

How Safe Are Pipelines?

Moving Canadian Oil to Market

University of Calgary

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U.S. Department of State:

“Adding an annualized 830,000 bpd from the proposed Project to the yearly transport volume indicates a potential additional 49 injuries and six fatalities for rail alternative compared to one additional injury and no additional fatality for the proposed Project on a yearly basis.”

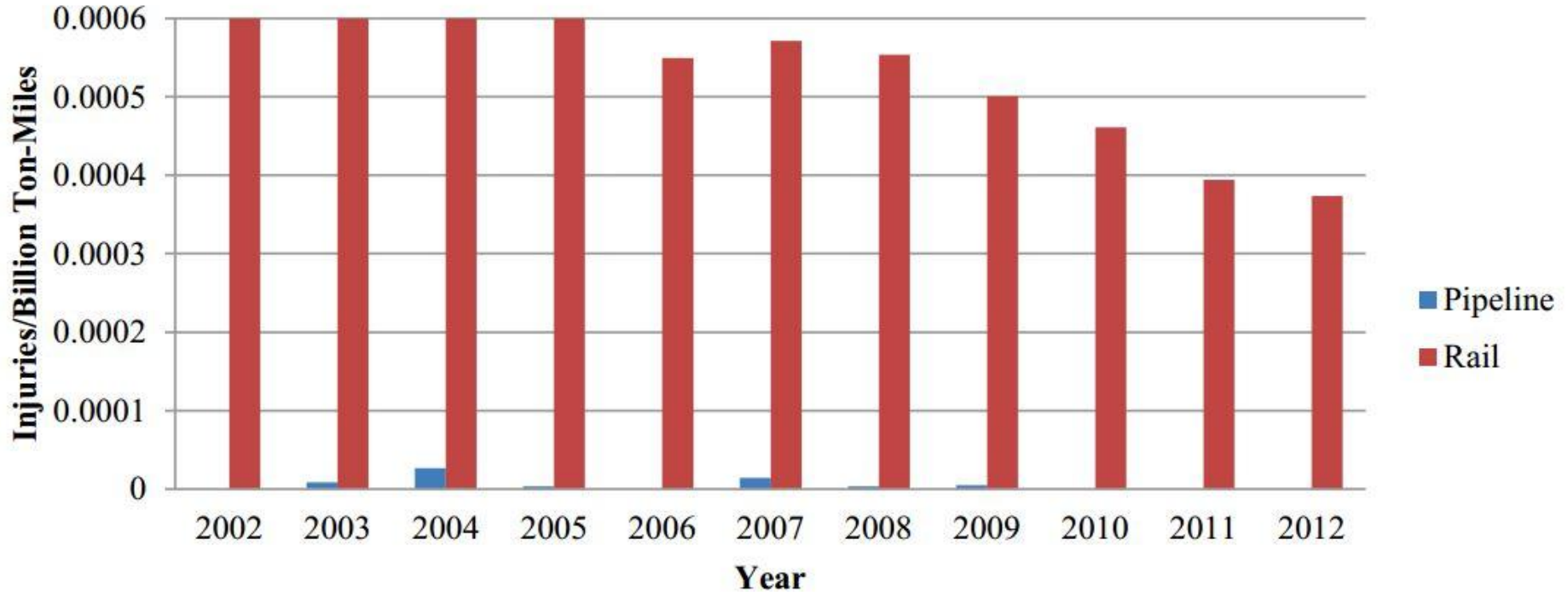
– Final Supplemental Environmental Impact Statement:
Keystone XL Project, page 5.1-96. January 2014.



