Canada’s Grain Gateways and Corridors: Competing Globally

December 3, 2010

Presented by:
Transport Institute
WESTAC

CONFERENCE SPONSORS:
Thunder Bay Port Authority
Aikins, MacAulay & Thorvaldson
Port Metro Vancouver
Agrifood Central de México S de RL de CV
Canada’s Grain Gateways & Corridors: Competing Globally

Delta Winnipeg, Manitoba
Friday, December 3, 2010

The 15th annual Fields on Wheels Conference will review Canada’s diverse gateways and corridors. Each corridor/gateway combination has special characteristics and opportunities that benefit producers and shippers, strengthen our trade relationships and global customers, and support the well-being of Canadians.

8:00 – 8:25 am Registration and Continental Breakfast

Morning Chairperson

Dr. Barry Prentice, Professor, Transport Institute

8:30 – 8:45 a.m Opening Remarks - Mr. John Spacek, Assistant Deputy Minister Transportation Policy and Motor Carrier Divisions, Manitoba Infrastructure and Transportation

Session 1 Market and Regulatory Review - Global grain markets are affected by shifting tastes, markets, competitors and global routes. Delegates will hear about market demand and competition; the potential impact of the Panama Canal expansion; the landbridge vs. all-water route; and environmental restrictions, both in terms of the product and how the supply chain handles it. As well, the recommendations of the Rail Freight Service Review panel will be discussed.

8:45 – 9:45 am Mr. Rick Steinke, Vice President, Logistics, Canadian Wheat Board

Mr. Bruce Burrows, Vice President, Public & Corporate Affairs
The Railway Association of Canada

Roundtable Discussion

9:45 – 10:15 am Networking Break
– Sponsored by Aikins, MacAulay & Thorvaldson LLP

Session 2 West - The Pacific corridors grew rapidly and have faced congestion and bottlenecks. This session will address both the reliability and the achievements of these challenged routes, including discussion of the costs related to services, fees, demurrage and dispatch.

10:15 – 11:45 am Mr. Mike Cory, Senior Vice-President-Operations, Western Region, CN

Mr. Greg Wirtz, Manager Trade Development, Port Metro Vancouver

Mr. Andrew Hamilton, Manager of Strategic Development, Prince Rupert Port Authority

Roundtable discussion
12:00 – 1:30 pm  Luncheon Chair:  Mrs. Diane Gray, President & CEO, CentrePort Canada

Keynote Speaker:
Mr. John Law, CEO, Global Transportation Hub Authority

Luncheon sponsored by Port Metro Vancouver

Afternoon Chairperson
Ruth Sol, President, WESTAC

Session 3  North & East - This session will address how markets and traffic flows have changed and the impact on eastern corridor, including Thunder Bay and the St. Lawrence Seaway. It will also consider the northern route, whether it is a real option and the potential of the Hudson Bay Corridor and an open Northwest Passage.

1:30 – 2:45 pm  Mr. Brant H. Randles, President, Louis Dreyfus Canada

Mr. Tim Heney, CEO, Thunder Bay Port Authority

Mr. Mike Ogborn, Managing Director-Government & Public Affairs, OmniTRAX

Roundtable Discussion

2:45 – 3:15 pm  Networking Break
– Sponsored by Agrifood Central de México S de RL de CV

Session 4  South – This session will consider the southbound corridors for grain –what impacts their success, who the customers are, and how this business is affected by traceability, exchange rates, and politics. What is needed for the Mid-Continent Trade Corridor to thrive?

3:15 – 4:15 pm  Mr. Jim Nadalini, Director of Public Private Partnerships, BNSF Railway

Dr. Ed Tyrchniewicz Senior Scholar, University of Manitoba

Roundtable Discussion

4:15 pm  Rapporteur
Mr. John DePape

4:30 pm  Closing Remarks

General Conference Supporter:  Thunder Bay Port Authority
Global Market: CWB’s Perspective
Canada’s Grain Gateways & Corridors: Competing Globally

Rick Steinke
Vice President, Logistics
Outline

• Current Environment

• Global Markets
  – Market Drivers & Trends
    – Climate Change
    – Volatility
    – Customer Demand
    – Competition
Current Environment
Satellite image – unplanted area
Western Canada: Supply Summary

![Bar chart showing supply summary for different years.](chart.png)
Global Grain Markets: Drivers & Trends
Climate Change: Trend
US winter wheat: Improvement of SRW state, but dryness persists in Western and Southern Plains for HRW.
Cumulated rainfall: 4 and 8 days

Zone of affected harvest

Prime Hard Zone
Black Sea Area: Warm & No Snow Cover
Volatility Trend
Commodity Trading Advisors (CTA) Speculators
source: BarclayHedge

Agricultural Traders (subsector of CTA's)
Assets Under Management - Historical Growth of Assets
Canadian Dollar

CAD=USD

Euro (2010)

USD=EURO

U.S. corn carryout and days of use

Source: USDA – November 2010
World Wheat Stocks—Year on year change

Crop Year

Source: USDA
World Durum Production less Consumption (MT)
Durum FOB Prices

North American crops quality issues

Euro Strengthening

Deteriorating quality in Italy, Spain and Greece

2 HAD Gulf  French La Nouvelle  2HAD Duluth
Customer Demand: Trends
Percent urban population

Source: Population Reference Bureau 2010
# Population

<table>
<thead>
<tr>
<th>Average Annual Growth</th>
<th>Population (in millions)</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2009-2018 Average</td>
<td>Mid Year 2009</td>
<td>Mid Year 2013</td>
<td>Mid Year 2018</td>
</tr>
<tr>
<td><strong>Western Europe</strong></td>
<td>0.1%</td>
<td>401.3</td>
<td>403.8</td>
<td>405.6</td>
</tr>
<tr>
<td><strong>Eastern Europe</strong></td>
<td>-0.2%</td>
<td>120.2</td>
<td>119.5</td>
<td>118.4</td>
</tr>
<tr>
<td><strong>CIS &amp; Baltics</strong></td>
<td>-0.1%</td>
<td>283.3</td>
<td>281.9</td>
<td>279.8</td>
</tr>
<tr>
<td><strong>Africa</strong></td>
<td>2.2%</td>
<td>996.5</td>
<td>1,087.6</td>
<td>1,207.5</td>
</tr>
<tr>
<td><strong>Middle East</strong></td>
<td>1.6%</td>
<td>278.9</td>
<td>297.8</td>
<td>323.3</td>
</tr>
<tr>
<td><strong>Asia-Pacific</strong></td>
<td>1.0%</td>
<td>3,745.9</td>
<td>3,911.3</td>
<td>4,111.3</td>
</tr>
<tr>
<td><strong>Latin America</strong></td>
<td>1.2%</td>
<td>587.5</td>
<td>616.5</td>
<td>651.1</td>
</tr>
<tr>
<td><strong>North America</strong></td>
<td>0.8%</td>
<td>340.7</td>
<td>353.9</td>
<td>370.9</td>
</tr>
<tr>
<td><strong>Oceania</strong></td>
<td>1.0%</td>
<td>31.6</td>
<td>34.7</td>
<td>39.8</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td>1.1%</td>
<td><strong>6,790.1</strong></td>
<td><strong>7,110.8</strong></td>
<td><strong>7,507.9</strong></td>
</tr>
</tbody>
</table>
Import trends: Wheat

Europe: +29%
Africa: +32%
Middle East: +13%
Asia: +14%
Latin America: +14%

115 MT (2009-10)
122 MT (2011-12)
132 MT (2013-14)

Years: 1999-00 to 2017-18
Import trends: Durum

- 7.0 MT
- 7.5 MT
- 8.4 MT

Percentage increases:
- +28%
- +36%
- +4%

Regions:
- Europe
- Africa
- Middle East
- Asia
- Latin America

Years:
- 1999-00
- 2001-02
- 2003-04
- 2005-06
- 2007-08
- 2009-10
- 2011-12
- 2013-14
- 2015-16
- 2017-18
Grain Shipment Trends: 2018

Percentage Change

- West: 8%
- East: 24%
- South: 14%
- North: 24%
Customer Voice

More Specific Quality

Lower Inventory

Consistent Quality

Consistent Delivery
Global Competition
Growing Region Distance from Water
(kms from growing region to port)

- W. Canada: 1250 - 3300
- USA: 650 - 1450
- Argentina: 150
- France: 250
- Russia: 200 - 400
- Ukraine: 350
- Australia: 425
Prairie to Port

- Prince Rupert: 1275 miles
- Vancouver: 1100 miles
- Saskatoon
- Churchill: 900 miles
- Thunder Bay: 900 miles
- US Gulf
- U.S./Mexico Mills
- Port Cartier
- Baie-Comeau
- Quebec
- Three Rivers
- Sorel
- Montreal

900 miles
2100 miles
Pace of deliveries of new vessels

Note - scrapping activity remains limited
Daily hire (timecharter average) by market segment

