

# Understanding the Risks of Tar Sands

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*March 11, 2013*

For the **South Portland City Council**

# Fishing in Western Maine



*Lewiston Sun Journal, submitted photo*

# Summer campers on Trout Lake, Stoneham



*John Ewing, Maine Sunday Telegram*

# Pristine Drinking Water from Sebago Lake





# Maine Clammers off Casco Bay



The Courier-Gazette

# Coastal recreation & tourism



# Risks from Tar Sands

## Water Quality



## Air Quality



## Economy





# Recap: Tar sands & Pipelines

- “ Tar sands too thick to pipe normally
  - . Diluted with toxic chemicals
- “ Spills more toxic, dangerous; difficult to clean up
- “ Tar sands pipelines spill 3 times more often
  - . There are no pipeline safety standards designed for tar sands
- “ Aging pipeline passes through drinking water resources
- “ Air quality impacts in South Portland
- “ Environmental, health & economic risks far too great for this pipeline to transport tar sands.





# Kalamazoo River, Michigan

## July 25, 2010





# Kalamazoo River, Michigan

July 26, 2010





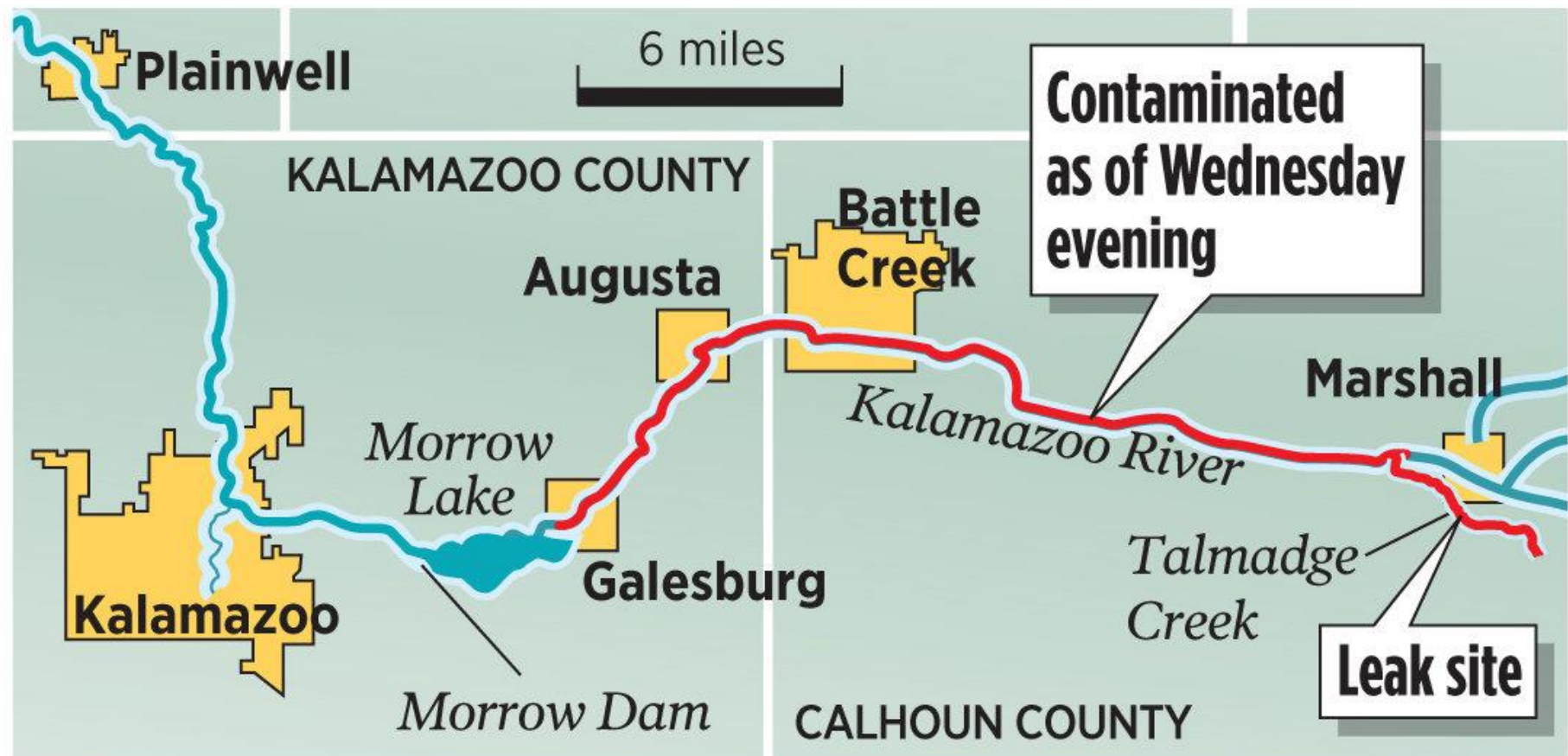


EPA



# Oil spill spreads along Kalamazoo River

As of Wednesday evening, the oil slick on the Kalamazoo River from a pipeline spill into Talmadge Creek had moved into the Galesburg area.