Economic Policies
for the 21st Century

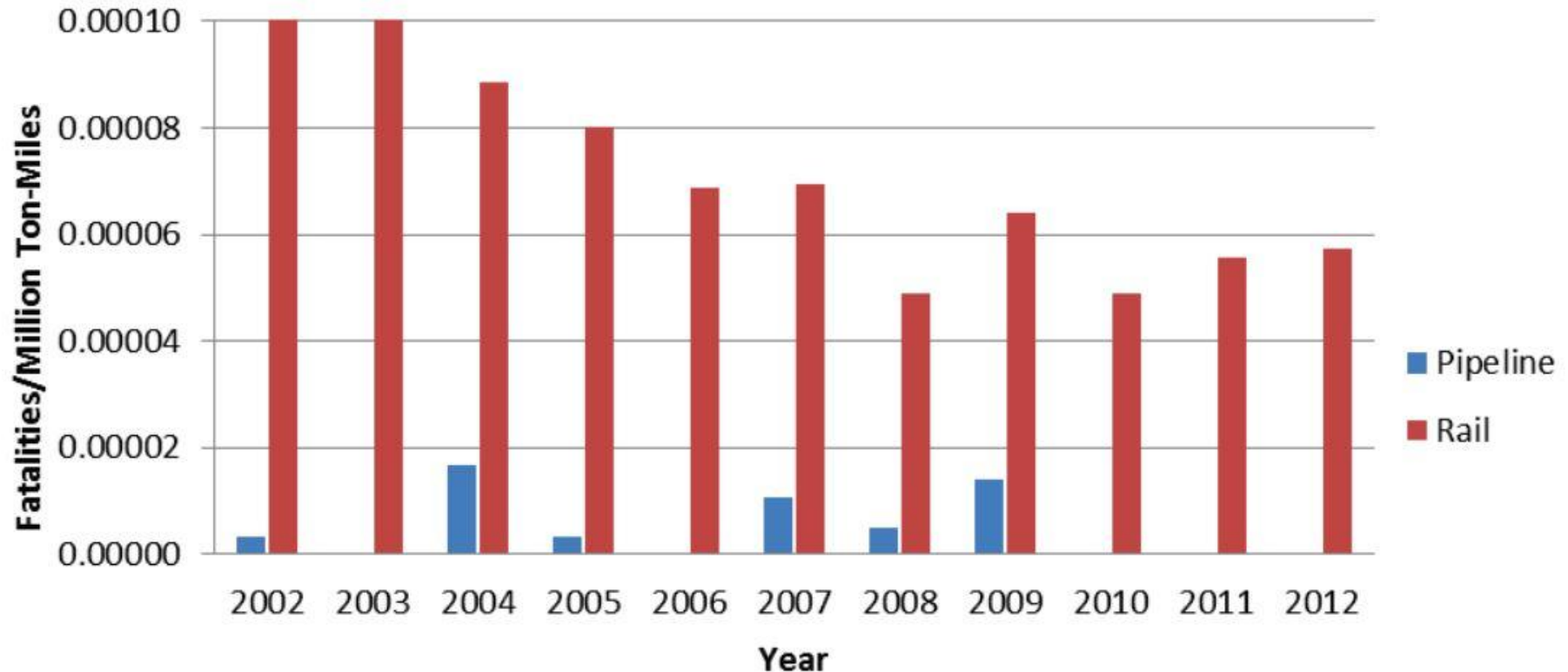
AT THE MANHATTAN INSTITUTE

Number of Injuries per Million Ton-Miles Transported: Petroleum Pipeline and Class I Rail



Source: "Final Supplemental Environmental Impact Statement: Keystone XL Project," United States Department of State, January, 2014.

Fatalities per Million Ton-miles Transported: Petroleum Pipeline and Class I Rail



