourage diversion of U.S.-bound goods through Canadian or Mexican ports. A companion bill, H.R. 4105, was introduced on February 27, 2014 in the U.S. House of Representatives. No action has been taken on this legislation in the Senate or House.

No assurance can be given that any future regulatory or legislative initiatives by the U.S. federal government related to this inquiry and proposed legislation will not materially adversely affect the Company's results of operations or its competitive and financial position.

Safety regulation – Canada

Rail safety regulation in Canada is the responsibility of Transport Canada, which administers the *Canadian Railway Safety Act*, as well as the rail portions of other safety-related statutes. On May 1, 2013, Bill S-4 came into force which prohibits anyone from operating a railway without having first obtained a Railway Operating Certificate issued by the Federal Minister of Transport. The Bill also includes the ability for the government to establish Administrative Monetary Penalties in the event of contravention of prescribed provisions of the Act or regulations.

On July 23, 2013, following a significant derailment involving a non-related short-line railroad within the Province of Quebec ("Lac-Mégantic derailment"), the Federal Minister of Transport issued an Emergency Directive under the *Canada Railway Safety Act* to enhance the effectiveness of train securement procedures and safety across the Canadian rail industry and to help reduce the risk of unintended train movements that can lead to catastrophic accidents. CN has reviewed its safety policies for unattended trains and adjusted its safety practices to comply with Transport Canada's order. Transport Canada also issued an order requiring all federal railways to formulate or revise rules, as the case may be, respecting the securement of unattended locomotives and crew size requirements. On November 20, 2013, the Railway Association of Canada filed revised rules on behalf of CN and its other member railway companies in compliance with this order. On December 26, 2013, the Federal Minister of Transport issued a notice approving the revised rules.

On October 17, 2013, Transport Canada issued Protective Direction No. 31 under the *Transportation of Dangerous Goods Act* requiring any person offering crude oil for transport to test the classification of the crude oil being offered.

On November 20, 2013, Transport Canada issued Protective Direction No. 32 under the *Transportation of Dangerous Goods Act*, requiring railway companies to provide designated municipal emergency planning officials with yearly aggregate information on the nature and volume of dangerous goods the company transports by rail through the municipality.

On February 8, 2014, Transport Canada published for comments proposed new regulations for highway-railway crossings. These regulations specify specific standards for new crossings and require that existing crossings be upgraded to basic safety standards within five years.

On March 15, 2014, Transport Canada published for comments proposed new regulations governing railway operating certificates. They specify the safety and operating requirements that must be met in order to obtain a railway operating certificate, which will be an operating requirement for all federally-regulated railway carriers and local carriers operating on the railway lines of federally regulated carriers.

On April 23, 2014, Transport Canada issued an Emergency Directive under the *Railway Safety Act* requiring railway companies to operate certain trains carrying dangerous commodities at speeds not to exceed 50 miles per hour. In addition, on the same date, Transport Canada issued a separate order under the *Railway Safety Act* requiring railway companies to formulate rules that would replace the Emergency Directive on a permanent basis. These rules are under development. Transport Canada further ordered railway companies to conduct route assessments for rail corridors handling significant volumes of dangerous goods.

On April 23, 2014, Transport Canada also issued Protective Directions 33 and 34 respectively requiring an Emergency Response Assistance Plan in order to ship large volumes of flammable liquids and prohibiting the use of certain DOT-111 tank cars for the transportation of dangerous goods.

On May 17, 2014, Transport Canada published for comments proposed new regulations setting out the administrative monetary penalties that could be issued for violations of the *Railway Safety Act* and its associated regulations.

On July 5, 2014, Transport Canada published for comments proposed new *Railway Safety Management System Regulations* that would require federally regulated railway companies (and other carriers operating over federally regulated companies' trackage) to implement safety management systems.

On July 15, 2014, Transport Canada issued *Regulations Amending the Transportation of Dangerous Goods Regulations,* which specifies new standards for tank cars as well as the procedures and processes for classification of dangerous goods and sampling methods used by the consignors and carriers of petroleum crude oil.

Safety regulation – U.S.