Source: Kalamazoo County Sheriff's Department

GAZETTE GRAPHIC/KRIS KINKADE





Michigan DEP



## Air quality monitoring







# NOTICE



By order of the  
Calhoun County Public Health Department  
this river is closed for all  
swimming, boating and fishing  
until further notice.

Recent contamination as a result of  
the Enbridge Energy oil spill have made  
this river unsafe to use.



Please Contact  
269-969-6371



GREENPEACE



Home for sale near  
the Kalamazoo River

# Excavation of submerged oil, Kalamazoo River



*Jonathon Gruenke, Kalamazoo Gazette*



Could this happen to Sebago Lake?



Or South Portland?





What is Tar Sands?

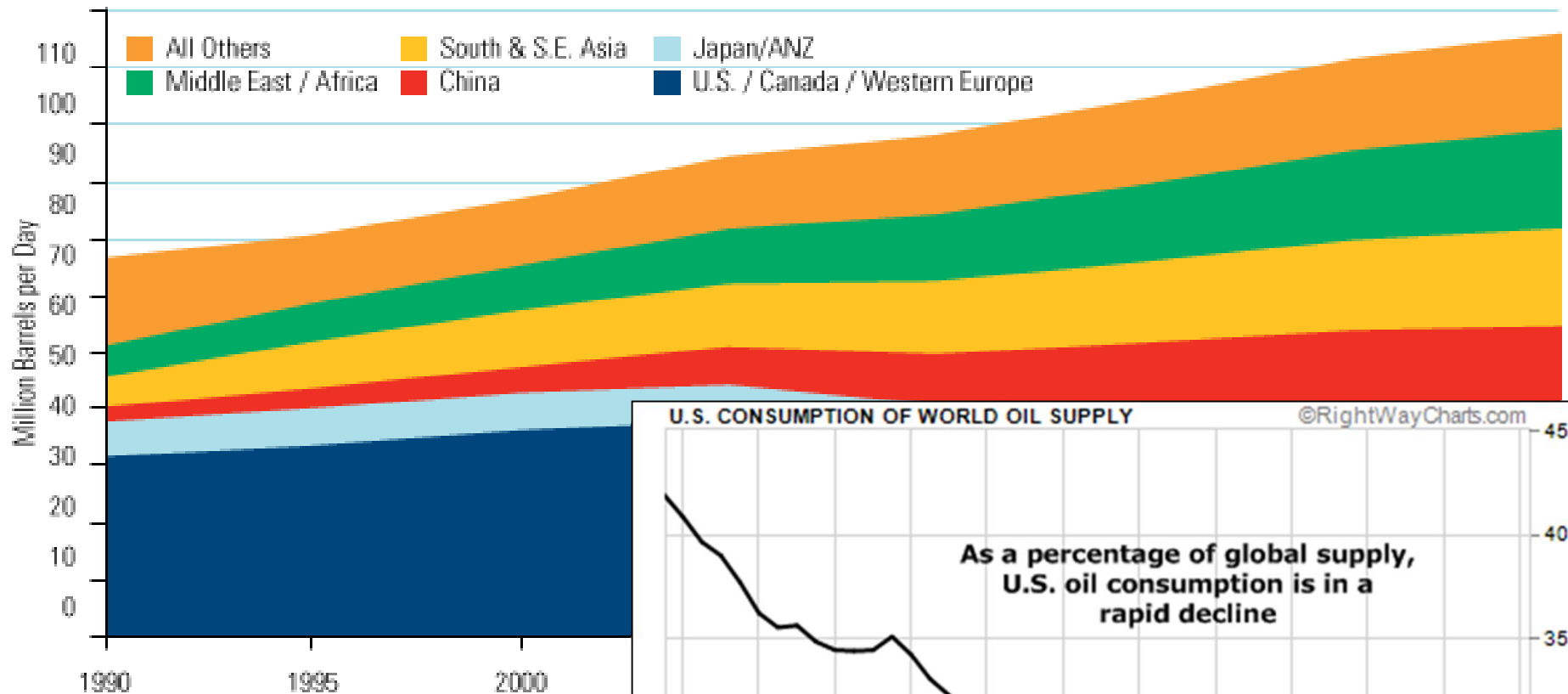




*David Dodge, The Pembina Institute.*

# Global Demand for Oil is Rising...

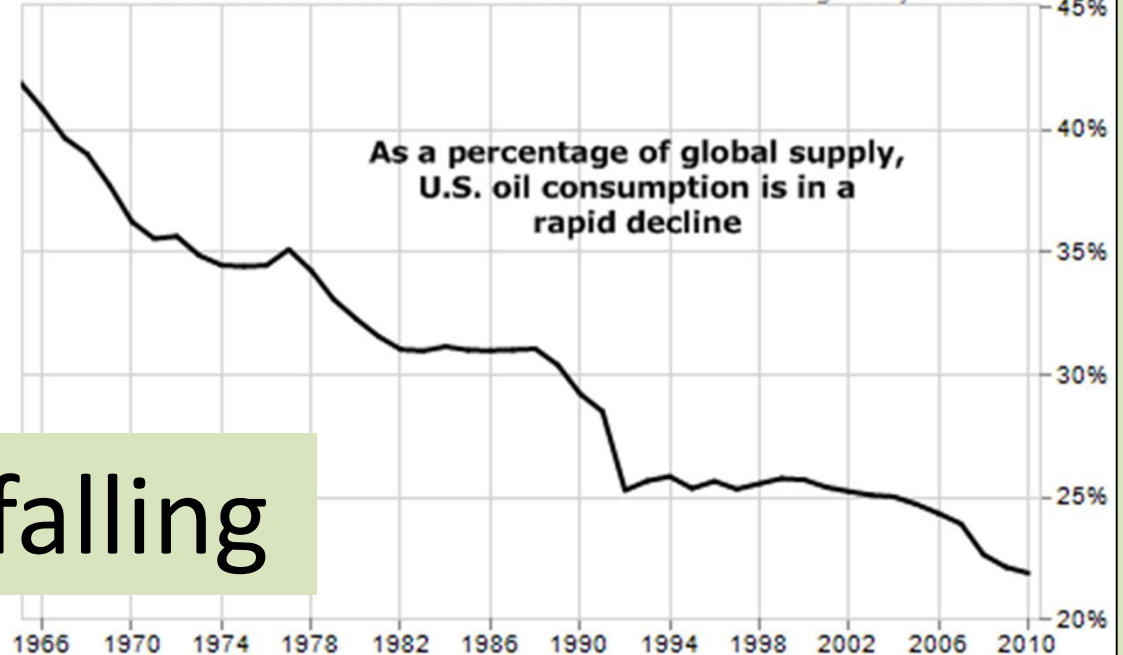
World Oil Demand 1990-2025



U.S. CONSUMPTION OF WORLD OIL SUPPLY

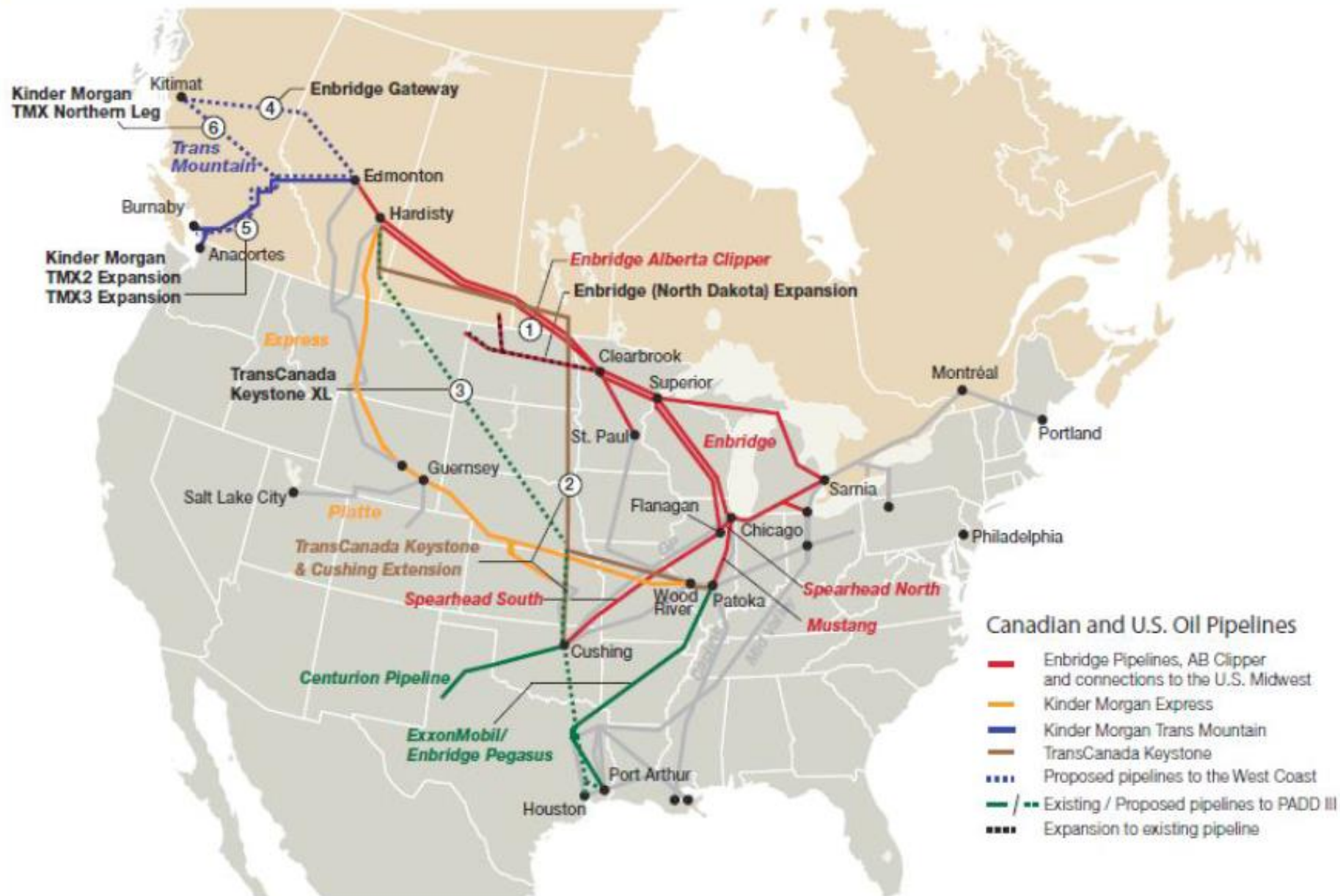
©RightWayCharts.com

As a percentage of global supply,  
U.S. oil consumption is in a  
rapid decline

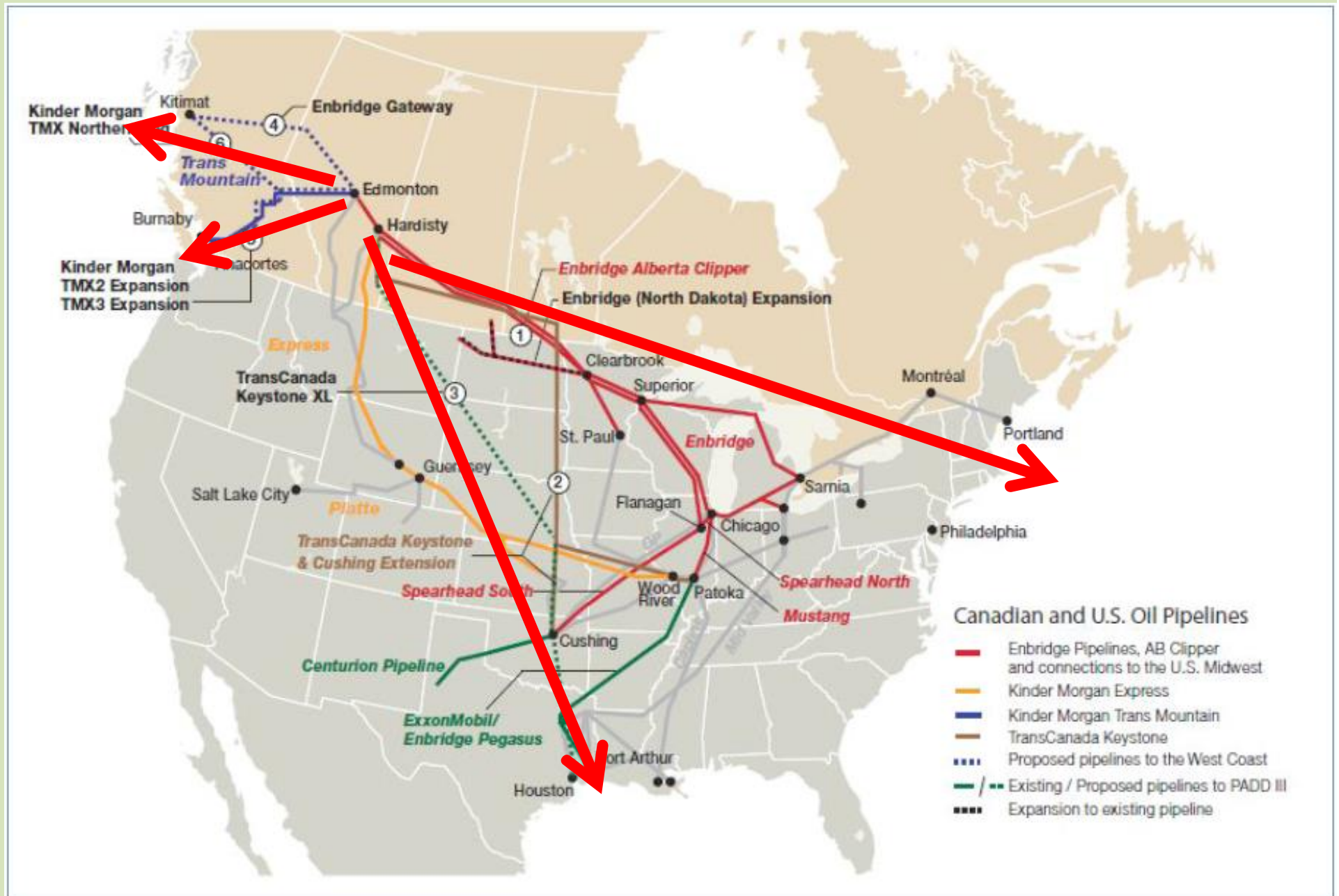