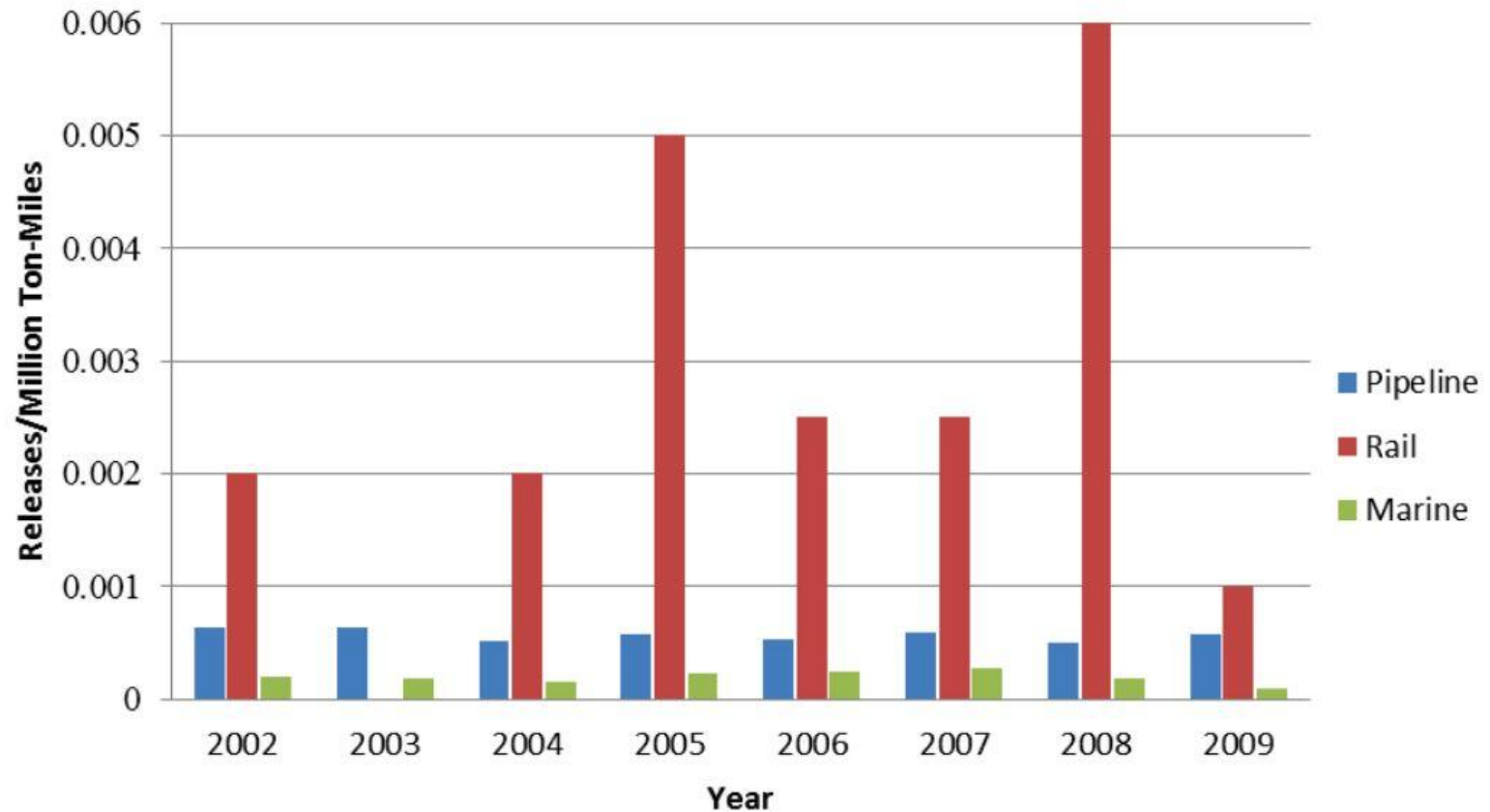
Source: "Final Supplemental Environmental Impact Statement: Keystone XL Project," United States Department of State, January, 2014.

Percentage of Incidents, Fatalities, Injuries, and Damages by Pipeline System (1994-2013)

	Incidents	Fatalities	Injuries	Damage
Natural Gas Gathering	2%	0%	1%	6%
Natural Gas Transmission	18%	11%	14%	26%
Natural Gas Distribution	25%	78%	76%	15%
Hazardous Liquid	55%	11%	9%	53%

