

Canadian Pacific Railway Operating in Your Community



Railway Movement of Oil Sands Products

December 4, 2012

Who is Canadian Pacific?

CANADIAN PACIFIC

Canadian Pacific (CP) is a privately owned and operated railway transportation company, which is federally regulated in all aspects of railway operations. CP operates over 15,800 miles of tracks and employs approximately 15,000 people throughout Canada and the United States.

CP is committed to being the safest, most fluid railway in North America. We believe our success depends on more than our ability to understand our business and customers – we must also appreciate the issues that matter to the communities in which we live and do business – safety, quality of life and the environment.



The Car

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The General Service Tank Car

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- 28,000 gallon car 7/16" thick carbon steel
- Non-jacketed
- No Head Protection
- Standard Valve arrangement One or Two Pressure Relief Devices (outside top operated platform)
- Bottom Outlet
- Vapor & Liquid valves
- Vacuum Relief Valve
- Bolted and Hinged Manway

Upcoming Demands

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- Increased Demand for Transportation
 - •Increased New Car Build/Lease Demand Unit train compatible
 - Built-in safety
 - True 40-year assets
 - Shared safety costs



- About Canadian Pacific
- Railways from Canada
- CP Safety Performance and Framework
- Emergency Planning & Response Process
- Emergency Response Pre/Post Incident
- If an Incident Occurs

CP is:

- Important to provincial and national economies
- Among the safest railways in North America
- Highly regulated
- Well prepared for any form of emergency
- Proactively works with communities
- Investigates any/all incidents for learning's

— Today, the Canadian rail industry:

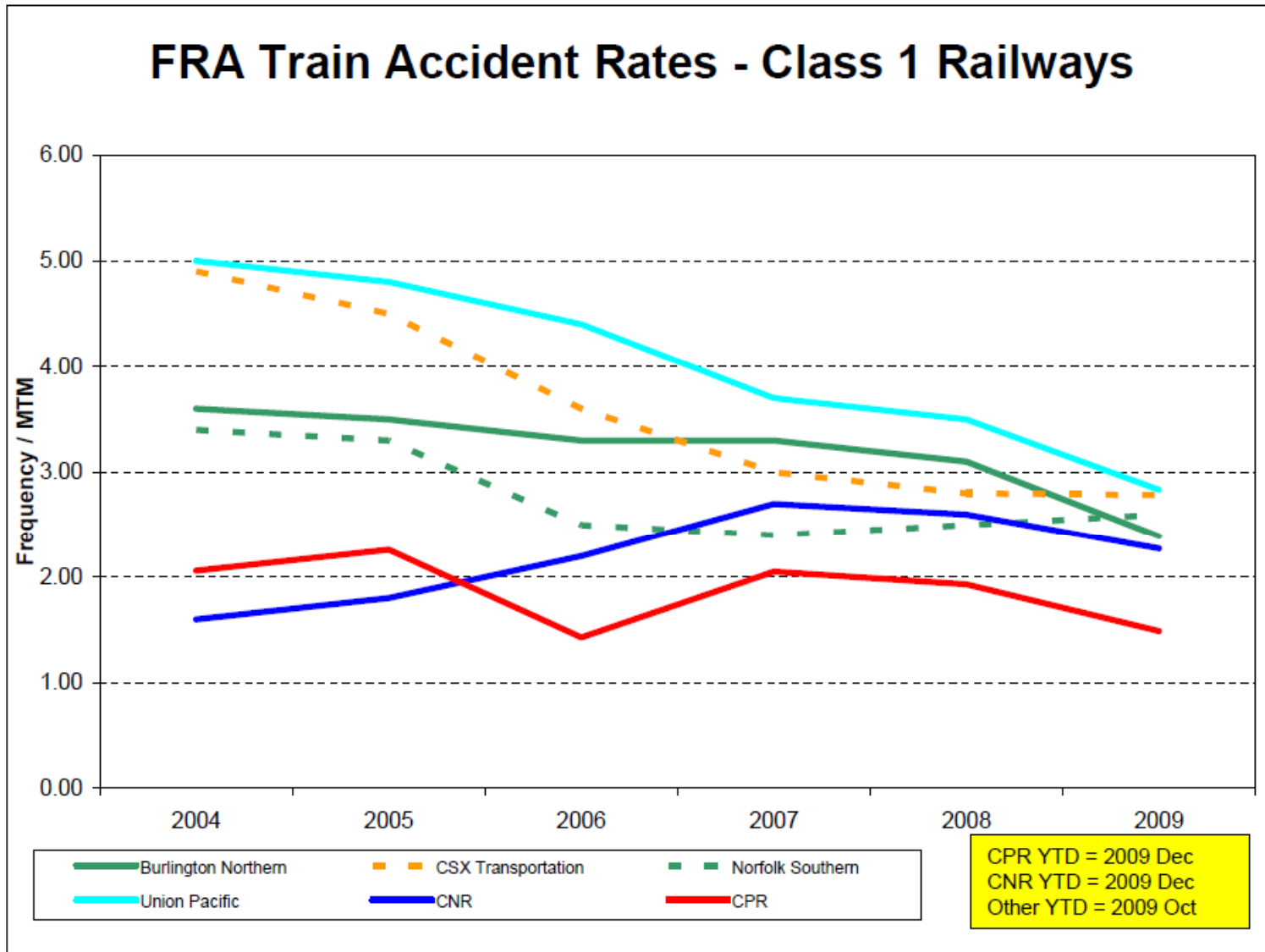
- Employs more than 34,500 people full time
- Pays more than \$1.1 billion in taxes to Canadian governments
- Transports more than the equivalent of 11 million truckloads of resource products, consumer, and manufactured goods

