



Crude by Rail Overview



October 28, 2015
Legislative Energy Commission

We all have a stake in **A to B**



Critical Questions

- ▶ Why is crude oil moving by Rail?
- ▶ What are the safety concerns?
- ▶ What are public agencies doing about this trend?



Crude by Rail Overview

- ▶ Crude oil bought by truck rail loading facilities
- ▶ These facilities load “unit trains” consisting of up to 110 cars of solely crude oil
- ▶ Up to 80,000 barrels of oil per train are taken to refineries

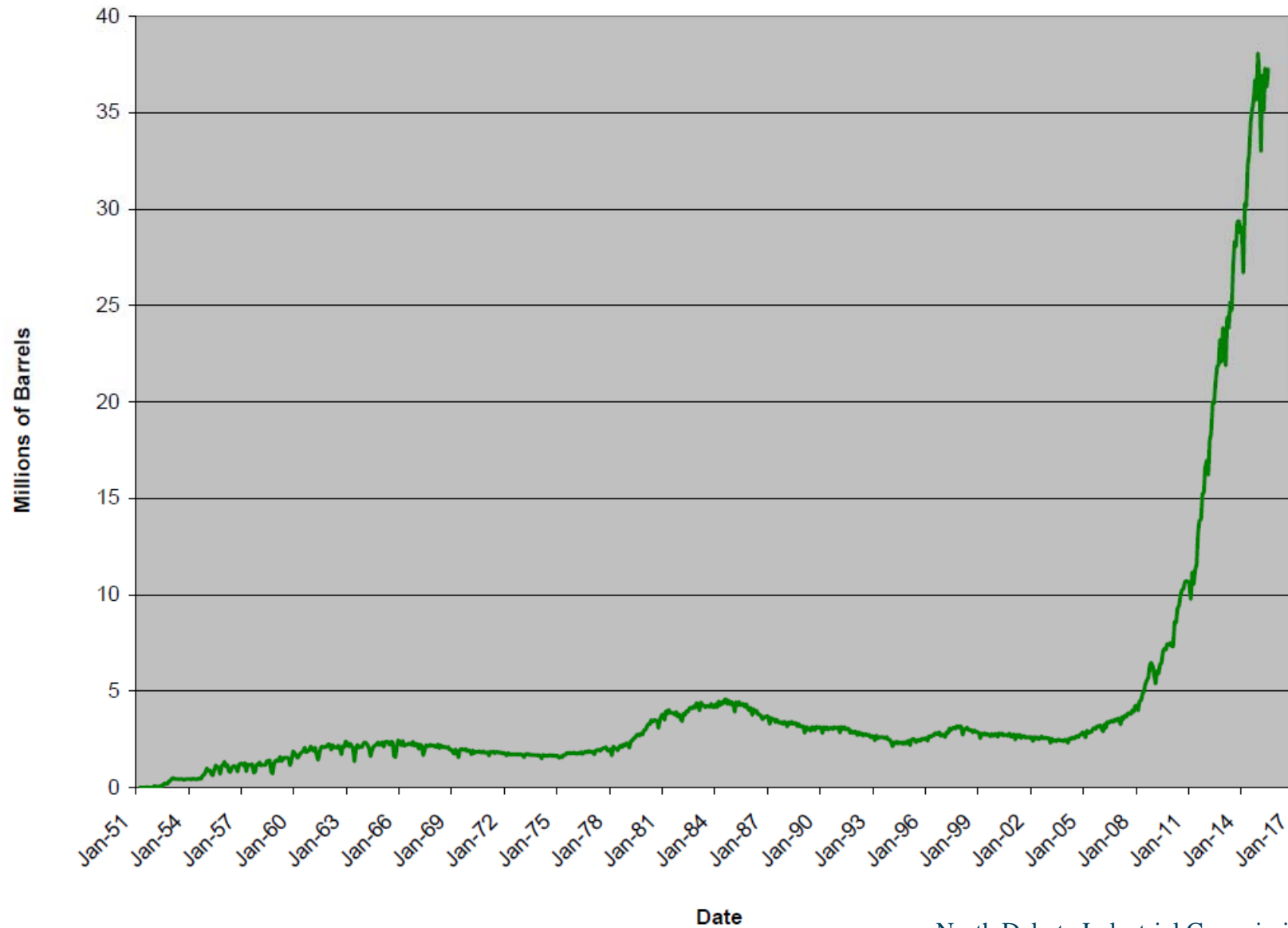


The Bakken Formation

- ▶ Produces 1.1 million barrels of oil per day
 - Over 60 percent of this oil is shipped by rail
 - The remainder is shipped by pipeline or consumed locally