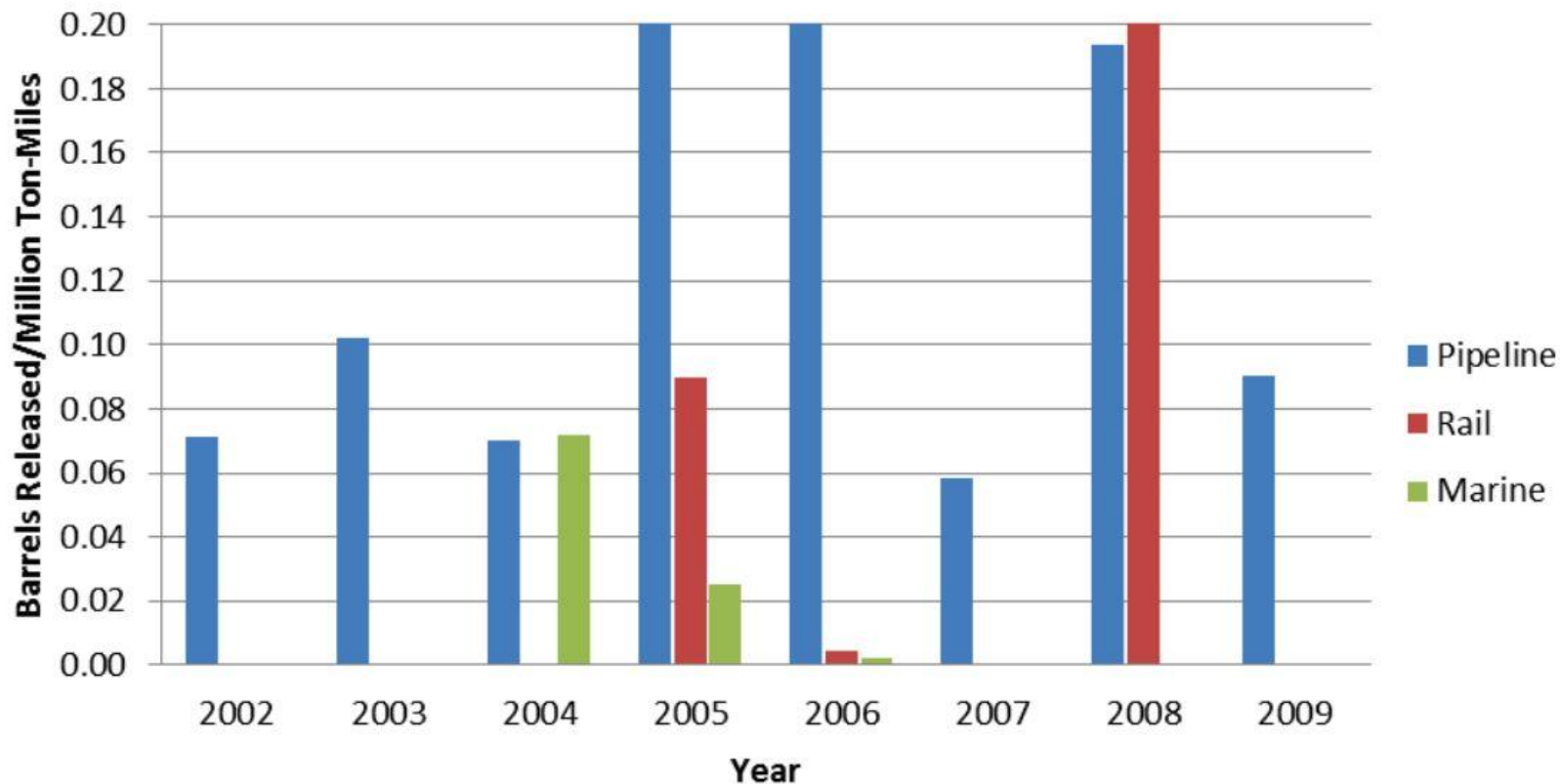
Source: "All Reported Incidents," U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration, and Economics21 calculations.