•American Association of railways, 2006, 2007

- Safety Performance
- Railway Industry regulations
- Internal Safety Policies
- Safety and Technology:
 - Track Maintenance
 - Rail Car Specification & Inspections
 - Customer Responsibilities
 - Train Inspections – Departure/Enroute

Safety Framework - Best in Class Performance

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Regulations

- Railway industry is heavily regulated on virtually all aspects of operations and safety
- CP is federally regulated and is monitored by Transport Canada (TC) and the FRA:
 - Railway Operating Rules for train crews
 - Locomotive Safety Rules
 - Freight Car Safety Rules
 - Train Brake Rules
 - Railway Track Safety Rules
 - Transportation of Regulated Products
 - Safety Management System Regulations

Internal Policies

- Internal CP policies, practices and procedures ensure that we meet or exceed all of the standards prescribed by federal regulations
- CP's Safety and Regulatory Affairs and Environmental Services departments are dedicated to and responsible for promoting employee, public and train accident prevention. In addition they:
 - monitor safety and accident trends
 - ensure appropriate corrective actions are implemented
 - provide world-class expertise in formal accident investigations
- CP coordinates with communities in prevention and Emergency Response preparedness in accordance with Federal, Provincial, State, and Municipal requirements

Track Maintenance

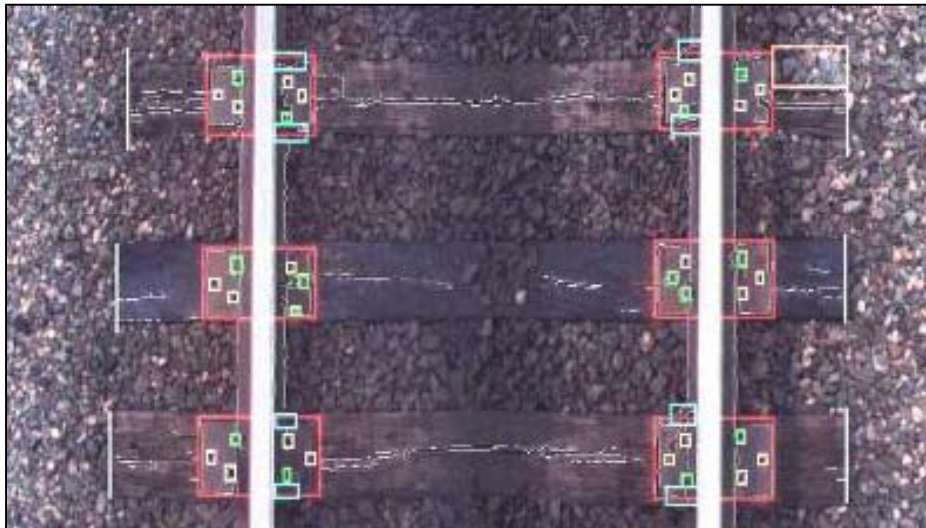
- CP is regulated by the TC/FRA and has a set of "Standard Practice Circulars" for all elements of track construction and maintenance
 - Visual track inspections, with supplemental track patrols for temperature extremes, high water or other emergent conditions
 - Walking inspections at all switches. All track joint bars undergo close visual inspection every spring and fall
 - Daily routine maintenance by two and four-person crews, with specially designed track maintenance vehicles
 - Annual maintenance programs to renew track infrastructure materials, such as rails, ties and ballast