- **Handysize 28,000 dwt**
- **Supramax 52,000 dwt**
- **Panamax 76,000 dwt**
Advancing Railway Service within the Freight Logistics Supply Chain

Transport Institute/WESTAC “Fields on Wheels” Conference

Bruce Burrows, Vice President, Public and Corporate Affairs
The Railway Association of Canada

Winnipeg, Manitoba
December 2, 2010
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2. Railways: An Economic Enabler
3. Rail Freight Logistics Supply Chain
4. Benefits of Rail Regulatory Environment
5. Federal Rail Freight Service Review
6. Going Forward
7. Conclusion
1. The RAC & Canada’s Railways

- RAC represents the Canadian rail industry
  - Some 55 freight, commuter, intercity and tourist railways
  - An affiliation with more than 500 rail industry suppliers
  - Growing Associate Membership

- Core rail representation from all sectors
  - Class 1s: CN, CP and U.S. carriers
  - Short Lines: Over 40 across Canada
  - Passenger: Commuter, Intercity and Tourist

- RAC = One Industry Voice
Bottom Line: Canada’s railways operate and compete within an integrated North American rail system.
2. Railways: An Economic Enabler

*Key to Canadian Recovery*

- Coast-to-Coast: contribute $11 billion annually to the economy
- Handle 75% of surface traffic; over 4 million carloads & containers annually
- Employ more than 35,000; suppliers another 50,000
- 1/3 of Canada’s GDP is exported; rail moves more than 60% of that volume
- Efficiently use fuel; a leader in reduction of GHGs (only 3% of transport GHGs)
- Enhance mobility and tourism, moving millions of commuters & inter-city travellers annually

**Freight Mix 2009**

- International 30%
- Transborder & U.S. 47%
- Domestic 23%

*Source: CN and CP*
3. Rail Freight Logistics Supply Chain

- Rail is an economic enabler; rail has shifted from local to global transportation markets; partner with Canadian ports on various products

- International trade continues to seek most cost effective routings
  - Vancouver, Montreal, Prince Rupert, Halifax
  - US port/rail and sourcing competition remain strong

- Canada a convenient entry point for NAFTA market place

- Customers now look at overall effectiveness, cost and reliability of transparent, integrated supply chains

**Bottom Line:** Transportation systems must be globally seamless.
4. Benefits of the Rail Regulatory Environment

**Benefits to Customers**

- Regulatory measures taken, primarily through the passage of the CTA(1996), have greatly benefited railways and customers:
  - Labour productivity up by more than 200% since 1990
  - Increased investment in capital investment-infrastructure and rolling stock
  - Growth in competition for transportation services
  - Canada’s rail freight rates are among the lowest in the world

**Bottom Line:** Railways are incented to meet market demands.
Examples of Customer Protection Provisions (CTA):

- **Level of Service**: Obligations as defined under the Act

- **Interswitching and competitive line rates (CLRs)**: forms of regulated competition that are available to most shippers

- **Final Offer Arbitration (FOA)**: Can be used by shippers to challenge the rate offered by the railway through a negotiation process

- **Charges for incidental services**: Opportunity to challenge charges

**Bottom Line**: Best mechanisms are commercial. However, regulatory provisions, if necessary, provide balance of interests of railways and customers.
Rail Regulatory Environment (cont’d)

Benefits to the Railway Supply Chain

Rail has also benefited:

- Operating in a commercially based freight transportation system—ability to attract capital

- Significant increase in capital expenditures, average of over $2 billion annually since 2005

- Creation of short line railways. Prior to 1996 there were only 12 short line railways in Canada versus nearly 40 today

Bottom Line: Regulatory stability is allowing railways to invest more.

Source: CN & CP Annual Reports
5. Federal Rail Freight Service Review

- The RAC supports a fact based approach to assessing rail freight service in Canada

- The RAC supported the Rail Freight Service Review Panel’s objectives—Panel failed to study the whole logistics chain

- Supply chains are complex
  - Panel focused on rail: only one participant within the freight logistics supply chains
  - In interconnected supply chains, actions of one affect performance of others

- The RAC is skeptical of “one size fits all” solutions

**Bottom Line:** The Panel’s final recommendations need to improve supply chain operations for all elements.
6. Grain Service

- Rail is focused on improving all grain supply chains
  - Widening range of grains, crops and processed products
  - Late ship arrivals related “waterfront” concerns
- Rail moved record volumes in 2009 and 2010
  - 2008/09 & 2009/10: back-to-back highest-ever exports through Vancouver grain terminal elevators. Strong push to get supply to market
  - Amid strong non-grain traffic levels and challenging weather conditions in western Canada
- Continuous improvement
  - New scheduled grain service had enhanced supply chain performance in 2010
  - Commercial incentives and mutual trust are catalysts for innovation and progress
  - Grow by making customers in the Canadian grain industry more competitive in world markets

**Bottom Line:** Interventionist regulatory measures would turn the clock back 20 years—impede innovation and slow progress
7. Going Forward

- The Rail Freight Review Panel has opportunity to put forth final recommendations that build upon successes realized over the last 15 years
- Commercial solutions are preferable to prescriptive regulatory interventions
- The over-arching goal must be increasing supply chain coordination
- Anecdotal finger pointing about past events is not a path to continuous improvement
- Fact based clarity on accountabilities and performance across all supply chain participants is welcomed by the RAC
- Railways have implemented a number of important initiatives to bolster service; others in chain must do the same
- Positive momentum needs to continue

Bottom Line: Commercial recommendations from the Panel can improve Canada’s world class rail freight supply chain.
8. Conclusion

- The railway supply chain requires a stable regulatory environment

- The regulatory framework must provide the appropriate balance between all participants

- Transportation service providers need to better leverage their modal advantages—sound data and coordination is required

- Staying the course with a commercial framework is the best way to encourage investments and sustain service innovation, with lasting benefits for customers
West: Vancouver & Prince Rupert Gateways

Mike Cory, Senior Vice President, Western Region

15th Annual Fields on Wheels Conference

Winnipeg, Manitoba

December 3, 2010
Interrelated Supply Chains

Canadian Grain Farms
45,000 grain farms
Average 50M tonne crop

Country Elevator
Other Loaders
273 delivery rail pick-up points
5.9M tonnes stored

Railcars
19,000 rail route miles
More than 20,000 hopper cars

Port Elevators
Other Unloaders
16 terminal elevators
2.6M tonnes storage
Product segregation

Bulk Vessel
Container Vessel
Export Sales
Average export 24M tonnes
Ports on three coasts

Each participant is key to the performance of the grain supply chains
<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Assigned Crews</th>
<th>Thru Freight Crew</th>
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</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>Trochu</td>
<td>2nd spot</td>
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<tr>
<td>Monday</td>
<td>Unity</td>
<td>Gaudin</td>
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<td>Tuesday</td>
<td>Equity</td>
<td>Lamont</td>
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<td>Lavoy</td>
<td>Camrose</td>
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<td>Thursday</td>
<td>Joffre</td>
<td>Vermillion</td>
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<td>Friday</td>
<td>Marshall</td>
<td>Viking</td>
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<tr>
<td>Saturday</td>
<td>Morinville/Westlock</td>
<td>2nd spot</td>
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</table>
SGP Results: Country Spotting

- Launched in early 2010, delivering at an average of 91%
- Allowing better scheduling for producer delivery to elevators
- Strategic pools of empties at key locations

Grain Origin Spotting Performance
(vs day promised, since May 2010)
SGP Results: Loaded Transit Time

Reliable spotting and consistent loaded transit is enabling supply chain partners to plan and operate more effectively.