Bakken Crude Oil Production



Why Oil Travels by Rail

- ▶ Lack of pipeline capacity
- ▶ Flexibility of rail
- ▶ Gives oil producers the ability to shop around their product to various rail-served refineries
- ▶ Lack of refineries in ND

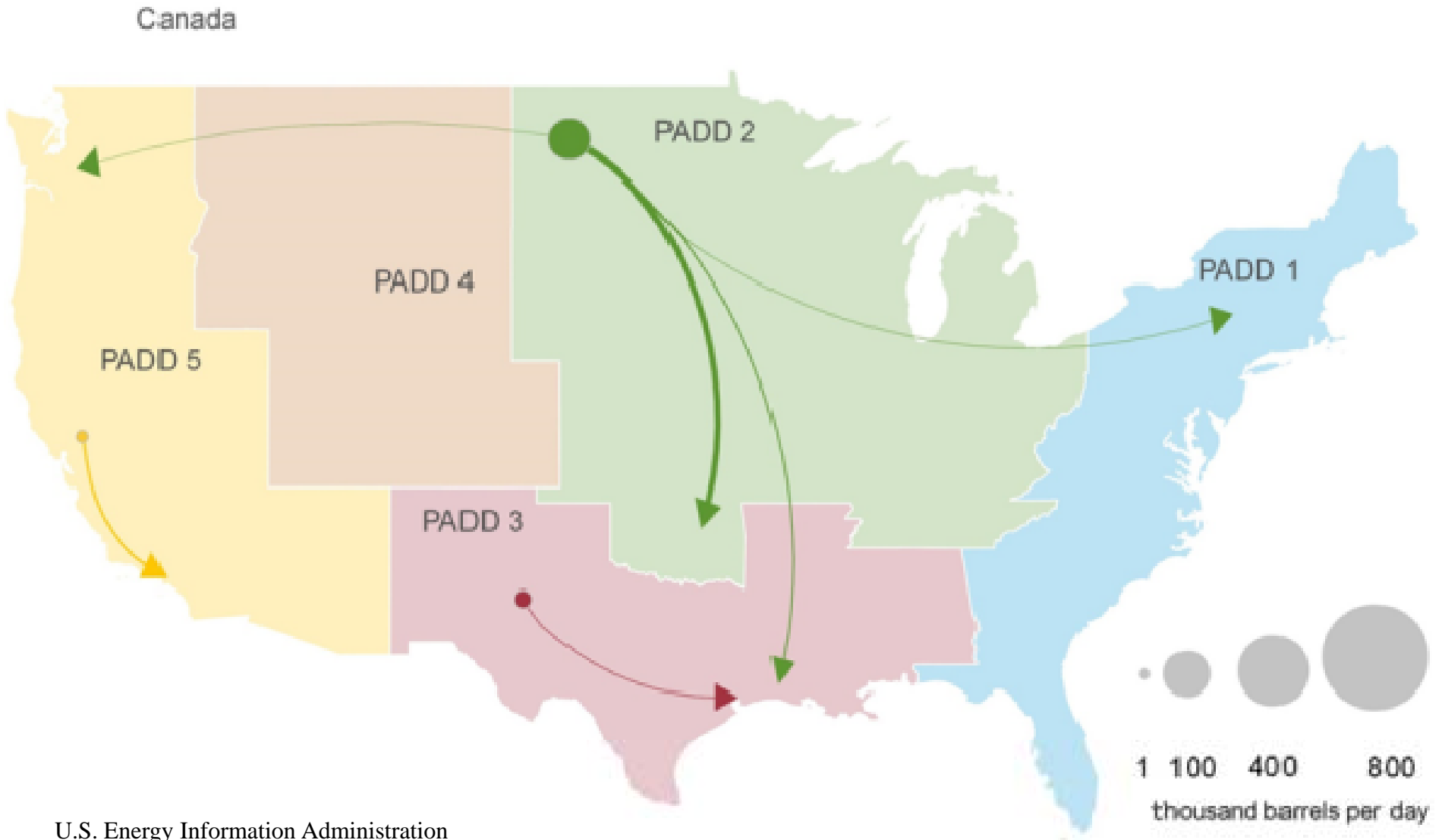


Crude By Rail Volumes

- ▶ The Bakken produces 1.1 million barrels of oil per day
 - Over 60 percent of this oil is shipped by rail
 - About 6 trains per day travel through Minnesota or 18 million gallons/day