US Demand is falling







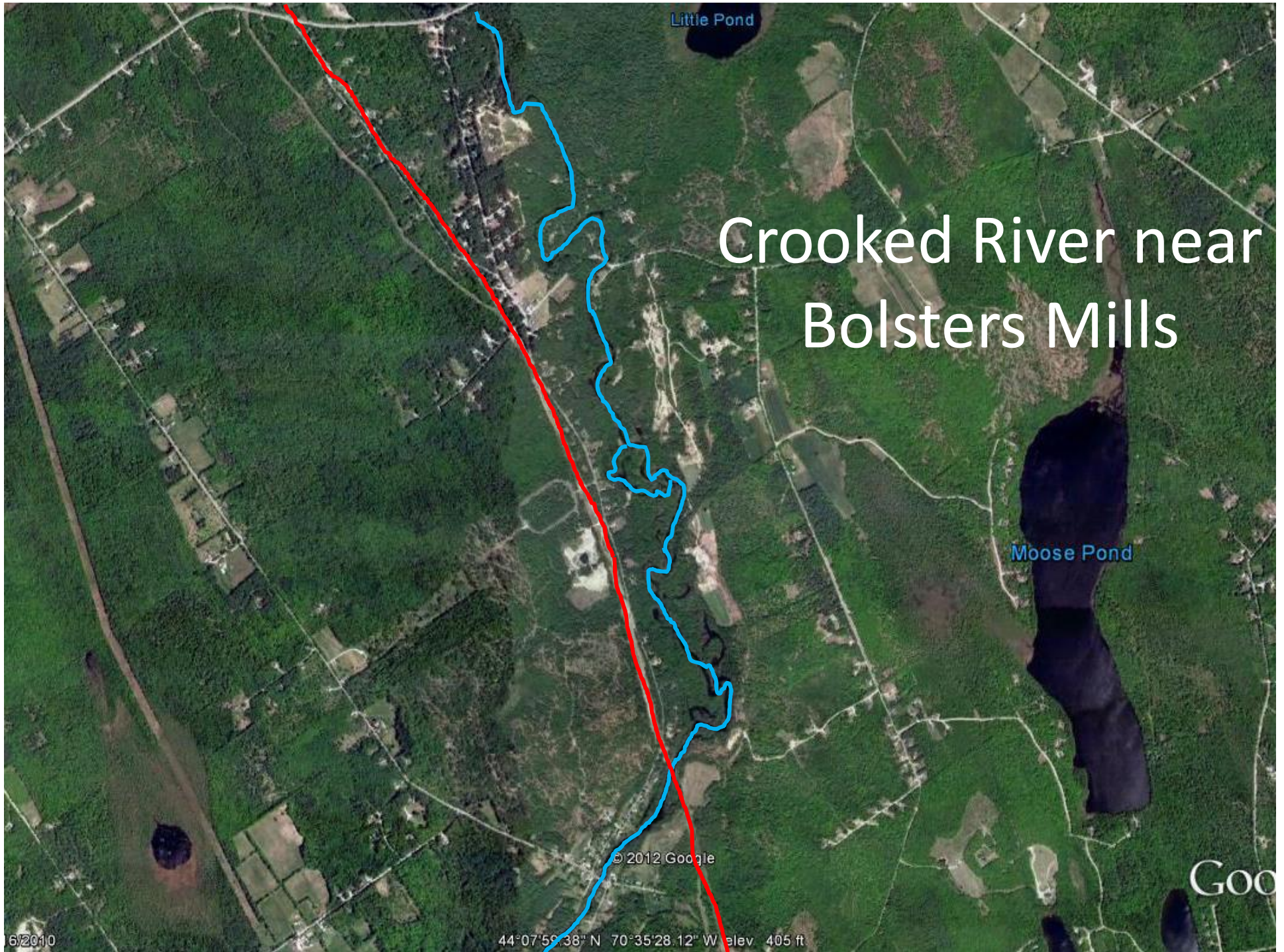


# This Tar Sands Oil Would Not Benefit Maine





# Crooked River near Bolsters Mills



6/2010

44°07'59.38" N 70°35'28.12" W elev 405 ft

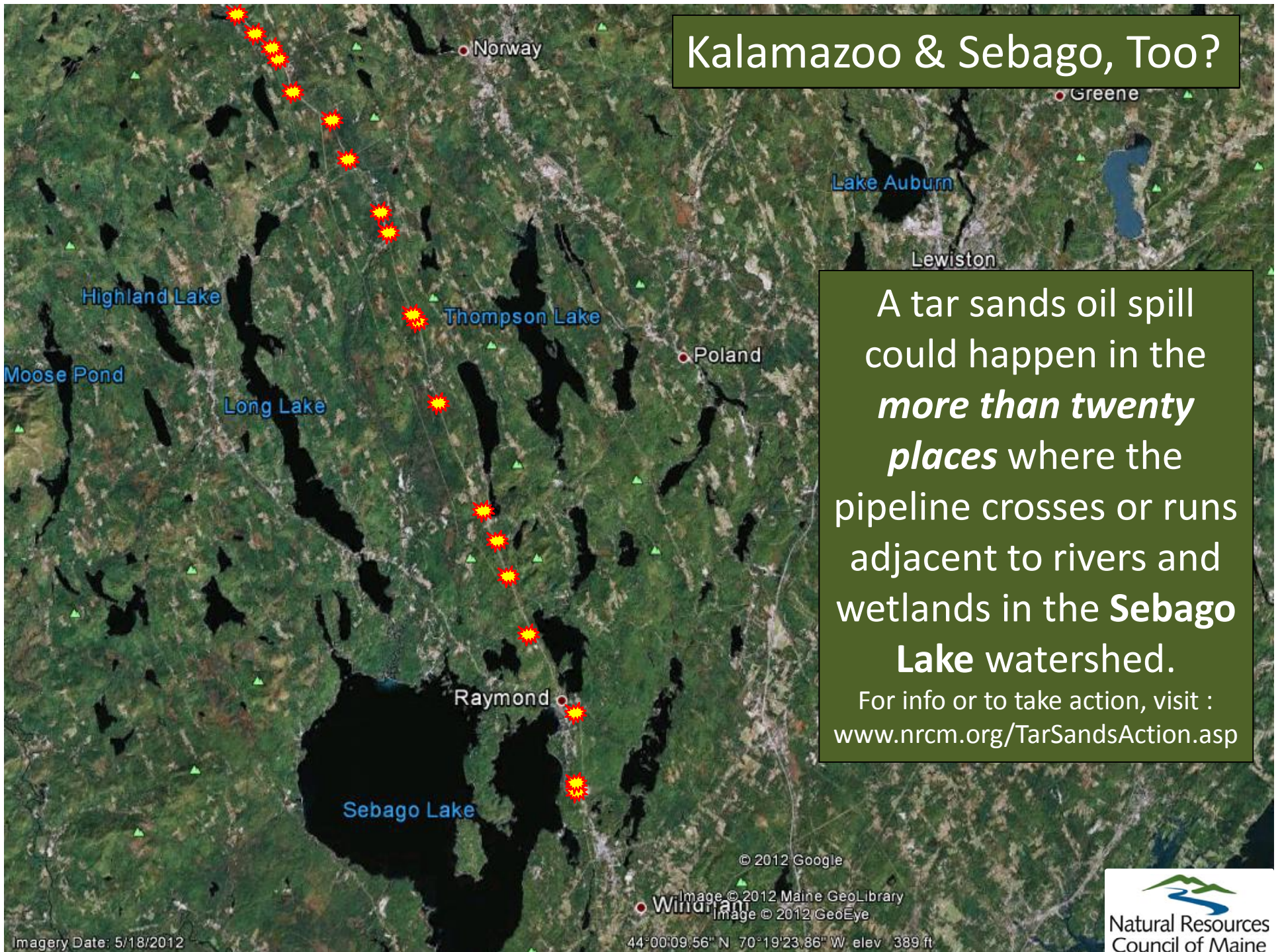
Google



## Kalamazoo & Sebago, Too?

A tar sands oil spill could happen in the *more than twenty places* where the pipeline crosses or runs adjacent to rivers and wetlands in the **Sebago Lake** watershed.

For info or to take action, visit :  
[www.nrcm.org/TarSandsAction.asp](http://www.nrcm.org/TarSandsAction.asp)



## Kalamazoo & Crooked, Too?

Crooked River

Bolster's Mills bridge

Oil pipeline

Sebago Lake

If the Kalamazoo River tar sands oil spill had happened on the **Crooked River** near Bolster's Mills, the *entire river to Sebago Lake would have been contaminated.*

For info or to take action, visit:  
[www.nrcm.org/TarSandsAction.asp](http://www.nrcm.org/TarSandsAction.asp)

# Presumpscot River to Casco Bay







National Transportation Safety Board



# Portland Water Main Breaks, Dec 2012



Toxic chemicals will be burned at and emitted  
from new combustion units





# Health Effects of VOCs

“Eye, nose, and throat irritation; headaches, loss of coordination, nausea; damage to liver, kidney, and central nervous system.

Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans.

Key signs or symptoms associated with exposure to VOCs include conjunctival irritation, nose and throat discomfort, headache, allergic skin reaction, dyspnea, declines in serum cholinesterase levels, nausea, emesis, epistaxis, fatigue, dizziness.”