Grain Loaded Transit Time Performance
(monthly average, by hub since January 2010, including 24 hrs loading time)

Example: Service for Edmonton Hub

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Edmonton hub to Vancouver
Edmonton hub to Prince Rupert
Supply Chain Innovation – Export Grain

Foundation to improve supply chain from field to ship
### Grain Supply Chain Performance: Then vs. Now

<table>
<thead>
<tr>
<th>Country Elevator (Average days in store)</th>
<th>Rail (Loaded transit)</th>
<th>Terminal Elevator (Average days in store)</th>
<th>Avg Total Days in GHTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1999/00</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>41.7 days</td>
<td>9.2 days</td>
<td>18.6 days</td>
<td>69.4 days</td>
</tr>
<tr>
<td>33% change</td>
<td></td>
<td></td>
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<tr>
<td><strong>2008/09</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.7 days</td>
<td>6.1 days</td>
<td>16.7 days</td>
<td>51.2 days</td>
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<tr>
<td>34% change</td>
<td>10% change</td>
<td>26% change</td>
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- Grain now moves faster through country elevator and rail systems

Source: Grain Monitor Program, 2008/09 annual report
Licensed storage capacity of terminal elevators is the same as in 1980’s.
West Coast Terminal Elevators: Then and Now

Terminal Elevator Capacity Turnover Ratio = Throughput/Licensed Capacity
(Source: CGC, GTA & Grain Monitor data, CN analysis)

- Recent capacity turnover ratios are similar to record 1991/92 year
- To increase exports will require higher capacity utilization
## Sources of increased complexity

- Bigger vessel size. Variable arrival pattern
- More grains and grades/varieties, requiring separate binning, without any increase in licensed elevator storage capacity
- Weather-related delays to vessel loading: no progress

## Supply Chain implications

- Bigger upstream impact when a vessel is delayed or fails inspection
- High stock levels. Broken space. Unpredictably “out of space” to unload cars
- Downtime in critical Nov-Mar peak period

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From railway perspective, waterfront is key to improving supply chain

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Supply Chain Performance: Then vs Now
Interrelated Country and Port Performance

Grain Origin Spotting Performance VS Day Promised since May 2010

Port Supply Chain Performance (Weekly Unloads/Loads on Wheels, @ Vancouver)

Country spotting performance directly related to performance of all supply chain participants
Interrelated Country and Port Performance

Grain Origin Spotting Performance VS Day Promised since May 2010

Port Supply Chain Performance (Weekly Unloads/Loads on Wheels, @ Vancouver)

Each participant contributes to performance of grain supply chain
Supply Chain Collaboration Agreements

- An innovative framework to improve customer service and productivity
- Establish clear performance standards for all supply chain partners
- Align all supply chain partners
Fields on Wheels

Winnipeg, MB

December 3rd, 2010
Presentation Outline

Agenda

- Business Overview
- Leading change in the Gateway
- Collaboration
- Capacity
- Question & Analysis
The prairie provinces are responsible for approximately 42% of PMV’s export in terms of tonnage.

Based on 2009 data.
Business Overview
Grain Terminals at PMV

Cascadia Grain Terminal

Alliance Grain Terminal

Cargill Terminal

Pacific Elevator

Richardson Terminal
Leading change in the Gateway
Collaboration, commitment and accountability
Collaboration
APGCI Trade Areas

North Shore Trade Area Program
• Cost: $225 million
• PMV Investment: up to $59 million (including Lynn Creek Bridge project)
• # of Projects: 6

South Shore Trade Area Program
• Cost: $125 million
• PMV Investment: up to $58 million
• # of Projects: 2

Roberts Bank Rail Corridor Program
• Cost: $300 million
• PMV Investment: up to $50 million
• # of Projects: 9
Capacity
Terminal Investments

DP3 increased capacity at Deltaport by up to 600,000 TEUs by adding a third berth and 20 hectares of container storage facilities to the existing two-berth container terminal.

An agri-product bulk handling facility is being constructed at Fraser Surrey Docks.
Conclusion

Thank you.

Greg Wirtz
Manager
Trade Development

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Vancouver, BC Canada V6C 3T4
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fax: 1.866.284.4271
portmetrovancouver.com
Welcome to North America’s Leading Edge
PRINCE RUPERT OPPORTUNITY

FIELD ON WHEELS CONFERENCE
WINNIPEG DECEMBER 2010
AGENDA

Who We Are
Strategic Advantages
Facilities Overview
Container Terminal Project & Growth Plans
Building the Gateway – Ridley Island Development Plans
AGENDA

Who We Are
Strategic Advantages
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WHO WE ARE

Our Mandate - Letters Patent
- Commercially viable
- Autonomous and governed by a Board of Directors
- Steward of Crown’s Assets:

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Total Land Holdings</td>
<td>965.60 ha</td>
</tr>
<tr>
<td>Owned Harbour</td>
<td>14,000 ha</td>
</tr>
<tr>
<td>Navigable waters footprint</td>
<td>&gt;350 km of coastline</td>
</tr>
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Our Value Add
- Facilitating and expanding the movement of cargo and passengers
- Overall planning, development, marketing and management of the commercial port facilities.

Our Vision
To be a leading trade corridor ‘gateway’ between North American and Asian markets.
AGENDA

Who We Are
Strategic Advantages
Facilities Overview
Container Terminal Project & Growth Plans
Building the Gateway – Ridley Island Development Plans
STRATEGIC ADVANTAGES

• Closest North American Port to Asia
• Deepest natural harbor in North America
• Safe, sheltered & efficient access from international shipping lanes
• Exceptional community & labor support for expansion
• Superior/uncongested rail connection to North American heartland
STRATEGIC ADVANTAGES

Closest North American Port to Asia

- Closest North American Port to Asia
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- Superior/uncongested rail connection to North American heartland
- Exceptional community & labor support for expansion
STRATEGIC ADVANTAGES
Closest North American Port to Asia
STRATEGIC ADVANTAGES
Port, Harbor & Community

- Closest North American Port to Asia
- Deepest natural harbor in North America
- Safe, sheltered & efficient access from international shipping lanes
- Exceptional community & labor support for expansion
- Superior/uncongested rail connection to North American heartland
STRATEGIC ADVANTAGES
Extensive Market Reach with Competitive Transit Times

- Closest North American Port to Asia
- Deepest natural harbor in North America
- Safe, sheltered & efficient access from international shipping lanes
- Superior/uncongested rail connection to North American heartland
- Exceptional community & labor support for expansion
RAIL SYSTEM EFFICIENCY AND PERFORMANCE

- Best crossing of Rocky Mountains from west coast - Rail grade under 1%,
- Trains run longer, faster (less urban congestion)
- Reliable - Fewer weather-related interruptions
- No congestion at port or on main line (<25% utilization)
- CN invested in capacity expansion and upgrades
- Acquisition of complimentary rail systems (EJ&E)

11,000-foot CN Container Train along Skeena River
RAIL SYSTEM EFFICIENCY AND PERFORMANCE

Figure 2: Route profile, Prince Rupert to Chicago

Figure 3: Route profile, Los Angeles to Chicago

Figure 4: Route profile, Seattle to Chicago
AGENDA

Who We Are
Strategic Advantages
Facilities Overview
Container Terminal Project & Growth Plans
Building the Gateway – Ridley Island Development Plans
Ridley Terminals Inc.

- Automated 100 acre terminal
- Unloads trains @ 6,000 tonnes/hr
- Loads ships @ 9,000 tonnes/hour
- 12 million tonne annual shipping capacity
- 1.2 million tonne storage capacity
- Handling coal, pet. coke & wood pellets
Prince Rupert Grain Ltd.

- Modern high-throughput facility
- 7 million tonne annual capacity
- 4,000 tonne/hr loading rate
- 202,000 tonne storage capacity
- Berth ships to 145,000 DWT
- Grain clean capabilities
2009 Wheat Shipments

- Middle East: 68%
- South East Asia: 18%
- South America: 14%

2009-10 Crop Year

- Canada Wheat Board (CWB) exported 18.5 Million tonnes in 2009
- CWB west coast export 11.5 Mt
- PRG 4.3Mt or 38% of WC volume
- PRG handled 21% of Canadian WC Agri Cargo in 2009.
Fairview Container Terminal – Phase 1

- > 98% marine-to-rail intermodal
- Design capacity: 500,000 TEUs
- 360 meter container quay
- 17.0 meter berth depth (low tide)
- 3 Ultra Post Panamax Cranes
- Container Yard capacity @ 4 high = 9,430 TEUs
- Reefer stacks with 72 plugs
- 7 working tracks (5,500m), 6 storage tracks (6,100m)
- 4 Radiation Scanning Portals; on-site VACCIS screening
TOTAL PORT-WIDE TRAFFIC
AGENDA

Who We Are
Strategic Advantages
Facilities Overview
Container Terminal Project & Growth Plans
Building the Gateway – Ridley Island Development Plans
FAIRVIEW CONTAINER TERMINAL
UNIQUE SERVICE APPROACH

VELOCITY

Focus: on-dock intermodal

Simplicity of operation

FLUIDITY

Responsive, flexible and adaptable

Cooperation and collaboration of partners
TERMINAL OPERATIONS

MARINE / RAIL INTERFACE

- Load direct from vessel to unit train
- Build train on terminal
- Scheduled rail service
- Non stop service to destination

TERMINAL FLOW

- Minimal truck operation
- Scheduled coordination of trucking with terminal (pick up / drop off)
- Maher train crews
- High terminal productivity
PERFORMANCE TO DATE

- Two vessel calls per week
- 108 Vessel Calls in 2009
- 2008 - 181,000 TEUs handled
- 2009 -- 263,000 Dec, up 45%
- 2010 – projected 300,000+ TEUs
- Short dwell time at the port
- Rail leg average to Chicago: 100 hrs
- 100% of containers scanned on system – VACIS and radiation
RELIABILITY + COST = GROWTH

% Change in TEU Volume YoY by Quarter
<table>
<thead>
<tr>
<th>Prince Rupert's Value Proposition</th>
<th>Proof of the Proposition</th>
</tr>
</thead>
</table>
| **Speed**                         | • 1.5 - 3 days closer to Asia (sailing)  
• Short terminal / port dwell time  
• 4 – 8 days savings in total transit time |
| **Reliability**                   | • Minimal congestion at port or within rail system  
• Little to no variability in service  
• Consistent and reliable transit times into Chicago and Memphis, as well as central Canada |
| **Cost**                          | • Service is price competitive  
• Lower total logistics cost for shipper  
• Reliability improves supply chain predictability |
| **Flexibility**                   | • Logistics –  
import: transload, re-route, hold back, modify inventory;  
export: containerize cargo at a natural “eddy”, at the port |
CONTAINERIZED LOADED EXPORT VOLUMES

- 2007: 0 TEUs
- 2008: 20,000 TEUs
- 2009: 30,000 TEUs
- 2010 YTD Oct: 50,000 TEUs

- TEUs
- Estimate TEUs
CONTAINER EXPORT LOGISTICS

Proof of Concept - Potential Projects

Supply Chain Issue / Market Opportunity
• only one option for Canadian exports; and,
• majority of containerized cargo is stuffed at the port (96% of lumber, 87% of wood pulp and 73% of specialty crops).