Rail safety regulation in the U.S. is the responsibility of the FRA, which administers the *Federal Railroad Safety Act*, as well as the rail portions of other safety statutes. In 2008, the U.S. federal government enacted legislation reauthorizing the *Federal Railroad Safety Act*. This legislation covers a broad range of safety issues, including fatigue management, Positive Train Control (PTC), grade crossings, bridge safety, and other matters. The legislation requires all Class I railroads and intercity passenger and commuter railroads to implement a PTC system by December 31, 2015 on mainline track where intercity passenger railroads and commuter railroads operate and where toxic inhalation hazard materials are transported. PTC is a collision avoidance technology intended to override locomotive controls and stop a train before an accident. The Company is taking steps to ensure implementation of PTC in accordance with the new law, including working with other Class I railroads to satisfy the requirements for U.S. network interoperability. The Company's PTC Implementation Plan, submitted in April 2010, has been approved by the FRA. CN's total implementation costs associated with PTC are estimated to be US$335 million. The legislation also caps the number of on-duty and limbo time hours for certain rail employees on a monthly basis. The Company is taking appropriate steps and is working with the FRA to ensure that its operations conform to the law's requirements.

In August 2012, the FRA reported an update of the PTC implementation progress to Congress concluding that the majority of the carriers would be unable to meet the December 31, 2015 implementation deadline. In August 2013, legislation was introduced in the Senate that would delay PTC implementation by five years to the end of 2020, and in the same month, the U.S. Government Accountability Office published a report recommending that Congress give the FRA authority to extend the deadline for individual carriers on a case-by-case basis.

In May 2013, the Federal Communications Commission (FCC) suspended its normal processes to review possible impacts to historic properties, including tribal historic and cultural artifacts, of the installation of tens of thousands of poles industry-wide that are required to host PTC radio operations while it considered changes to those procedures needed to accommodate that volume. On May 16, 2014, the FCC lifted its suspension upon the Advisory Council on Historic Preservation (ACHP) approval of modifications to the FCC's usual procedures for historic preservation review. The Association of American Railroads (AAR) reported that despite these modifications, the railroad industry will still not be able to install interoperable PTC on the entire U.S. network by the December 31, 2015 deadline.

In the aftermath of the July 2013 Lac-Mégantic derailment, the FRA issued Emergency Order No. 28, Notice No. 1 on August 2, 2013 directing that railroads take specific actions regarding unattended trains transporting specified hazardous materials, including securement of these trains. That same day, FRA and the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued Safety Advisory 2013-06, which made recommendations to railroads on issues including crew staffing practices and operational testing to ensure employees' compliance with securement-related rules, as well as recommendations to shippers of crude oil to be transported by rail. In addition, the railroad industry has acted on its own to enhance rail safety in light of the Lac-Mégantic derailment and fire. Effective August 5, 2013, AAR amended the industry's Recommended Railroad Operating Practices for Transportation of Hazardous Materials (Circular No. OT-55-N) by expanding the definition of a "key train" (for which heightened operating safeguards are required) to include trains carrying one tank car load of poison or toxic inhalation hazard, anhydrous ammonia, or ammonia solutions and to include trains carrying 20 car loads or portable tank loads of any combination of hazardous materials (including ethanol and crude oil).

On August 12, 2013, the FRA established the Railroad Safety Advisory Committee (RSAC) to provide advice and recommendations to the FRA on railroad safety matters. The FRA's Emergency Order No. 28 resulted in four new tasks accepted by the RSAC. The four tasks are: train crew size; operational testing for securement; securement and hazardous material issues. Certain of the RSAC four task groups have produced recommendations that would be considered for future rulemakings. CN is an active participant in all four task groups.

On September 6, 2013, PHMSA published an Advance Notice of Proposed Rulemaking (ANPRM) considering improvement of the regulations related to the transportation by rail of hazardous materials in tank cars. On November 14, 2013, CN was a participant in AAR's comments filed with PHMSA in this proceeding, which urged PHMSA to require that all tank cars used to transport flammable liquids be retrofitted or phased out, and that new cars be built to more stringent standards. The AAR comments included specific tank cars safety standard improvements, which AAR maintained will substantially decrease the likelihood of a release if a tank car is involved in an accident.