Track Maintenance

- Checking track structure and geometry up to four times per year using automated track evaluation car, which measures:
 - Track gauge
 - Cross-level
 - Alignment
 - Curve elevation and design
 - Rail wear
 - Lateral cross-tie resistance under load
- Induction/ultrasonic rail testing conducted up to four times per year. Portions of rail with internal rail flaws are removed immediately, or protective measures are put in place
- Grinding rail up to twice a year to correct surface cracks and rail shape irregularities

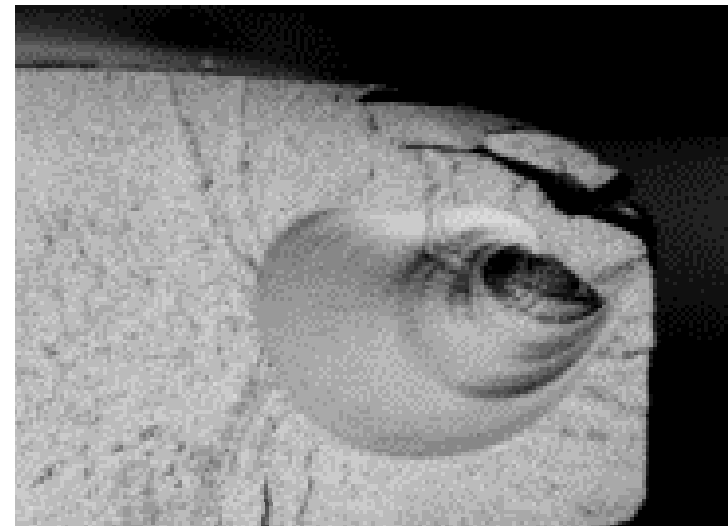
Track Evaluation Car (TEC)

- High-tech mobile scanning laboratory electronically checks the condition of the track
- GPS technology used to pinpoint exact repair locations for track maintenance personnel
- Restorative measures known as surfacing ensures the track surface, alignment and gauge are all maintained within prescribed standards
- Joint bar inspection (vision technology) added in 2006



Rail Flaw Detector Cars

- Inspects main track at regular intervals
- Uses ultrasonic and induction system to detect internal flaws in rail.
- Rail flaws are removed immediately, or protective measures are put in place
- Technology upgraded in 2005 to detect smaller cracks (B-Scan)



Rail Grinding

- Rail grinding to control surface cracks before they grow in an effort to prevent internal defects and other rail irregularities
- 11,700 miles ground annually
- Rails are reshaped from 1 to 4 times per year
- Removal of surface cracks also improves ultrasonic inspection
- Turnouts and road crossings



Award-Winning Grade Crossing Sightline Improvement Program

- Improves safety, lowers costs and is environmentally sustainable
- 1165 public crossings treated in 2006 with innovative techniques which minimize herbicide use and encourage establishment of low growing plant species resulting in improved sightlines, increased safety and lower long-term maintenance costs



Rail Car Specifications & Inspections

- CP moves product for various chemical and petroleum-based customers. Products are subject to regulations requiring:
 - Adherence to 49 Code of Federal Regulations (49CFR) for transportation of hazardous material for Air/Rail/Highway/Water:
 - construction to U.S. Dept. of Transportation (DOT) specs
 - normalized steel construction
 - protective head shields
 - AAR and ASTM steel and weld testing
 - double shelf couplers
 - special pressure and thermal control valves, and more
 - Placards on cars that designate Dangerous Goods ID products based on UN number as per North American Emergency Response Guide) NAERG
 - Waybills showing commodity, shipper and emergency contact information, UN ID number and Hazard Class
 - In-train placement restrictions
 - Special yard handling and restricted switching speed

Customer

- Offers shipment “Bill of Lading” to CP Transportation Service Representative (TSR) via fax/e-mail
 - Triggers release of rail car to railway
 - Information must pass through rigorous edits
 - Information entered into system
 - Systematic checks on variable information (Technical Name, Packing Group, etc.)
 - System prompts visual verification of key ER data (Emergency Response Assistance Plan and 24 HR numbers)
 - TSR generates work order for crews to lift from Customer facility which includes dangerous goods waybill information

Customer Facilities

- Railway crew removes car from shipper facility with shipper supplied product documentation (work order)
 - Crew inspects each car prior to lifting and tests the brakes
 - Defective cars or non-listed cars are rejected at the shipper's facility