Scope of Proof of Concept
• QCI Consulting identified:
  – Factors affecting export decisions regarding supply chain configuration;
  – Factors influencing shipping lines’ equipment allocation;
  – Steps to competitively position the PoPR in the development of containerized export traffic.

Prince Rupert Opportunity
• “companies recognized that the constraints in growth for Vancouver container port facilities are primarily in the difficulty of coordinating off dock activities in the Lower Mainland. It is congestion in off-dock activities that is seen as limiting Vancouver’s growth…”

Conclusions
• “wood pulp and specialty crop shippers identified the limited capacity available to support container stuffing at the port…issues with lack of competition…were listed by both forest product companies and specialty crop shippers.”
• “Shippers believe that Prince Rupert’s major strength was the lack of congestion at the port and good rail service.”
CONTAINER IMPORT LOGISTICS

Proof of Concept - Potential Projects

- **Supply Chain Issue / Market Opportunity** -- Identify and test PR Value Proposition of *speed, reliability, cost* and identify and quantify the need for “*flexibility*” of Supply Chain at Port of PR.

- **Scope of Proof of Concept** – WCL:
  - Senior Management of 45 of the top 100 Beneficial Cargo owners including 4 of top 10 US importers (Walmart, Target, Sears, Costco, Nike, Toys R Us, Nissan, Dollar Tree) and 13 top 3PLs (including CEVA, UPS, Kuehne & Nagel, OEC, NYK Logistics)
  - quantified need of transload, inland ports, visibility, deconsolidation, value added logistics, warehousing, fulfillment centre FTZ.

**Prince Rupert Opportunity** -- “51% of BCOs stated that they would “likely” or “highly likely” increase imports through the PoPR if more flexible options were provided”.

**Conclusion**: PoPR’s value proposition “timing, reliability, TL cost” all rate as extremely important supply chain strategy drivers, a new value proposition of “flexibility” rates as very important.
Fairview Container Terminal

Phase II

- Estimated Completion: 2015
- Increase throughput to 2 million TEUs
- Extend quay 800+ meters
- Expand terminal area to 53+ hectares
- 9 Ultra Post-Panamax cranes
- Berth Depth: > 18 metres
- Increase Container Yard capacity to 25,000 TEUs
- Add up to 144 reefer slots
- Increase Intermodal Yard to 9,144 meters
MANAGING EXPANSION

Preserving Our Value Proposition

- **Cost**
  - Port service costs go down with increased traffic

- **Speed / Transit Time**
  - Matching capacity - CN adding train service, Maher adding cranes

- **Flexibility - New services**
  - Expedited services – truck and air cargo
  - Stuffing at port

- **Reliability**
  - Planned interruptions with expansion (communication & collaboration)
  - Incremental development
  - Managing truck traffic onto terminal

- **Reliability (Visibility)**
  - Service agreement with CN, Port, Maher
  - Gateway KPIs measure and monitor performance of supply chain
AGENDA

Who We Are
Strategic Advantages
Facilities Overview
Container Terminal Project & Growth Plans
Building the Gateway – Ridley Island Development Plans
DEVELOPMENT VISION

Defining the development opportunities

• **Guiding principal – Planning in Common**
  - Existing Terminal tenants
  - Responding to shippers needs
  - Creating regional opportunity

• **Key strategic themes**
  - Building upon existing underutilized terminal infrastructure
  - Maximizing development utility of limited property
  - Integrated development clusters
  - Innovation
  - Mitigation of potential future activity conflicts
  - Create platform for value-added activities to maximize the economic opportunity for the community and region
Rail Corridor
Land bank for growth and diversification of cargo at existing terminals
CANPOTEX POTASH TERMINAL DEVELOPMENT

• Planning and engineering
  – Project planning continues with PRPA/CN team interfacing with Canpotex engineers

• Environmental Assessment
  – The Scope of Assessment is drafted and ready for public comment upon re-commencement of the EA.

• FN Engagement
  – Economic Benefits discussions underway
Logistics Cluster
Logistics Cluster – Watson Island Integration
WATSON ISLAND

JOINT VENTURE WITH METLAKATLA DEVELOPMENT CORPORATION AND LAX’KWALAMS INDIAN BAND
Logistics Cluster – Integration with Fairview Terminal
Thank you
Welcome to Canada’s Leading Edge
John Law
President and CEO
Global Transportation Hub Authority

Former Deputy Minister
Ministry of Highways and Infrastructure
Introduction

• The changing face of Western Canada's agricultural/ grain economy

• Reliance upon optimizing trade corridors, logistics and transportation infrastructure and systems

• Role of government regulatory environment: the New West Partnership

• Integrating Saskatchewan’s Global Transportation Hub as part of a new transportation strategy
Evolution of the Provincial Economy & Transportation Demands
Saskatchewan’s Fit in the Asia Pacific Gateway
Advantages for Saskatchewan Businesses

- Saskatchewan based producers and exporters will directly benefit from new opportunities associated with the agricultural economy.

- New economic opportunities are emerging in the area of pulse-crops.

- There are numerous examples of companies presently excelling in the new landscape.
Western Coordination and Collaboration

- In 2010, Saskatchewan, Alberta and British Columbia discussed initiated a new partnership arrangement that would allow for greater economic partnership within the West.

- The Partnership establishes Canada’s largest open, efficient and stable market and creates a framework for ongoing cooperation to strengthen our economy in the areas of trade, investment and labour mobility.
The Purpose of the Global Transportation Hub

To build a transportation & logistics hub that:

• Establishes/Enhances Saskatchewan’s role in the Asia-Pacific trade corridor and more broadly in the Western Canadian network.

• Provides job creation, attracts logistics-based investment and expands export capacity all in the pursuit of Provincial economic development.

• Serves as a single point of contact for outside investors and internal service coordination and delivery.

• Supports private sector partners with customized service to enhance their value propositions and sustainability.
The Global Transportation Hub
• Continued growth and diversification of Saskatchewan's agricultural economy will be increasingly tied to supply chain adaptation and optimization. Logistics is the economic enabler of our future prosperity.

• Saskatchewan can play a key role in the efficient movement of imports across Western Canada but we must be vigilant in leveraging the network to support our priority focus on exports.

• The GTH is one part of an integrated transportation and logistics strategy designed to enhance export capacity in a newly emerging economic region called the New West Partnership, one in which there is plenty of room for Manitoba.
World Grain Flows – The Evolution of Competition
Seaborne Trade

- Grain
- All Commodities

6.6% CAGR
3.8% CAGR

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

December 3, 2010
Total traffic has decreased from a high of 15.2 million tons in 1994/95 to 9.5 million tons in 2008/09.
> **Global Oilseeds Market**
  > Soybean and Canola
    > Production & Consumption
    > Importers & Exporters
    > Meeting Chinese Demand
      Canada’s Rank

> **Global Grain Market**
  > Wheat
    > Shifting Global Market
      Former Soviet Union
  > Corn

> **Canada**
  > Seeded Acreage and Production
  > Exports
    > Global Comparisons

> **Conclusion**
Led by soybeans, oilseed consumption has increased to over 300 million tons

Increase of 140% since 1990

December 3, 2010
World production of soybeans has increased nearly 150% in the last 20 years.