On January 23, 2014, the National Transportation Safety Board (NTSB) issued a series of recommendations to the U.S. Department of Transportation, to address the safety risk of transporting crude oil by rail. The NTSB's recommendations complement those issued by the TSB and specifically: (1) require expanded hazardous materials route planning for railroads to avoid populated and other sensitive areas; (2) development of an FRA/PHMSA audit program to ensure that railroads carrying petroleum products have adequate emergency response capabilities to address worst-case discharges of the product; and (3) require audits of shippers and railroads to ensure that they are properly classifying hazardous materials being transported and that they have adequate safety and security plans in place.

On August 1, 2014, PHMSA published a Notice of Proposed Rulemaking aimed at improving the safe transportation of flammable liquids by rail, addressing operating rules, specifications for new tank cars, and the retrofit of existing tank cars. Concurrently, PHMSA issued an ANPRM on comprehensive oil spill response planning. CN was a participant in AAR's comments filed with PHMSA in these two proceedings on September 30, 2014. AAR addressed speed limits for trains with at least one legacy DOT-111 tank car moving flammable liquids, urged PHMSA to refrain from requiring electronically controlled pneumatic brakes on tank cars used to move flammable liquids, advocated specific increases in federal tank car specifications, requested that crude oil routing information not be disclosed to State Emergency Response Commissions, and urged a requirement for the aggressive retrofit or phase out of existing flammable liquid tank cars as soon as possible while still enabling the industry to meet the demands for rail movement of flammable liquids.

On September 10, 2014, legislation was introduced in the U.S. Senate (S. 2784) that proposes a number of new rail safety requirements, including inward and outward facing cameras and redundant signal protection to protect maintenance of way workers, while also making significant changes to FRA civil penalty levels, requiring studies on rail operations that block crossings and on train lengths, and mandating that trains transporting high-hazard flammables and operating with any legacy DOT-111 tank cars maintain a speed limit of 40 miles per hour in areas with a population of 100,000 or more. A second bill introduced in the Senate in September (S. 2858) would create strong penalties for railroads that violate safety standards, would require standardized hazardous materials information to support first responders, and improved risk-assessment and decision-making tools for railroads.

No assurance can be given that these or any future regulatory or legislative initiatives by the Canadian and U.S. federal governments will not materially adversely affect the Company's results of operations, or its competitive and financial position.

Security

The Company is subject to statutory and regulatory directives in the U.S. addressing homeland security concerns. In the U.S., safety matters related to security are overseen by the Transportation Security Administration (TSA), which is part of the U.S. Department of Homeland Security (DHS) and the PHMSA, which, like the FRA, is part of the U.S. Department of Transportation. Border security falls under the jurisdiction of U.S. Customs and Border protection (CBP), which is part of the DHS. In Canada, the Company is subject to regulation by the Canada Border Services Agency (CBSA). More specifically, the Company is subject to:

(i) Border security arrangements, pursuant to an agreement the Company and Canadian Pacific Railway Company entered into with the CBP and the CBSA.

(ii) The CBP's Customs-Trade Partnership Against Terrorism (C-TPAT) program and designation as a low-risk carrier under CBSA's Customs Self-Assessment (CSA) program.

(iii) Regulations imposed by the CBP requiring advance notification by all modes of transportation for all shipments into the U.S. The CBSA is also working on similar requirements for Canada-bound traffic.

(iv) Inspection for imported fruits and vegetables grown in Canada and the agricultural quarantine and inspection (AQI) user fee for all traffic entering the U.S. from Canada.

The Company has worked with the AAR to develop and put in place an extensive industry-wide security plan to address terrorism and security-driven efforts by state and local governments seeking to restrict the routings of certain hazardous materials. If such state and local routing restrictions were to go into force, they would be likely to add to security concerns by foreclosing the Company's most optimal and secure transportation routes, leading to increased yard handling, longer hauls, and the transfer of traffic to lines less suitable for moving hazardous materials, while also infringing upon the exclusive and uniform federal oversight over railroad security matters.