- Railcar is placed on a train and the manifest list is generated creating movement documents for train crew
 - Out-bound consist list (train wheel report/manifest list) - displays all cars in train and flags Hazmat cars
 - Compressed Waybills (Hazmat Shipping Documents are created and validated - - 4 progressive and linked steps - - for each regulated car)

- Train is inspected and brake tested by crews or other qualified employees

- Inspection results are provided to train crew and recorded on a form that stays with train to destination

Train Inspection Process

- Prior to departure, all trains are inspected:
 - Proper air brake pressure & brake application
 - Condition of wheels and bearings
 - Safe working condition of all rail car components
 - Loose, dragging or misaligned equipment
 - Secure lading on open freight cars
 - Safe locomotive operating characteristics
- Train receives numerous inspections while en-route by:
 - Track side detectors and other technologies
 - Track maintenance and Signals & Communications employees
 - Train crews during train meets or passing by other trains
- All trains transporting regulated goods receive a pull-by inspection at each location where train crews are changed
- All trains carry consist and product info on-board, allowing First Responders to refer to, and copy, documents

Train Consist – Rail Car Position

- Each rail car is equipped with Automatic Equipment Identifier (AEI) card.
- Card is a simple circuit board that contains basic information about the rail car
- Track side AEI readers access information from the card and produces an electronic list of all the cars
- Train departs yard and first AEI reader compares rail car position information to an electronic train consist



Train Consist - Departures

- Discrepancies are investigated and corrective action taken:
 - Train crew notified and consist is manually updated each time a car is added or removed from the train for any reason
 - Radio waybill is processed for loaded rail cars

AEI Log Information

Station: Location: Scnr Id: Dir: TrainId / Track Id: Rsn Cd: Scan Date:

Search Reset

Train Level

Stn	Location Name	Desc	Scnr Id	Dir	Scan Dtm	TmZn	Log Dtm	TmZn	Evt Tp	TrnId/Trk Id	Rsn Cd/D	
50	09600	KAMLOOPS	KAML004	115	E	14:58 05/14/2010	PDT	17:09 05/14/2010	EST	M	110EA14	W1 - MNLN
51	09655	NORTH BEND	NORTHB02	308	E	09:57 05/14/2010	PDT	12:10 05/14/2010	EST	M	110EA14	W1 - MNLN
52	09655	NORTH BEND	NORTHB01	309	E	09:33 05/14/2010	PDT	12:01 05/14/2010	EST	M	110EA14	W1 - MNLN
53	09714	VANCOUVER IMS	PITME01	343	E	05:25 05/14/2010	PDT	07:37 05/14/2010	EST	O	110EA14	U1 - AEI A

Equipment Level - 110EA14

Seq	Scan Seq	Scan Equip	Cnsst Seq	Consist Equip	Rsn Code / Description	Eq Tp	Log Dtm	TmZn		
1	1	1	1	CP E008830	1	CP E008830	Y1 - RIGHT TAG MISSING	E	07:37 05/14/2010	EST
2	2	2	2	CP E009763	2	CP E009763	-	E	07:37 05/14/2010	EST
3	3	3	3	CP 523242	5	CP 523242	-	I	07:37 05/14/2010	EST
4	4	4	4	DTTX 680913	6	DTTX 680913	-	I	07:37 05/14/2010	EST
5	5	5	5	CP 527040	7	CP 527040	-	I	07:37 05/14/2010	EST

Message Level - 110EA14

Seq	Log Message	Log Pgm	Log Dtm	TmZn
1	100% scanned locomotives match to plan 100% scanned cars match to plan	ts569b	07:36 05/14/2010	EST
2	Train departed successfully	ts569b	07:37 05/14/2010	EST
3	Advanced DMTS information sent to downstream applications	ts930b	07:37 05/14/2010	EST
4	Train has been reconciled	ts930d	07:37 05/14/2010	EST
5	Reconciliation results saved	ts569b	07:37 05/14/2010	EST