- U.S. EPA

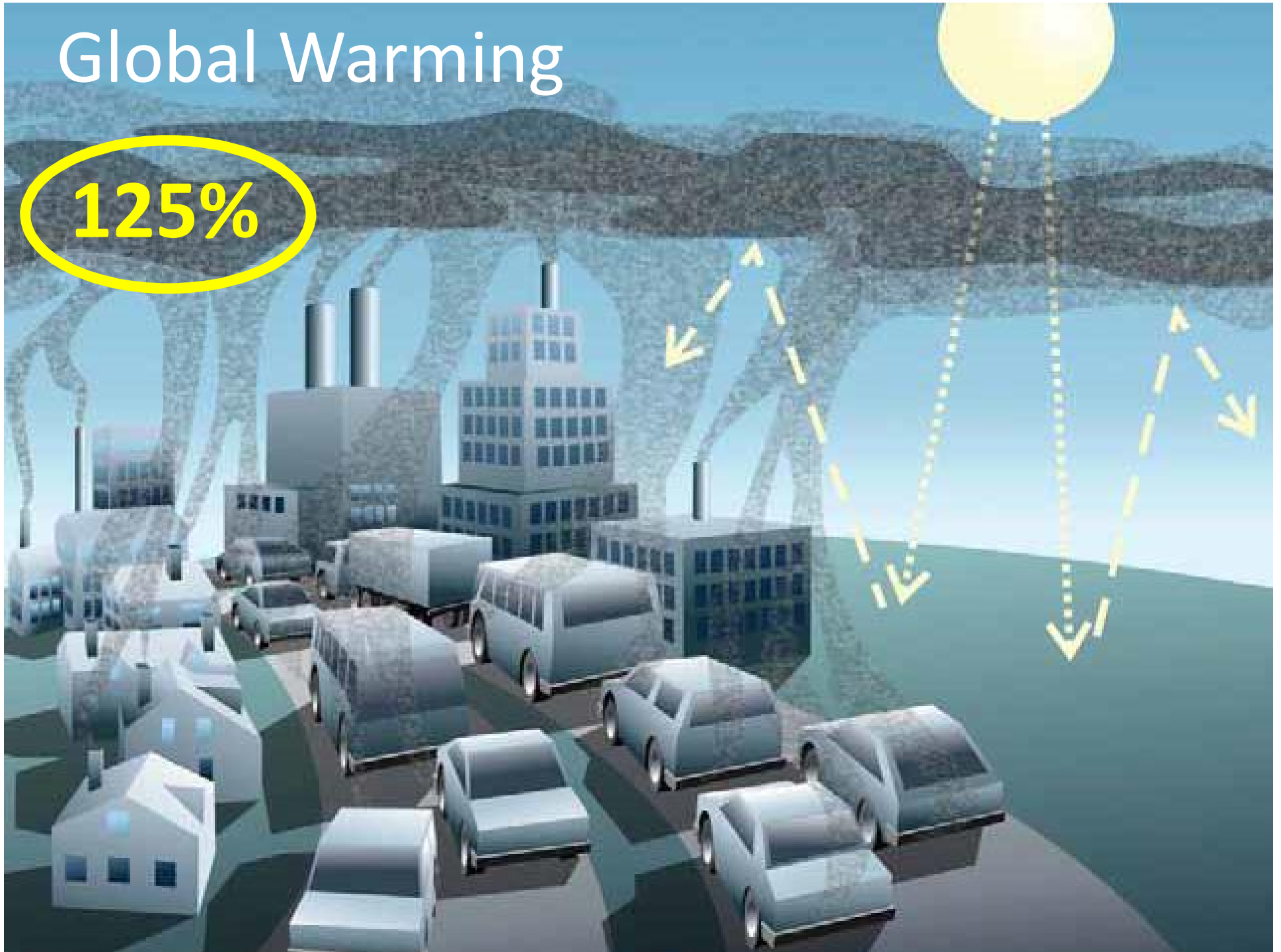
# Risks to Casco Bay



The Courier-Gazette

# Global Warming

125%





# Recap: Tar sands & Pipelines

- “ Tar sands too thick to pipe normally
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- “ Tar sands pipelines spill 3 times more often
  - . There are no pipeline safety standards designed for tar sands
- “ Aging pipeline passes through drinking water resources
- “ Air quality impacts in South Portland; new smokestacks
- “ Environmental, health & economic risks far too great for this pipeline to transport tar sands.



# Review & Permitting

- “ Ontario to Montreal “sister pipeline” currently in permitting process to reverse, carry tar sands.
- “ Maine DEP permitting done, limited.
- “ South Portland permit received previously, expired.
- “ Will there be an environmental impact review? Up to the U.S. State Department.
  - . **Without requirement of new Presidential Permit, there will be no overall review of risks & impacts.**











# Action: We Need Clean, Sustainable, Local Energy - Not New Dirtier Oil Imports

- “ There is no energy silver bullet but we have real options that add up to a better energy future.
  - . Dramatically increased energy efficiency for buildings and vehicles: Reduce oil bills by 30-60%.
- “ Support the call for an Environmental Impact Study before the Portland-Montreal pipeline starts carrying tar sands.
- “ Continue public education of this issue and better alternatives.