Transportation of hazardous materials

The Company may be required to transport toxic inhalation hazard materials as a result of its common carrier obligations and, as such, is exposed to additional regulatory oversight.

(i) The PHMSA requires carriers operating in the U.S. to report annually the volume and route-specific data for cars containing these commodities; conduct a safety and security risk analysis for each used route; identify a commercially practicable alternative route for each used route; and select for use the practical route posing the least safety and security risk.

(ii) The TSA requires rail carriers to provide upon request, within five minutes for a single car and 30 minutes for multiple cars, location and shipping information on cars on their networks containing toxic inhalation hazard materials and certain radioactive or explosive materials; and ensure the secure, attended transfer of all such cars to and from shippers, receivers and other carriers that will move from, to, or through designated high-threat urban areas.

(iii) The PHMSA has issued regulations to enhance the crashworthiness protection of tank cars used to transport toxic inhalation hazard materials and to limit the operating conditions of such cars.

(iv) In Canada, the *Transportation of Dangerous Goods Act* establishes the safety requirements for the transportation of goods classified as dangerous and enables the establishment of regulations for security training and screening of personnel working with dangerous goods, as well as the development of a program to require a transportation security clearance for dangerous goods and that dangerous goods be tracked during transport.

While the Company will continue to work closely with the CBSA, CBP, and other Canadian and U.S. agencies, as described above, no assurance can be given that these and future decisions by the U.S., Canadian, provincial, state, or local governments on homeland security matters, legislation on security matters enacted by the U.S. Congress or Parliament, or joint decisions by the industry in response to threats to the North American rail network, will not materially adversely affect the Company's results of operations, or its competitive and financial position.

Radio communications

The Company uses radios for a variety of operational purposes. Licenses for these activities, as well as the transfer or assignment of these licenses, require authorization of the FCC. The Company uncovered a number of instances where such authorization was not obtained and disclosed those instances to the FCC on a voluntary basis. The FCC initiated an investigation which was ultimately resolved with the Company agreeing, amongst other, to maintain internal compliance policies that the Company had instituted prior to the investigation, and implement a three-year compliance plan with additional compliance and reporting obligations.

Other risks

Economic conditions

The Company, like other railroads, is susceptible to changes in the economic conditions of the industries and geographic areas that produce and consume the freight it transports or the supplies it requires to operate. In addition, many of the goods and commodities carried by the Company experience cyclicality in demand. Many of the bulk commodities the Company transports move offshore and are affected more by global rather than North American economic conditions. Adverse North American and global economic conditions, or economic or industrial restructuring, that affect the producers and consumers of the commodities carried by the Company, including customer insolvency, may have a material adverse effect on the volume of rail shipments and/or revenues from commodities carried by the Company, and thus materially and negatively affect its results of operations, financial position, or liquidity.

Pensions

Overall returns in the capital markets and the level of interest rates affect the funded status of the Company's defined benefit pension plans.

For accounting purposes, the funded status of all pension plans is calculated at the measurement date, which for the Company is December 31, using generally accepted accounting principles. Adverse changes with respect to pension plan returns and the level of interest rates from the last measurement date may have a material adverse effect on the funded status and significantly impact future pension expense.

For funding purposes, the funded status of the Canadian pension plans is calculated to determine the required level of contributions using going-concern and solvency scenarios as prescribed under pension legislation and subject to guidance issued by the Canadian Institute of Actuaries (CIA). Adverse changes with respect to pension plan returns and the level of interest rates from the date of the last actuarial valuations as well as changes to existing federal pension legislation may significantly impact future pension contributions and have a material adverse effect on the funded status of the plans and the Company's results of operations. The Company's funding requirements are determined upon completion of actuarial valuations which are generally required on an annual basis for all Canadian plans, or when deemed appropriate by the OSFI. The latest actuarial valuations for funding purposes for the Company's Canadian pension plans, based on a valuation date of December 31, 2013, were filed in June 2014 and identified a going-concern surplus of approximately $1.6 billion and a solvency deficit of approximately $1.7 billion calculated using the three-year average of the Company's hypothetical wind-up ratio in accordance with the *Pension Benefit Standards Regulations, 1985*. Under Canadian legislation, the solvency deficit is required to be funded through special solvency payments, for which each annual amount is equal to one fifth of the solvency deficit, and is re-established at each valuation date. Actuarial valuations are also required annually for the Company's U.S. pension plans.