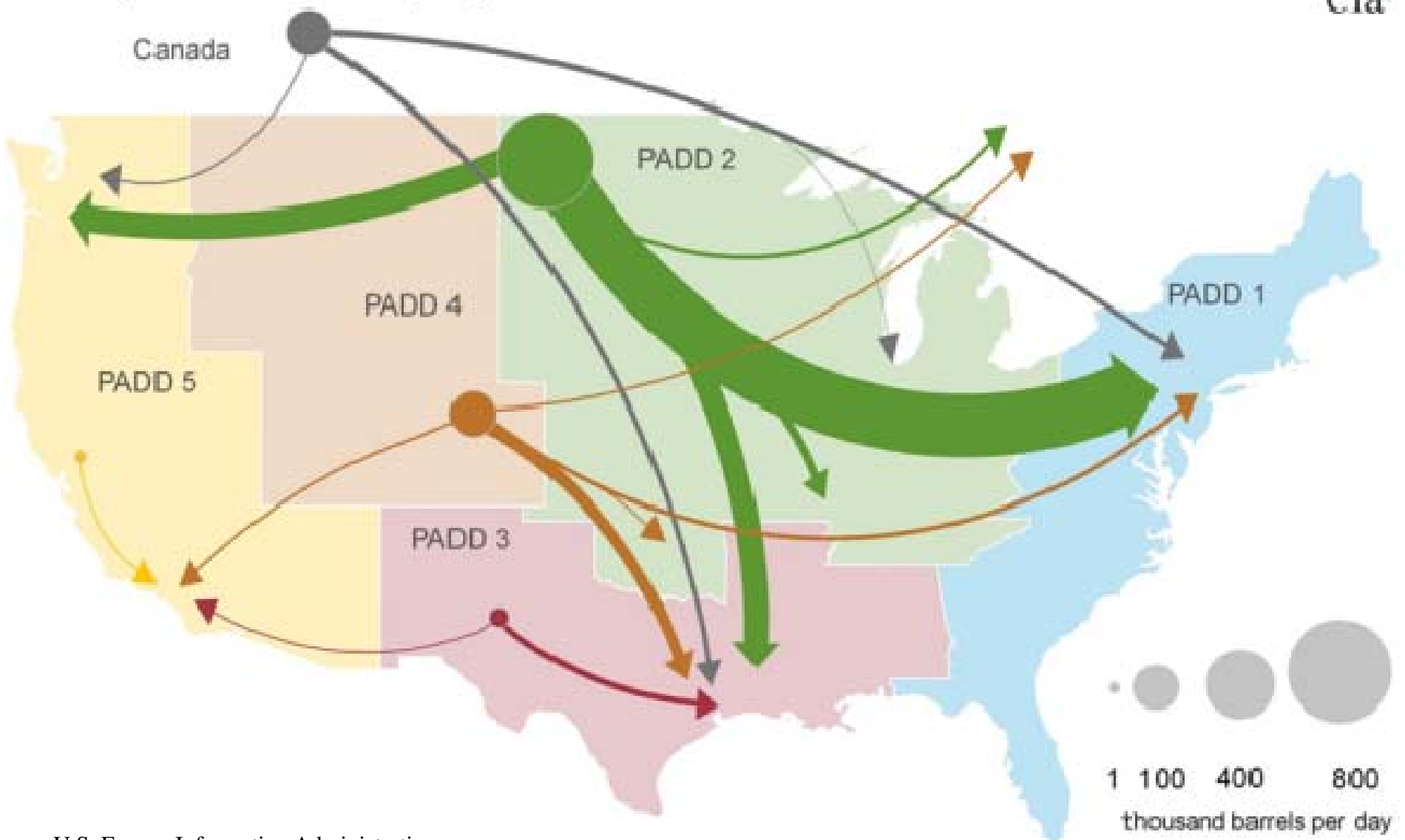
Crude-by-rail movements (2010)



U.S. Energy Information Administration



Crude-by-rail movements (2014)