# Natural Resources Council of Maine

[www.nrcm.org](http://www.nrcm.org)

Extra slides

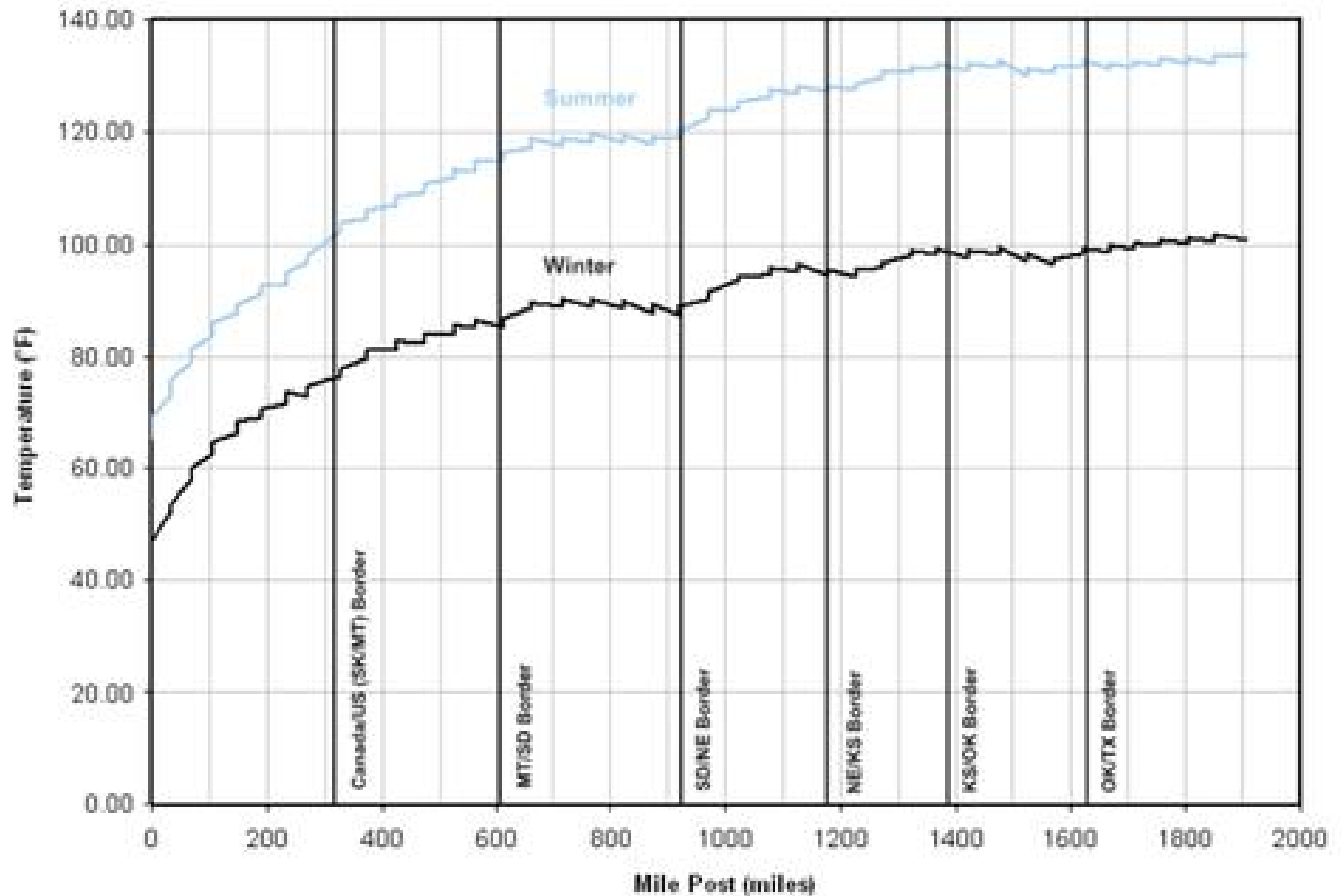


# Tar Sands is Not Like Regular Crude Oil

## Diluted Bitumen's Characteristics

Characteristics	Conventional Crude <sup>20</sup>	Diluted Bitumen	Point of Reference
Acidity (Total Acid Number - TAN)	0-0.3 <sup>21</sup>	0.856-4.32 <sup>22</sup>	Refiners require special measures to prevent corrosion when processing crudes with a TAN greater than 0.5. <sup>23</sup>
Viscosity	5 Centistokes (cST)	201 cST	Gasoline at the pump has a viscosity of 0.4–0.8 cST. <sup>24</sup>
Sulfur Content	0.34 % - 0.57 % <sup>25</sup>	3.37%	Gasoline has a sulfur content of less than 0.0000008. %
Pipeline Temperature	Less than 100° F <sup>26</sup>	158° F	Conventional crude pipelines tend to run at ambient temperatures.
Pipeline Pressure	600 pounds per square inch (psi) <sup>27</sup>	1440 psi	Industry defines a high pressure pipeline as one that operates at over 600 psi. <sup>28</sup>
Abrasives (quartz and silicates)	Nil	Keystone XL pipeline maximum capacity would mean over 125 pounds of quartz sand and aluminosilicates per minute. <sup>29</sup>	Common sandblasters use between 1.5 and 47 pounds of sand per minute. <sup>30</sup>

Excerpt from KXL application showing increased temperatures (due to higher pumping pressure for dilbit)



## California study showing spill incidents by pipeline temperature

### Incidents per 1000 mile years