Number of Releases per Million Ton-Miles Transported, Crude Oil: Pipeline, Rail, and Marine



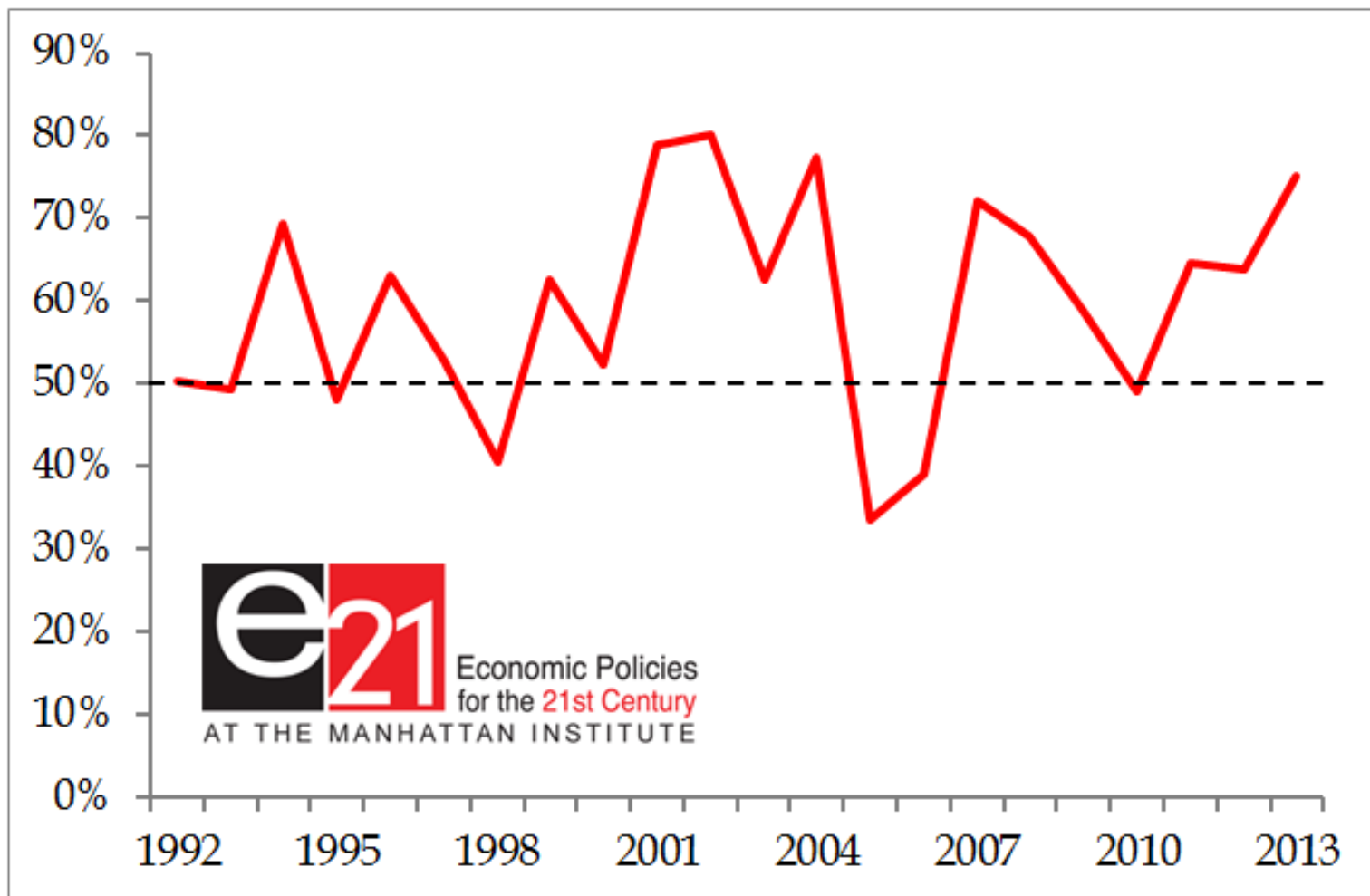
Source: "Final Supplemental Environmental Impact Statement: Keystone XL Project," United States Department of State, January, 2014.

Number of Barrels Released per Million Ton-Miles Transported, Crude Oil: Pipeline, Rail, and Marine



Source: "Final Supplemental Environmental Impact Statement: Keystone XL Project," United States Department of State, January, 2014.

Percent of Liquids Recovered from Reported Pipeline Incidents (1992-2013)



Source: "All Reported Pipeline Incidents," The United States Department of Transportation Pipeline and Hazardous Materials Safety Administration. Economics21 calculations.