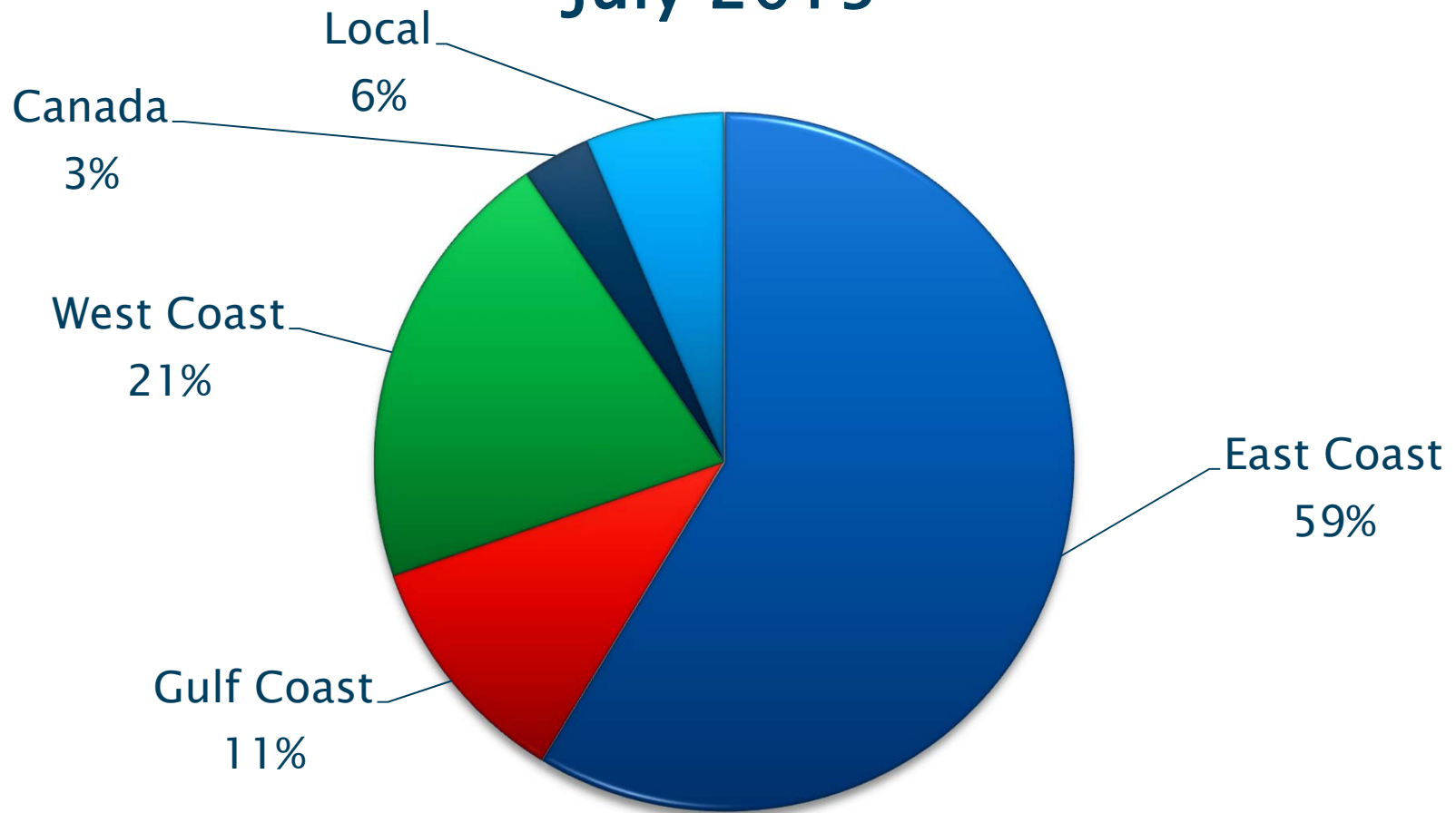


U.S. Energy Information Administration



Bakken Crude by Rail Destinations

July 2015



U.S. Energy Information Administration



Safety Concerns



- ▶ Bakken crude oil is highly volatile (contains natural gas liquids)



Safety Concerns



- ▶ Sturdy but complex mode, many moving parts & human interaction to allow faults, failures
- ▶ Potential for deficiencies in track, signals, tank cars, operations



Safety Concerns

- ▶ Spills toxic to environment, hard to contain
- ▶ Different problems for different modes
- ▶ Pipeline has fewer but larger spills
- ▶ Pipelines carry most oil, but rail volumes have become significant and growing
- ▶ Rail exposure in urban areas, grade crossings create conflict points