Growth led by the U.S., Argentina, and Brazil.
China is now the leading consumer of soybeans (≈25% of world)
Growing livestock and poultry sectors contribute to consumption increases
China currently consumes over four times more than they produce.
World Soybeans
Leading Importers

China is the world’s largest importer of soybeans
> Responsible for over 55% of world imports

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</thead>
<tbody>
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<td>41,098</td>
<td>49,500</td>
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<td>77,168</td>
<td>86,661</td>
<td>63.4%</td>
<td>35.1%</td>
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</table>
肉、奶制品和家禽产量的“非弹性需求增长”将从2009年的148亿吨增长到2020年的超过250万公吨。

Liu Xiaoyu, general manager Cofco feed division, China’s largest grain trader
China may double its output of industrial animal feed

Output will be more than 250 million metric tons by 2020, growing from 148 million tons last year, on “inelastic demand growth” for meat dairy and poultry

Liu Xiaoyu, general manager Cofco feed division, China’s largest grain trader

From bloomberg.com: October 6, 2011
World Soybeans
Leading Exporters

Argentina, Brazil, and the U.S. make up about 90% of world soybean exports.

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<td>13,839</td>
<td>5,590</td>
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<td>50.6%</td>
<td>51.7%</td>
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<td>25,364</td>
<td>29,986</td>
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<tr>
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<td>1,753</td>
<td>1,995</td>
<td>2,175</td>
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<tr>
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<td>31,538</td>
<td>34,817</td>
<td>40,007</td>
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<tr>
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<td>79,589</td>
<td>77,253</td>
<td>89,575</td>
<td>66.4%</td>
<td>40.4%</td>
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</table>
Canadian soybean exports have continued to rise.

Exports in 2010 make up around 60% of production.
Canadian soybean destinations have remained fairly consistent until 2008/09, have not had significant exports to China.
Soybean Exports to China

Exports to China as a Percent of Total Exports

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</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>11.6%</td>
<td>33.4%</td>
<td>69.3%</td>
<td>64.9%</td>
<td>47.6%</td>
<td>73.8%</td>
<td>59.8%</td>
<td>74.9%</td>
<td>79.4%</td>
<td>69.7%</td>
<td>83.6%</td>
<td>90.1%</td>
</tr>
<tr>
<td>Brazil</td>
<td>11.9%</td>
<td>10.8%</td>
<td>20.7%</td>
<td>20.1%</td>
<td>17.0%</td>
<td>38.1%</td>
<td>27.3%</td>
<td>30.6%</td>
<td>45.8%</td>
<td>44.3%</td>
<td>47.9%</td>
<td>54.5%</td>
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<td>3.7%</td>
<td>0.2%</td>
<td>0.7%</td>
<td>0.3%</td>
<td>1.7%</td>
<td>1.2%</td>
<td>0.6%</td>
<td>0.1%</td>
<td>0.6%</td>
<td>11.7%</td>
</tr>
<tr>
<td>United States</td>
<td>7.6%</td>
<td>9.7%</td>
<td>19.3%</td>
<td>20.8%</td>
<td>15.8%</td>
<td>26.8%</td>
<td>34.1%</td>
<td>39.2%</td>
<td>37.9%</td>
<td>37.7%</td>
<td>43.5%</td>
<td>53.7%</td>
</tr>
</tbody>
</table>

>Canada has not overwhelmingly increased its percentage of exports to China

>2008/09 – Brazil and the US sent over 50% of their exports to China

>2008/09 – Argentina sent roughly 90% of their exports to China

•2008/2009 crop year – Canada made up only .6% of all Chinese Imports

December 3, 2010
Soybean consumption has increased dramatically
  Led by China

US, Argentina, and Brazil have answered with increased production

Canada has maintained modest yet steady production growth
  Consistently increasing exports
  Steady export destinations
> Wheat Production in the Former Soviet Union has been increasing since 1995
> Drought in the 2010/2011 crop year has limited production
Russian wheat exports have increased from 1.2mmt in 1990 to 18.6mmt in 2010

Ukraine wheat exports have increased from 2mmt in 1990 to 9.3mmt in 2010

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<td>17,316</td>
<td>16,272</td>
<td>9,432</td>
<td>15,843</td>
<td>14,872</td>
<td>16,020</td>
<td>19,434</td>
<td>16,116</td>
<td>18,812</td>
<td>19,023</td>
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<td>Kazakhstan</td>
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<td>3,977</td>
<td>6,238</td>
<td>4,217</td>
<td>3,039</td>
<td>3,817</td>
<td>8,089</td>
<td>8,181</td>
<td>5,701</td>
<td>7,871</td>
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<tr>
<td>Russia</td>
<td>696</td>
<td>4,372</td>
<td>12,621</td>
<td>3,114</td>
<td>8,456</td>
<td>10,664</td>
<td>10,790</td>
<td>12,220</td>
<td>18,393</td>
<td>18,556</td>
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<tr>
<td>Ukraine</td>
<td>78</td>
<td>5,486</td>
<td>6,569</td>
<td>66</td>
<td>4,403</td>
<td>6,461</td>
<td>3,366</td>
<td>1,236</td>
<td>13,037</td>
<td>9,337</td>
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<td>28,904</td>
<td>26,190</td>
<td>23,139</td>
<td>31,524</td>
<td>29,009</td>
<td>27,291</td>
<td>24,725</td>
<td>34,363</td>
<td>27,635</td>
<td>23,977</td>
</tr>
</tbody>
</table>
> 2000/01 – Former Soviet Union accounted for 5% of world wheat exports
> 2009/10 – FSU accounted for 28% of world wheat exports
Corn consumption has increased to over 800 million tons
Corn Exports

1990-1991 Corn Exports

- US: 44 million
- S. America: 4 million
- FSU: 800 thousand
- Canada: 140 thousand

2010-2011 Corn Exports

- US: 51.4 million
- S. America: 26 million
- FSU: 5.6 million
- Canada: 300 thousand

February 3, 2010
Grains Summary

- Gradual increase in wheat consumption

- Consumption shift
  - Significant increases in Asia, EU, and Africa

- Emerging exporters
  - FSU has become new low cost exporter
  - Until FSU drought 2010/11, smaller North American market share

- Corn
  - Increased demand
  - More FSU and S. America exports
> Even with increases in global food consumption, Canadian cultivated area has declined below 100 million acres

> Wheat, Barley, Oats, Corn, Peas, Canola, and Soybeans account for roughly 60 million acres
Acres have strayed away from wheat and towards canola
Wheat Freight, Elevation, & Stevedoring
Canadian Export Market

Changes since 1990

- Vancouver: +2.5 million (21% increase)
- Prince Rupert: +11 thousand (unchanged)
- St. Lawrence: -3.05 million (26% decrease)

December 3, 2010
Canadian Exports
Changes by Destination

Change in Exports 1991-2009
Total Change = +3.35 million

Asia: +3.4 mmt
W. Hemisphere: +2.3 mmt
Europe: -2.7 mmt
Africa: -500 kmt

Mexico & US: +3.9 mmt

Europe: -4.5 mmt
Africa: +1.4 mmt
W. Hemisphere: -200 kmt
Asia: +250 kmt

December 3, 2010
Overall Canadian Lakes & St. Lawrence Exports have declined to just over 8 million tons.

Oilseed exports now make up close to 2 million tons.
Total traffic has decreased from a high of 15.2 million tons in 1994/95 to 9.5 million tons in 2008/09.
Expecting 2010/11 Pacific Exports of 33.5 million, near high of 2007/08!!
Expected 2010/11 exports are projected near 11.2 million thousand tons.
Expecting 2010/11 Gulf Exports of 82 million!!

December 3, 2010
Change in Exports 1991-2009
Total Change = +15.6 million

+7.7 million

-2.2 million

-1.7 million

+7.9 million (Mexico & Canada)

+3.9 million
Shift in Canadian seeded acreage away from grains and towards oilseeds

- Increased Canola production

Exports met through Pacific

- Fewer exports out of St. Lawrence
  - More oilseed exports

Strong US Export Growth

- Decrease in Eastern Port Traffic
> **Shifting domestic consumption being met by new export markets**
  > Increasing Asian and African consumption
  > Increasing South American and FSU exports

> **New Canadian agricultural objectives**
  > Gradual transition towards oilseeds & increasing domestic demand

> **Thriving Pacific export market**
  > More exports to Asian markets led by expanding Chinese demand
  > Increase in soybean traffic

> **Stagnant Eastern and Great Lakes exports**
  > Constrained US capacity from US Gulf and Pacific Northwest
  > St. Lawrence Seaway acts as residual supplier of capacity
PORT OF THUNDER BAY
Canada’s Gateway to the West
The Great Lakes – St. Lawrence Seaway is Canada’s original Gateway, built to provide direct access to European Markets for the Western Canadian Farmer.
The Seaway

The World’s Largest Inland Waterway stretching 2,300 miles into the heartland of North America
In 2000 the American Public Works Association included the seaway on its list of the ten most important publicly funded projects of the 20th century
The Seaway

- Vessels travelling to the Port of Thunder Bay experience a lift of over 602 ft from sea level in a series of 16 locks
- The 13 Canadian locks are managed by the SLSMC
In more than 50 years, over 550 million tonnes of Western Canada grain have moved through the Port of Thunder Bay to destinations around the world.
The Canadian “Laker” is specially designed to maximize capacity through the locks:

- Up to 750 feet long
- 64 vessels
- Self-Unloading Technology
Total Cargo 2009:
46.6 million tonnes
American Laker Fleet

- The American “laker” fleet includes 13 – 1000ft vessels which are restricted to the Upper Great Lakes
- American fleet of “lakers” is 55 vessels
- 13 of these are steamships
- Vessels range between 300ft and 1000ft long
The term “saltie” refers to an ocean vessel:

- Salties have a deeper draft and are usually shorter.
- Ability to carry cargo directly to final destination.
- Most salties are foreign flagged vessels.
- Among the newest and most versatile vessels.
Seaway Advantages

- Best Carbon Footprint of any Supply Chain to the Prairies
- Captive sources for raw materials used in steel making
- System of grain transfer elevators accessible only by water
- World leadership in the application of self-unloading ship technology
- Seaway trade safe and reliable due to knowledgeable international shipowners
- Large population and industrial base around the Great Lakes
Changes Impacting Seaway Traffic and Volume

- Shifting grain export markets from Europe to Asia
- West to East Coal Movement
- Growth of containerization and intermodalism and reliance on Just-In-Time practices for consumer practices driving breakbulk shipments off the seaway
- Improved efficiencies in rail and truck with respect to price and service
- Decline in Canadian Laker Fleet Numbers
In 1999, 75% of Canada’s trade was with the US.

In 2009, 62% of Canada’s trade was with the US, a decrease of 13% over ten years.

Source: Institute for Competitiveness & Prosperity analysis based on data from Industry Canada.
Importance of East-West Trade

EU Importance Increasing

Source: Institute for Competitiveness & Prosperity analysis based on data from Industry Canada.
European Market Importance

- Canada’s second largest goods trading partner
- Trade volume 48% higher than China’s
- EU’s largest export to Canada is machinery and transportation equipment
- Imports/Exports are roughly in balance
- Canada – EU Comprehensive Economic and Trade Agreement will eliminate barriers to trade
EU Trade Benefits

- Different than benefits of trade with China
- Market opportunities and competitive challenges from advanced economies
- Sophisticated consumers and competitors will help Canadian firms improve their innovation capabilities and enhance our consumers’ welfare
The Port of Thunder Bay
Port of Thunder Bay Facts

- Western Canada’s Gateway to the Seaway
- Largest export port on the Seaway
- Largest Grain Storage Capacity in NA
- Only potash export port on the Seaway
- 6 million tonnes of grain on average
  = 429 trains (66,500 rail cars)
Port Facilities

- Grain – Wheat, Canola, Oats
- Dry Bulk – Coal, Potash, Salt & Stone
- Liquid Bulk – Petroleum
- General Cargo – Forest Products, Dimensional and Project Cargos
Port Of Thunder Bay
Grain elevators at Thunder Bay, Ontario, Canada

Thunder Bay was once the world’s largest grain-handling port. The complex of elevators there still receives and stores grain for shipment across the Great Lakes.

Courtesy of the Thunder Bay Historical Museum Society
Port Impact

- $200 Million Annual Economic Impact
- Over $8 Million in Property Taxes
- 450 Direct Jobs
Port Improvements

• Elimination of multi-berthing system for vessels
• Unit Train capabilities at many port facilities
• Co-production agreements between CP & CN
• Flexible hours for grain loading
Cargo Shipments 2009

Total: 7.3 million tonnes

COAL: 13%
DRY BULK: 2%
LIQUID BULK: 2%
POTASH: 2%
GENERAL CARGO: 1%
GRAIN: 80%
Cargo Shipments 2009

Inbound/Outbound

- Outbound: 93%
- Inbound: 7%

Origin/Destination

- From/To Western Canada: 95%
- Other: 5%
*Cargo volumes moved through the Seaway lock structures.
Western Canada Grain
Western Canada Grain

- During the 2008-09 crop season, 42.7 million tonnes of grain were grown in Canada.
- 31.1 million tonnes (73%) were exported – most to countries overseas.
- Transportation is key to the success of the Canadian grain industry.
Grain Export Markets

[Graph showing grain export data for Europe & Africa, Southern Markets, and Asian Markets from 1998 to 2009.]
Western Grain Ports

Tonnes (millions)


Vancouver
Prince Rupert
Churchill
Thunder Bay

Canada
Western Grain Ports

NON-BOARD GRAIN SHIPMENTS

Tonnes (millions)

Churchill
Prince Rupert
Thunder Bay
Vancouver

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
Thunder Bay Grain Shipments

Millions
Tonnes

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<th>Board</th>
<th>Non-Board</th>
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<tr>
<td>2009</td>
<td>4.5</td>
<td>1.5</td>
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Seaway Grain Originating Province

- Alberta: 7.8%
- Manitoba: 28.6%
- Saskatchewan: 63.6%
Seaway Share by Province

Manitoba: 56%
Saskatchewan: 31%
Alberta: 4%

*excludes grain railed directly to the U.S. and Mexico
Competing Supply Chains

IP Grain Flow in Canada

Terminal Elevator
Transfer Elevator
Container Vessels
Processing Plant

Container Exports from Ontario, Canada
Churchill

- One elevator with 140,000 tonnes of storage capacity
- Season runs mid-July to early November
- Minimal Inbound Cargo
- 5-Year average of 18 ships per season

Thunder Bay

- Eight elevators with 1,200,000 tonnes of storage capacity
- Season runs mid-March to early January
- Gateway handling increasing volumes of inbound project cargo
- 5-Year average of 413 ships per season
Churchill vs. Thunder Bay
Grain volumes by crop season

Graph showing grain volumes by crop season for Churchill and Thunder Bay from 2001-02 to 2008-09.
Board grain is railed directly to Quebec:

- The 10-year average (1995-2005) was 770 000 tonnes
- 2006-2007 railed 1.0 million tonnes
- 2007-2008 railed 1.2 million tonnes
- 2008-2009 railed 1.3 million tonnes
- 2009-2010 railed 1.3 million tonnes

Board grain is railed directly to U.S.:

- Current program is 2.2 million tonnes
Alternative Modes and Routes

WHICH METHOD IS MORE COST EFFECTIVE?

1. Rail to Thunder Bay, Laker to Montreal, Ocean Vessel to Europe
2. Rail to Thunder Bay, Ocean Vessel to Europe
3. Rail directly to Montreal, Ocean Vessel to Europe
## Alternative Modes and Routes

### DIRECT RAIL VS. LAKER TO MONTREAL

<table>
<thead>
<tr>
<th>Rail</th>
<th>Vessel</th>
<th>Logistics/Tonne</th>
<th>+/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Car to TBay</td>
<td>Laker to Montreal</td>
<td>$68.42</td>
<td>-</td>
</tr>
<tr>
<td>Unit Train to TBay</td>
<td>Laker to Montreal</td>
<td>$62.92</td>
<td>-</td>
</tr>
<tr>
<td>Single Car to Montreal</td>
<td>-</td>
<td>$75.29</td>
<td>+ 10%</td>
</tr>
<tr>
<td>Unit Train to Montreal</td>
<td>-</td>
<td>$63.23</td>
<td>+ 0.5%</td>
</tr>
</tbody>
</table>
Ocean Vessel Fleet

Handysize Bulk (20,000-37,999 dwt) Fleet Growth
(in mln dwt)

source: “Dry Bulk Shipping Outlook” Enrico Paglia, Banchero Costa, Sep 14, 2010
1. Increase marine cargo
2. Raise the profile of the Port
3. Pursue strategic investments
Two-Way Cargo

PROJECT CARGO

GRAIN

PORT OF THUNDER BAY

Canada
Keefer Terminal
General Cargo moving through the Port of Thunder Bay is handled at Keefer Intermodal
On Dock Rail
Road Access

Resident Trucking

- Consolidated Fastfrate
- M-O Bulk Transport
- Bison Transport
- Manitoulin Transport
- Gardewine
- Purolator
Rail Access

[Map of Canada showing rail routes and railway lines]
Keefer Intermodal Security

• Fenced terminals
• Access-controlled
• Scheduled security patrols
• 24-hour emergency dispatch and monitoring system with video surveillance
Improvements to Date

• Heated storage facility - opened 2005
• Intermodal yard with toplifter
• Dock certification
• Expanded laydown areas
• Acquisition of 16 hectare waterfront property with working elevator
Improvements—Shed #4

- Insulated and heated
- 52 m clear span
- Reinforced concrete floor
- Minimum 7 m ceiling height
- 5 truck doors with hydraulic dock levelers
Improvements - Laydown Areas
The Port of Thunder Bay and CN have created a competitive Canadian routing option for large cargos destined for Western Canada.
Gateway