Pension contributions made in the first nine months of 2014 and 2013 of $106 million and $221 million, respectively, mainly represent contributions to the Company's main pension plan, the CN Pension Plan. The pension contributions are for the current service cost as determined under the Company's current actuarial valuations for funding purposes. The Company expects to make total cash contributions in 2014 of approximately $130 million for all of the Company's pension plans.

In anticipation of its future funding requirements, the Company may occasionally make voluntary contributions in excess of the required contributions mainly to strengthen the financial position of its main pension plan, the CN Pension Plan. The Company has been advised by the OSFI that voluntary contributions can be treated as a prepayment against the Company's required special solvency deficit payments. As at December 31, 2013, the Company had approximately $470 million of accumulated prepayments available to offset future required solvency deficit payments. The Company applied approximately $250 million of such prepayments during the first nine months of 2014 and will apply approximately $75 million for the remainder of the year.

On February 13, 2014, the CIA published a final report on Canadian Pensioners' Mortality (Report). The Report contains Canadian pensioners' mortality tables and improvement scales based on experience studies conducted by the CIA. Based on the CIA's report, the overall level of recent mortality experience is significantly lower than that anticipated by the mortality tables commonly used. Furthermore, improvement rates experienced in recent years have been substantially higher than commonly anticipated. The conclusions in the final Report are in-line with the draft Report that was issued in 2013 and that was taken into account in selecting management's best estimate mortality assumption used to calculate the projected benefit obligation for the December 31, 2013 year-end. The Report is not expected to have a significant impact on CN's projected benefit obligation in 2014.

The Company expects cash from operations and its other sources of financing to be sufficient to meet its funding obligations.

Trade restrictions

Global as well as North American trade conditions, including trade barriers on certain commodities, may interfere with the free circulation of goods across Canada and the U.S.

Terrorism and international conflicts

Potential terrorist actions can have a direct or indirect impact on the transportation infrastructure, including railway infrastructure in North America, and can interfere with the free flow of goods. Rail lines, facilities and equipment could be directly targeted or become indirect casualties, which could interfere with the free flow of goods. International conflicts can also have an impact on the Company's markets. Government response to such events could adversely affect the Company's operations. Insurance premiums could also increase significantly or coverage could become unavailable.

Customer credit risk

In the normal course of business, the Company monitors the financial condition and credit limits of its customers and reviews the credit history of each new customer. Although the Company believes there are no significant concentrations of credit risk, economic conditions can affect the Company's customers and can result in an increase to the Company's credit risk and exposure to the business failures of its customers. To manage its credit risk on an ongoing basis, the Company's focus is on keeping the average daily sales outstanding within an acceptable range and working with customers to ensure timely payments, and in certain cases, requiring financial security, including letters of credit. A widespread deterioration of customer credit and business failures of customers could have a material adverse effect on the Company's results of operations, financial position or liquidity.

Liquidity

Disruptions in the financial markets or deterioration of the Company's credit ratings could hinder the Company's access to external sources of funding to meet its liquidity needs. There can be no assurance that changes in the financial markets will not have a negative effect on the Company's liquidity and its access to capital at acceptable rates.

Supplier risk

The Company operates in a capital-intensive industry where the complexity of rail equipment limits the number of suppliers available. The supply market could be disrupted if changes in the economy caused any of the Company's suppliers to cease production or to experience capacity or supply shortages. This could also result in cost increases to the Company and difficulty in obtaining and maintaining the Company's rail equipment and materials. Since the Company also has foreign suppliers, international relations, trade restrictions and global economic and other conditions may potentially interfere with the Company's ability to procure necessary equipment. To manage its supplier risk, it is the Company's long-standing practice to ensure that more than one source of supply for a key product or service, where feasible, is available. Widespread business failures of, or restrictions on suppliers, could have a material adverse effect on the Company's results of operations or financial position.