Close Help

Scan Detail

Scanner S9683 - PITTMEADOWS Track: PITME01

Train 177WE15

Index: 1594 Dir W Scanned: 17:34 05/16/2010 PDT ScannerID: 343

Locos: 2 Cars 71 EOT CPT X088921

Actual Seq	Rptd Seq	Equipment	Type	Orientation	Status	Gallons	KWH
1	1	1	CP E008845	Loco	A end Forward	Left\$ missing	0
2	2	2	CP E009648	Loco	B end Forward	Right\$ missi	0
3	3	3	CP 527552	Car	Brake Trailing	OK	
4	4	4	DTTX 062333	Car	Brake Forward	OK	
5	5	5	DTTX 657017	Car	Brake Forward	OK	
6	6	6	DTTX 749619	Car	Brake Trailing	OK	
7	7	7	DTTX 747607	Car	Brake Forward	OK	
8	8	8	DTTX 056720	Car	Brake Trailing	Right\$ missi	
9	9	9	DTTX 680313	Car	Brake Forward	OK	
10	10	10	DTTX 658070	Car	Brake Trailing	OK	
11	11	11	DTTX 659151	Car	Brake Trailing	OK	
12	12	12	DTTX 659257	Car	Brake Trailing	OK	
13	13	13	DTTX 656656	Car	Brake Trailing	OK	
14	14	14	DTTX 655538	Car	Brake Forward	OK	
15	15	15	DTTX 056505	Car	Brake Trailing	OK	
16	16	16	CP 527016	Car	Brake Trailing	OK	
17	17	17	DTTX 745725	Car	Brake Trailing	OK	
18	18	18	CP 527507	Car	Brake Trailing	OK	
19	19	19	DTTX 747553	Car	Brake Trailing	OK	

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■ ***CP uses new, evolving technology designed to inspect trains for safe railway operations. Examples include:***

- Acoustic bearing detectors give advance warning of wheel bearings in distress by analyzing the noise emanating from the bearing. First such detector to be used in Canada was installed in 2004 just outside Vancouver, BC
- Hot bearing and hot wheel detectors tell crews (mechanical voice) when their train is “running a temperature” and needs to be inspected
- Wheel impact load detectors (WILD), which diagnose wheel and other equipment problems that may be exerting unusual stress on rails
- Locomotive event recorders (black boxes) record all control inputs used to monitor proper train handling performance and disclose crucial data in the event of an accident investigation
- Loco cams are cab-mounted, forward-facing digital camcorders to capture accidents and near miss violations at grade crossings. Installed in all new locomotives since November 2005

How We Prepare

- Emergency Response Plan
- Community Relationships
- Environmental Protection

Emergency Response Plan

- *“CP believes that it is the collective responsibility of its 15,000+ employees to ensure the safety and security of the communities in which it operates, the environment, and their fellow employees” **
- CP has an extensive Emergency Response Plan - applies to all employees from front-line to executive level
- Plan is regularly updated and tested internally
- Recognizes that all incidents are of concern to communities, and our actions are an indication of commitment to community safety

Emergency Response Plan

- The plan is routinely compared to, and tested in conjunction with, local community (fire, police, communications) Emergency Response Plans
- In an average year, in communities throughout the system, CP:
 - Participates in 20 emergency planning integration meetings / training sessions
 - Conducts 10 “table-top” disaster exercises
 - Coordinates 4 TRANSCAER Fairs / ER workshops
 - Participates in 5 full-scale mock disasters



Mock Disaster, Shoreview 2004

Community Relationships

- Three pillars of CP's community relationships:
 - Develop key relationships BEFORE an incident
 - Coordinate stakeholder needs during an incident
 - Provide meaningful follow-up post-incident

- Programs include:
 - 1-800 Community Connect (inquiry) line
 - Community Advisory Panels (issues resolution or development planning)
 - Coordination with other departments: safety enforcement and environmental remediation
 - Holiday Train, CP Empress Steam Train
 - Community Investment (community, safety, environment)
 - Operation Lifesaver

Environmental Protection

- CP's Environmental Services (ES) has industry-leading experts in the areas of hazardous materials containment, environmental remediation and air and water migration prediction
- As a significant component of Emergency Response Plan coordination, this group prepares for the worst-case scenario through extensive planning, training, and testing
- ES has established a network of resources in an effort to **reduce** response time, potential impact to Community and the Environment
 - 24-7 on-call response system
 - Network of qualified contract experts and equipment are strategically identified for immediate response
 - Response is less than 4 - 6 hours depending on location

Emergency Preparedness

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Environmental Protection

Primary Emergency Response Contractors

British Columbia

Quantum Murray – Kamloops, BC

Alberta

Quantum Murray – Calgary, AB

Saskatchewan

Envirotec – Saskatoon, SK

Manitoba

Euroway – Winnipeg, MB

Ontario

PSC – Hamilton, ON

Quebec

Onyx – Montreal, QC

St Paul & Chicago Service Area

Wevele – Minneapolis, MN

Earth Movers - Minot, MD

Onix – Chicago, IL

North East US

Op-Tech – Syracuse NY

A textbook example of emergency management

“After attending well over two hundred accidents over the years, all I can say is that the performance of the (CP) team you assembled in Red Deer was rather impressive. Furthermore, the way by which your company coordinated its efforts with numerous local responders and with the shipper representatives could be used, in my opinion, as a book example for emergency handling.”