CN Rail gateway investments:

- Acquisition and upgrade of Fort McMurray line
- Bridge strengthening
- Widening of rock cuts
- Mile by mile measuring of clearance
Japan to Fort McMurray
Highway Improvements
Dimensional Cargo
Wind Turbines

Canada
Steel Coils
Project Cargo
New York Ballast Water Regulations

- Ballast water treatment standard is 100x – 1000x standard set out by International Maritime Organization
- No technology exists in the world to meet standards
- Would effectively block all international trade through the Seaway to Great Lakes ports
Ballast Water: A Global Concern

- Invasions of coastal bays are common throughout the world and are having significant ecological and economic impacts.
- High latitude/cold-water regions have consequences similar to those reported for more temperate latitudes.
- No port is exempt from the threat of Aquatic Nuisance Species.
- The Seaway has stringent ballast water management requirements.
Ballast-water management requirements for ships entering the Seaway are among the strictest in the world:

- Ballast Water Exchange
- Saltwater Flushing of “NOBOB” Tanks
- Rigorous Government Vessel Inspection Protocol
- Civil Penalties for non-Compliance

Since rules established in 2006, no new introductions of Aquatic Nuisance Species
Green Marine has united the industry to voluntarily adopt an environmental program designed for continuous improvement which includes:

- Operational practices at ports
- An environmental committee to develop and implement environmental programs
- Control measures that go beyond regulatory requirements
Environmental Advantage

THE GREEN SUPPLY CHAIN

- 1 ship (25,000 MT) = 225 rail cars = 870 trucks
- On 1 litre of fuel, 1 tonne of freight can travel 240 km by ship, less than 100 km by train and fewer than 30 km by truck
Environmental Advantage
THE GREEN SUPPLY CHAIN

2008 Seaway Cargo

4235 Vessel Transits

40 Million Tonnes

That would take...

367,000+ Rail Cars

1.4 million+ Truckloads
Example: Grain from Aberdeen, Saskatchewan

Two Options:

1 – Rail directly to Montreal

2 – Rail to Thunder Bay, then ship through Seaway

Which option is Greener?
Adapted Study

Trans-Pacific Shipping Study

Carbon Footprint (MT CO2/TEU)

- Western Port 1
- Western Port 2
- Western Port 3
- Western Port 4
- Eastern Port 1
- Eastern Port 2
- Eastern Port 3
- Eastern Port 4

Source: Herbert Engineering

Canada
Prairies to Montreal, Quebec

WHICH OPTION IS GREENER?

Rail

Vessel
**Prairies to Montreal, Quebec**

**THE GREEN SUPPLY CHAIN**

<table>
<thead>
<tr>
<th>Route</th>
<th>Approximate Distance</th>
<th>CO2e Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail: Aberdeen to Thunder Bay</td>
<td>943 km</td>
<td>337 tonnes</td>
</tr>
<tr>
<td>Vessel: Thunder Bay to Montreal</td>
<td>2,093 km</td>
<td>388 tonnes</td>
</tr>
<tr>
<td></td>
<td>3,036 km</td>
<td>725 tonnes</td>
</tr>
<tr>
<td>Rail: Aberdeen to Montreal</td>
<td>2,650 km</td>
<td>946 tonnes</td>
</tr>
</tbody>
</table>

CO2e Emissions are reduced by approximately 30% when shipped through the Seaway instead of being railed directly to Montreal

*based on 20,000 tonne freight weight

** CO2e = Carbon Dioxide Equivalence
In short:

“Sustainability is living off nature’s income, not its capital.”
Going Forward
Seaway Innovation

Remote Control Bridges

• Greater Traffic Management

• Enhanced Transit Times

• Better operational and employee safety

Lock Conversion to Hydraulic Operation

• 2003-2009 11 locks converted
Seaway Innovation

Automatic Identification System & Traffic Management System

- Optimal Scheduling & Control
- Enhanced transit safety
- Potential for enhanced transit times

Self Spotting and Hands Free Mooring

- Both systems in test phase with positive results
- Better, more efficient mooring
Innovation Benefits

Length of Navigation Season

Days open

+20%

Canada
CSL adopts 3D Navigation Technology

- Produces 3D imagery
- Maximizes Seaway Draft
- Reduces Groundings and Increases Safety
Seaway Incentives

- Toll rates frozen from 2008 to 2010

- **New Business Incentive Program:**
  20% discount on cargo tolls for commodity / origin / destination combinations approved as “new business.”

- **Volume Rebate Incentive Program:**
  10% reduction on cargo tolls applicable to incremental volumes meeting a set of criteria.
Vessel Import Duty Lifted
Vessel Technology
Elevator & Waterfront Property
Sovereign Manitoba?
Seaway Message

• One of the world’s greatest inland waterways

• Future potential for Western Canada constrained only by regulation and government policy

• Diversifying & Modernizing

• Available Capacity without Investment

• Accessible by 34% of the world’s ocean fleet

• Green Supply Chain

• Links Western Canada to growing European Markets
Fred Green, president and CEO of Canadian Pacific Railway: “We have seen a very gradual recovery, but the challenge now is to predict the future. I don’t have a clue and neither do you.”
15TH ANNUAL
FIELDS ON WHEELS CONFERENCE
DECEMBER 3, 2010
CANADA’S GRAIN GATEWAYS AND CORRIDORS – COMPETING GLOBALLY
Churchill and the World

Port of Churchill
Port of Churchill
Port Facilities

• Four deep-sea berths, including one tanker berth
• Storage capacity in grain terminal – 140,000 tonnes
• 82,000 square feet of indoor storage and ample outdoor storage areas
• Capable of handling trailers and containers
• Six miles of track available for railcar loading and equipment storage
• Served by the Hudson Bay Railway that connects with CN for service throughout North America
Churchill Fuel Terminal

- 50 million litre storage capacity
- Dedicated and segregated product storage (diesel, gasoline, jet and aviation gas, stove, lubricants)
- Dedicated product transfer systems
- 14 railcar spot/loading racks
- On dock loading manifolds for ship or barge
## Examples of Shorter Trade Routes

<table>
<thead>
<tr>
<th>Destination</th>
<th>Churchill To</th>
<th>Thunder Bay To</th>
<th>Mileage Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oslo</td>
<td>3,370</td>
<td>5,368</td>
<td>1,998</td>
</tr>
<tr>
<td>Murmansk</td>
<td>3,763</td>
<td>5,210</td>
<td>1,447</td>
</tr>
<tr>
<td>Liverpool</td>
<td>2,992</td>
<td>4,035</td>
<td>1,045</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>3,344</td>
<td>4,325</td>
<td>981</td>
</tr>
</tbody>
</table>

By using Churchill and avoiding the Seaway, an ocean vessel can save up to five days from a port such as Murmansk. At a cost of $40,000 a day to charter a vessel, this could mean a saving to the vessel owner of approximately $200,000.
Global Warming

- Global warming is having a profound effect on the Arctic region and the length of the Churchill shipping season.
- Churchill ice free season has historically been from July 20 to October 31.
- In 2010 the shipping route was virtually ice free commencing July 1 and it remains so.
- Regulations and insurance industry are now beginning to react to the changing ice conditions.
- Reduced ice conditions and modern satellite imaging provides the ability to ensure safe vessel transit in an extended shipping season.
The Port of Churchill provides access to 100 million people through the Mid-Continent Trade Corridor.

The Arctic has the largest undeveloped reserves of minerals in the world. Exploration and mining have exploded in the last ten years.

The Northwest Passage provides a significantly shorter global trade route.
Hudson Bay Railway
Railway Infrastructure Funding

• Federal and Manitoba Governments are committing $40M to upgrade line (5 year program)

• HBR is committing $20M in additional improvements over 10 years, over and above HBR normal maintenance

• Federal and Manitoba Governments committing $8M to upgrade Port

• Overall result will mean a more sustainable, viable transportation system in Northern Manitoba
• Public/private funding by OmniTRAX, the Province of Manitoba and the Canadian Government

• Objectives: diversify the commodity base, increase inbound and outbound traffic, and ensure sustainability and viability of the northern transportation system
### Over 30 Countries Served

<table>
<thead>
<tr>
<th>Country</th>
<th>Country</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudan</td>
<td>Spain</td>
<td>Ghana</td>
</tr>
<tr>
<td>Nigeria</td>
<td>United Kingdom</td>
<td>Russia</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Ireland</td>
<td>Mexico</td>
</tr>
<tr>
<td>Greece</td>
<td>South Africa</td>
<td>Belgium</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Kenya</td>
<td>Brazil</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Italy</td>
<td>Canada</td>
</tr>
<tr>
<td>Norway</td>
<td>Namibia</td>
<td>D.R. of Congo</td>
</tr>
<tr>
<td>Ecuador</td>
<td>Algeria</td>
<td>Egypt</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Turkey</td>
<td>Cote d’Ivoire</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Morocco</td>
<td>Tunisia</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Libya</td>
<td></td>
</tr>
</tbody>
</table>
Churchill Ships

Wheat
Equipment
Consumer Goods
Fertilizer
Mining and Building Materials
Canola
Fuel
Peas
Ores
Welcome to the Port of Churchill

Strategically located on the west coast of Hudson Bay, the Port of Churchill brings Atlantic Ocean trade to the doorstep of Western Canada. The Port of Churchill offers four deep-sea berths for the loading and unloading of grain, general cargo, and tanker vessels. Close coordination with the Hudson Bay Railway, its sister company, allows efficient access to all North American points through a connection with the Canadian National Railway system.