Availability of qualified personnel

The Company, like other companies in North America, may experience demographic challenges in the employment levels of its workforce. Changes in employee demographics, training requirements and the availability of qualified personnel, particularly locomotive engineers and trainmen, could negatively impact the Company's ability to meet demand for rail service. The Company expects that approximately 30% of its workforce will be eligible to retire or leave through normal attrition (death, termination, resignation) within the next five-year period. The Company monitors employment levels to ensure that there is an adequate supply of personnel to meet rail service requirements. However, the Company's efforts to attract and retain qualified personnel may be hindered by specific conditions in the job market. No assurance can be given that demographic or other challenges will not materially adversely affect the Company's results of operations or its financial position.

Fuel costs

The Company, like other railroads, is susceptible to the volatility of fuel prices due to changes in the economy or supply disruptions. Fuel shortages can occur due to refinery disruptions, production quota restrictions, climate, and labor and political instability. Rising fuel prices could materially adversely affect the Company's expenses. As such, CN has implemented a fuel surcharge program with a view of offsetting the impact of rising fuel prices. The surcharge applied to customers is determined in the second calendar month prior to the month in which it is applied, and is calculated using the average monthly price of West-Texas Intermediate crude oil (WTI) for revenue-based tariffs and On-Highway Diesel (OHD) for mileage-based tariffs. Increases in fuel prices or supply disruptions may materially adversely affect the Company's results of operations, financial position or liquidity.

Foreign currency

The Company conducts its business in both Canada and the U.S. and as a result, is affected by currency fluctuations. The estimated annual impact on net income of a year-over-year one-cent change in the Canadian dollar relative to the US dollar is in the range of $10 million to $15 million. Changes in the exchange rate between the Canadian dollar and other currencies (including the US dollar) make the goods transported by the Company more or less competitive in the world marketplace and thereby may adversely affect the Company's revenues and expenses.

Reliance on technology

The Company relies on information technology in all aspects of its business. While the Company has business continuity and disaster recovery plans, as well as other mitigation programs in place, a cyber security attack and significant disruption or failure of its information technology and communications systems could result in service interruptions, safety failures, security violations, regulatory compliance failures or other operational difficulties and compromise corporate information and assets against intruders and, as such, could adversely affect the Company's results of operations, financial position or liquidity. If the Company is unable to acquire or implement new technology, it may suffer a competitive disadvantage, which could also have an adverse effect on the Company's results of operations, financial position or liquidity.

Transportation network disruptions

Due to the integrated nature of the North American freight transportation infrastructure, the Company's operations may be negatively affected by service disruptions of other transportation links such as ports and other railroads which interchange with the Company. A significant prolonged service disruption of one or more of these entities could have an adverse effect on the Company's results of operations, financial position or liquidity. Furthermore, deterioration in the cooperative relationships with the Company's connecting carriers could directly affect the Company's operations.

Weather and climate change

The Company's success is dependent on its ability to operate its railroad efficiently. Severe weather and natural disasters, such as extreme cold or heat, flooding, drought, hurricanes and earthquakes, can disrupt operations and service for the railroad, affect the performance of locomotives and rolling stock, as well as disrupt operations for both the Company and its customers. Climate change, including the impact of global warming, has the potential physical risk of increasing the frequency of adverse weather events, which can disrupt the Company's operations, damage its infrastructure or properties, or otherwise have a material adverse effect on the Company's results of operations, financial position or liquidity. In addition, although the Company believes that the growing support for climate change legislation is likely to result in changes to the regulatory framework in Canada and the U.S., it is too early to predict the manner or degree of such impact on the Company at this time. Restrictions, caps, taxes, or other controls on emissions of greenhouse gasses, including diesel exhaust, could significantly increase the Company's capital and operating costs or affect the markets for, or the volume of, the goods the Company carries thereby resulting in a material adverse effect on operations, financial position, results of operations or liquidity. More specifically, climate change legislation and regulation could affect CN's utility coal customers due to coal capacity being replaced with natural gas generation and renewable energy; make it difficult for CN's customers to produce products in a cost-competitive manner due to increased energy costs; and increase legal costs related to defending and resolving legal claims and other litigation related to climate change.