*Special Investigator - Dangerous Goods
Transportation Safety Board of Canada*

If an Incident Occurs

- Incident Priorities
- Call-Out Process
- Community Safety & Communication
- Environmental Considerations

Post Incident Process

- Investigation
- Investigation of Safety – Related Occurrences Protocol (ISR0P)
- Debriefing & Follow-up Communication

Incident Priorities

- CP's response team focuses on four priorities:
 1. Community and employee safety
 - Assess ongoing risk to local residents and take appropriate action
 - Public communication re: risk, claims
 2. Environmental mitigation and remediation
 3. Investigation
 - Identification and preservation of evidence
 - Analysis and application for future prevention
 4. Restoration of the railway

The Call-out Process

- When a train incident is confirmed by the train crew, CP's Network Management Centre (NMC) initiates a thorough call-out process:
 - First Responders – police, fire, ambulance are notified immediately
 - Product identification and emergency handling information is secured from the train crew, CP Customer Service and the shipper. This information is transmitted to on-scene responders
 - Staff, specialists, and executive – Operations, Engineering, Mechanical, Environmental Services, Safety & Regulatory Affairs, Claims and Community Relations are mobilized to the site, as required
 - Regulatory agencies, including Transport Canada, Transportation Safety Board, FRA, State, and Provincial authorities are provided with preliminary details to guide their mobilization decisions

The Call-out Process

- Shipper is notified. If commodity is Regulated Goods, the shipper or contractor will mobilize to site
- Depending on incident severity and type, CP's extensive network of pre-qualified and specialized contracted services are notified and mobilized to the site. Expertise includes:
 - Environmental containment and remediation (network-wide framework of responders)
 - Dangerous Goods Material containment
 - Air/water migration (plume prediction)

Community Safety & Communication

- CP Community Relations staff coordinate the flow of information between:

Internal Departments	Community Stakeholders
Environmental Affairs Claims CP Police Service Operations Train crew, mechanical, and engineering staff	Elected officials (Mayor) Municipal managers Emergency Response officials (communications & site control) Customer liaison Regulatory contact –TC, TSB, Federal, Provincial Authorities and elected officials representing local constituents

- In the event of an evacuation, Community Relations will support the coordination of residential/community needs with public information, housing, social and food services agencies

Environmental Considerations

- Assesses situations from early observations and manifest information
- Meet with internal & external responders and regulators & establish incident control processes
- Establish initial mitigation plan in consultation with regulators
- Once situation under control, develop long-term remediation plan in consultation with regulators

Investigation

- With any mode of transportation, accidents do happen, however:
 - CP does its best to build multiple barriers into its operations to reduce both severity and frequency of accidents.
 - CP has a comprehensive Train Accident Cause-Finding Program.
 - All front line managers are trained in this program to ensure ALL relevant evidence is gathered and analyzed to identify root causes.
 - CP also provides this training to Transport Canada, Transportation Safety Board, State, and Provincial regulators.

Investigation

- In the past two years, as a supplement to our cause-finding program, CP has implemented the Investigation of Safety-Related Occurrences Protocol (ISROP)
- The results of every investigation, along with identified corrective actions are logged into a database to identify trends or systemic issues and to track corrective actions
- Corrective action plans are implemented to prevent recurrence

Benefits of using ISROP:

- Assist investigators in preparing for an investigation
- Standardize investigative procedures
- Improve the quality and type of data collected
- Improve analysis of the data
- Improve understanding of contributing factors
- Develop and implement more effective corrective actions to create a safer workplace

ISROP is used when there are:

- Any fatalities of, or serious injuries to, members of the community or employees
- Significant damage to company and/or private property
- Serious damage to the environment

Debriefing & Follow Up Communication

- All incidents are “debriefed” among CP personnel and regulators
- If serious incidents occur with impact to the community, CP participates in debriefings with community representatives, local leaders and first responders
- Debriefing involves communication of evidence found (to date), analysis conducted re: response processes and lessons applied to ongoing operations

CP is:

- Important to local and national economies
- Among the safest railways in North America
- Highly regulated
- Well prepared for any form of emergency
- Dedicated to working proactively with communities
- Committed to investigating all incidents to enhance preventive approach