The 140,000-tonne elevator, with new unit train unloading capacity, has the ability to clean, grade, store and transfer bulk grains from railcars to oceangoing vessels. The Port of Churchill is closer to 25% of Canada's western grain production than any other port.

Churchill provides unique opportunities for the export of manufactured, mining and forest products, as well as the import of ores, minerals, steel, building materials, fertilizer and petroleum products for distribution in Central and Western Canada.

The Port is a vital link in the trans-shipment of petroleum products and goods of all kinds to the communities in the Hudson Bay region. The location of the Port is ideal for shipping products to and from Europe, Russia, Africa, Latin America and the Middle East. Using the Port of Churchill eliminates time-consuming navigation, additional handling, and high-cost transportation through the Great Lakes and St. Lawrence Seaway.

The Port is available for shipping and receiving ocean vessels from July until early November. Earlier or later scheduling is available by using ice-class vessels or icebreakers. Churchill is served by an all-weather

![Churchill Weather]
-10°C Partly Cloudy
Discussion Topics

- Rail Industry Overview
- BNSF Overview
- BNSF’s Mid-Continent (MidCon) Corridor
Rail Industry Overview
Industry Overview

North America Rail Network

- Over 258,000 km of track
- Over 165,000 railroad employees
- Over 500 shortline railroads
Why Rail?

Key Benefits

- **Fuel Efficiency** – On average, railroads are three or more times more fuel efficient than trucks.

- **Highway Gridlock Reduction** – A typical train takes the freight equivalent of several hundred trucks off our highways.

- **Cost Efficiency** – In general, shippers pay less for shipping freight via rail rather than other forms of land transportation.

- **Environmental Friendliness** – The EPA estimates that for every ton-mile, locomotives emit roughly one-third the amount of nitrogen oxides and particulates as trucks.

Source: AAR
Rail is 2-8 times more fuel efficient than trucks

*Based on a 1,500 mile truck haul
BNSF Overview
BNSF Overview

BNSF Network

- 52,000 kilometers
- 2 provinces
- 28 states
- 38,000 employees
- 5,800 locomotives
- 220,000 cars on-line

$13.6 B revenues
BNSF Position in Rail Industry

BNSF Moves One Fourth of ALL North American Rail Freight

Total Units Handled (Millions)

- BNSF: 8.4
- UP: 7.8
- NS: 5.9
- CSX: 5.7
- CN: 4.0
- CP: 2.4
- KCS: 1.0
BNSF Overview

Business Unit Breakdown

INDUSTRIAL PRODUCTS

CONSUMER PRODUCTS

COAL

AGRICULTURE
BNSF Volume – 2010 YTD through Q3

Total units and % change from 2009

- Consumer Products: 3,166 (+8.7%)
- Industrial Products: 1,047 (+17.9%)
- Ag: 777 (+13.3%)
- Coal: 1,781 (-2.1%)

2010 Total BNSF Volume YTD Through Q3: 6,771 (+7.4%)
BNSF Overview

Ag Breakdown

**Grain**
- Wheat
- Barley
- Corn
- Soybeans
- Milo

**Bulk Foods**
- Sweeteners
- Syrups
- Animal Products
- Starch

**Other Grain Products**
- Oils
- Feeds
- Flour
- Specialty Grains
- Oilseeds & Meals
- Malt

**Fertilizer**

**Ethanol**
Mid-Continent Corridor
Industry Overview
Transportation Industry Challenges

- Fuel Efficiency
- Environmental Solutions
- Highway Congestion
- Rail Capacity
- Driver Shortage
BNSF Corridors of Commerce

Explore the Rail Corridors
Over 94 million people live and work in the regions served by the Corridors of Commerce.

View Interactive Map
Go to:
- Transcon
- Great Northern
- Midcon

Watch this site for more information regarding the Corridors of Commerce.

Improves Lives
Shipping by rail results in less congested and safer roadways, all while making the air we breathe cleaner.

Benefits the Economy
Rail is the most efficient form of surface transportation and key to economic growth.

Saves Money
Investment in rail is good for communities, businesses, and the national economy, at little cost to taxpayers.

News
Watch this space for news on corridor and TIGER grant developments.
BNSF Mid-Continent Corridor

- 3,300 Route Miles
- 10 States + Manitoba + Trackage Rights to Mexico
- 63 B Corridor RTMs in 2009 (11% of total)
BNSF Capital Commitments

- Engineering, Expansion, Mechanical and other
- Locomotive

Year | Engineering, Expansion, Mechanical and other | Locomotive
--- | --- | ---
1997 | $2.3 | 
1998 | $2.5 | 
1999 | $2.3 | 
2000 | $1.8 | 
2001 | $1.6 | 
2002 | $1.5 | 
2003 | $1.7 | 
2004 | $2.0 | 
2005 | $2.2 | 
2006 | $2.7 | 
2007 | $2.6 | 
2008 | $2.8 | 
2009 | $2.6 | 
2010P | $2.4 | 

(17)
Thank You!
Southbound Corridors for Grain: Market Access Issues

Presentation to
15th Annual Fields On Wheels Conference

December 3 2010

Ed Tyrchniewicz
University of Manitoba
Market Access Issues for Southbound Grain

- Food safety/quality drivers
- Traceability
- Exchange rates
- Politics
Food Safety/Quality Drivers

- Concerns about animal disease outbreaks (e.g., BSE, bird flu)
- Concerns about food-borne illness (e.g., salmonella, E-coli)
- Concerns about intentional contamination of the food or feed supply through acts of bioterrorism
- Preferences for specific quality attributes (e.g., nutritional content, baking or cooking characteristics)
- Preferences for specific production practices (e.g., organic, free-range)
- Preferences for products which are not derived from genetically modified organisms (GMOs)
- Concerns about residue levels of certain agricultural chemicals
- Concerns about food additives
- Phytosanitary concerns (e.g., plant pests, plant diseases)
Traceability

• A response to the concerns about food safety/quality
• Traceability is defined as the ability to follow an item, or a group of items, whether animal, plant, food product or ingredient, from one point in the supply chain to another, either backwards or forwards
• Traceability systems are essentially record-keeping systems that are primarily used to help keep information related to products with different attributes separate from one another. Components:
  – identification of animals or products,
  – identification of premises, and
  – movement tracking
Benefits of Traceability

• Enables rapid identification of the source, containment and resolution of disease outbreaks of food-borne illness problems – improves public confidence in the food supply
• Contributes to maintaining/regaining markets after a disease outbreak
• Facilitates assignment of and protection from liability in the event of a disease outbreak
• Facilitates market access to new markets
• But who pays for it???
Challenges of Traceability

• Technologies and systems facilitating the identification and movement tracking of animals, food and agricultural products

• Traceability data and database management

• Who ultimately pays? - Who bears the cost? Reaps the benefits? Cost-share across the value chain
Recent Traceability Activities and Commitments in Canada

- In 2006, the federal, provincial and territorial (FPT) Ministers of Agriculture endorsed developing a joint industry-government framework for the National Agriculture and Food Traceability System by 2008.
- More recently in July 2009, FPT Ministers, with the exception of Saskatchewan, committed to creating a comprehensive national traceability system for livestock and poultry – grain excluded.
- They agreed that a mandatory comprehensive national system for livestock traceability will be in place by 2011 and that implementation will be supported by national funding and regulatory framework.
Traceability and Grain

• No comparable demand for traceability in grain
• Canadian Grain Commission issues a Certificate Final for each export shipment; an internationally recognized symbol which verifies that an official grade standard or particular customer specification has been met
• Canadian Identity Preserved Recognition System (CIPRS) is a voluntary program of the CGC which provides third-party verification of company processes for meeting specific customer requirements, including traceability
• The saga of Triffid flax
Exchange Rates

• As the value of the Canadian dollar moves towards par with the US dollar (or higher), Canadian exports of grain and other ag products will become less competitive
Politics

• NAFTA
• Future of the CWB
• US crankiness
  – COOL: covers meat and meat products and fresh fruits and vegetables, but not grain – yet!
  – WTO impasse: US and EU would not agree with BRIC countries on subsidy cuts in return for market access
  – US commodity organizations are becoming more forceful in protecting their markets