Rail Regulatory Structure

- ▶ Interstate Commerce – federal regulation, pre-empt local control
- ▶ Railroad powers of eminent domain
- ▶ Common carrier status, must accept shipper's tendered cargo without restriction
- ▶ Local 'police powers' apply if they do not hinder interstate commerce
- ▶ State of MN manages grade crossing safety, partners in federal programs, rail development



Crude by Rail: State Response

- ▶ Increased MnDOT rail safety inspectors to two track inspectors, one hazmat inspector, and one equipment inspector (hiring). Funded via railroad assessment.
 - Inspectors monitor compliance with safety standards
 - Inspectors are trained and certified by the Federal Railroad Administration; work in conjunction with federal inspectors
 - FRA can fine railroads for serious safety violations
 - CBR corridors and rail yards are inspected once per quarter; all rail lines inspected once per year



CBR: State Response

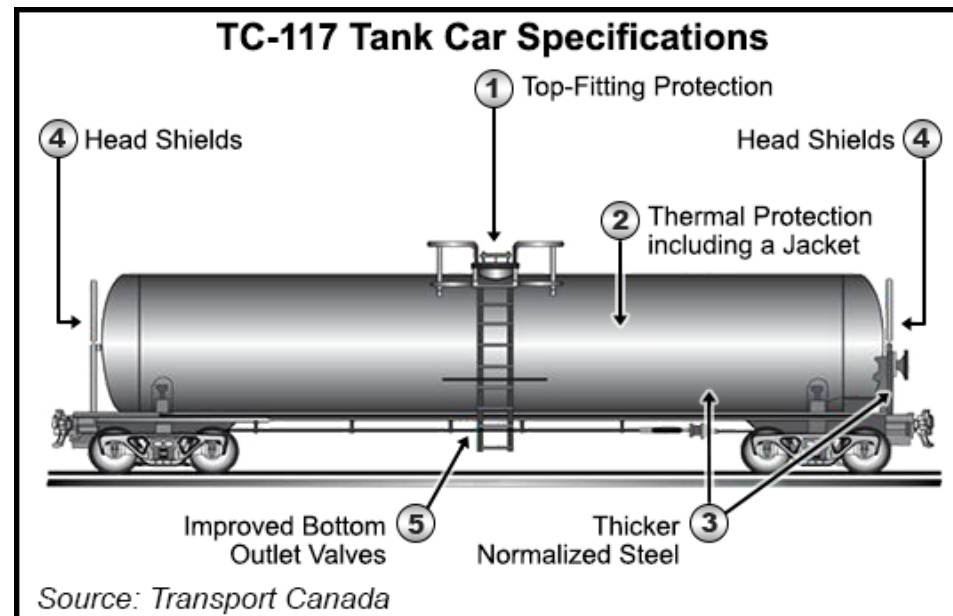
- ▶ Increased first responder training (funded via railroad assessment).
- ▶ Required filing of railroad emergency response plans.
- ▶ Required DPS to file report on emergency response preparedness
- ▶ Required MnDOT to conduct a CBR grade crossing study
- ▶ Provided \$7M (\$2M in 2014 and \$5M in 2015) for CBR grade crossing improvements.



Crude by Rail: Federal Response

▶ Enhanced tank car standards

- Thicker, more puncture-resistant tank of stronger steel
- Top-fitting protection and head shield
- Thermal insulation encased in steel jacket
- New cars after 10-1-15 and required retrofits



Crude by Rail: Federal Response

▶ Train operations

- Maximum train speed of 40 mph in high threat urban areas
- Requirement for routing analysis
- Electronically controlled train braking
- Information on hazmat movements to communities

▶ Hazardous Product Labeling

- Enhanced sampling and testing
- More accurate labeling



Crude by Rail: Railroad Response

- ▶ Increased track inspections (manual and automated)
- ▶ Slower train speeds
- ▶ Wheel detectors
- ▶ Track infrastructure investments
- ▶ Improved braking systems
- ▶ Rail routing risk analysis
- ▶ Increased first responder training
- ▶ Increased emergency response capacity



Where Do We Go From Here?

- ▶ Continue to improve prevention, preparedness and emergency response capabilities
- ▶ Improve communication and coordination between state and local government
- ▶ Improve communications and coordination with railroads
- ▶ Strengthen state and federal safety oversight.





Questions

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