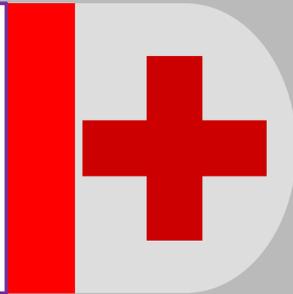


Vancouver: Proposed Tesoro-Savage Oil Terminal

With research and design support from:
Jonathan Tin, RN; Amanda Barker, RN; Andrey Korolev, RN

Health Risks

- Train noise
- Increased air pollution
- Increased water pollution
- Delay of emergency vehicles
- Potential rail car fires and explosions



Environmental Risks

- The volatility of Bakken crude
- Oil spills during loading and transport
- Climate change



Economic Risks

- No profit sharing with rail cities such as Spokane
- Displacement of specialized professions such as longshoremen
- Local business owner concerns



Noise pollution can result in:

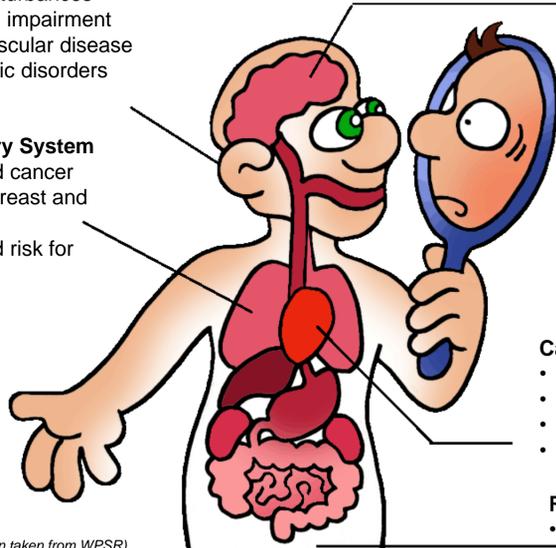
- Sleep disturbances
- Cognitive impairment
- Cardiovascular disease
- Psychiatric disorders

Increased risk for

- Stroke
- Development delays
- ADHD
- ASD
- Lowered IQ
- Adverse behaviors

Pulmonary System

- Increased cancer rates of breast and lung
- Increased risk for Asthma



Cardiovascular System

- Cardiac arrhythmias
- Myocardial infarctions
- Ischemic heart disease
- Congestive heart failure

Reproductive System

- Reduced sperm quality

(Health information taken from WPSR)

State environmental impact:

Much of the rail corridor lies along the Columbia River. A derailment and subsequent spill threatens valuable wildlife and an intricate ecosystem. (Source: Sightline Institute)



The aftermath of the derailment of a train carrying Bakken crude oil, in the Quebec town of Lac-Mégantic on July 6, 2013. 47 people were killed. (Taken from Earthjustice.org)



The Port of Vancouver in Washington State. Tesoro-Savage has proposed to build and operate the largest oil terminal on the West Coast. (Taken from Earthjustice.org)

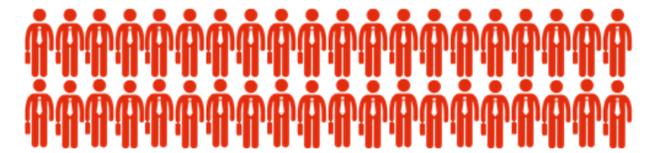
Cities at risk:

Tesoro Savage Proposal would bring an additional 4 loaded oil trains/day through WA, carrying **360,000 barrels of crude oil per day** exposing communities all along the rail corridor to chronic toxicants and a potential major disaster. (Taken from Sightline & Earthjustice)

110 FT Jobs*



Out of a population of over 161,000**



*(Source: Tesoro Savage Permit Application)

** (Source: 2010 US Gov WA Census Bureau)

Rail communities receive

\$0

1 Job gained by oil

16 Local jobs at risk*

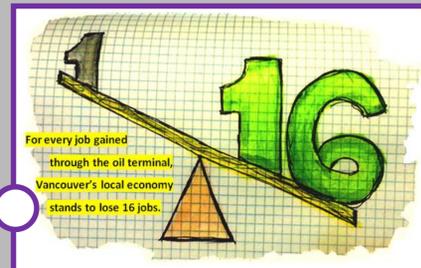
A major oil spill could cost WA:

\$10.8 billion
165,000 jobs

(WA State Dept. of Ecology)

Evaluate the local economic impact:

The introduction and use of BNSF rail lines to transport crude could result in loss of jobs related to freight of other cargo. Professions such as longshoremen and other freight personnel are at risk. *(Graphic and info taken from vancouver101.us)



Babies are at the greatest risk from DPM air pollution

- Higher rates of neurodevelopmental disorders
 - Autism Spectrum Disorder
 - Attention Deficit Disorder
 - Lowered IQ & Adverse Behavior
- 6% higher risk for asthma bronchiolitis and significantly increased risk of asthma diagnosis with increased severity and frequency of attacks
- Disruption of sexual differentiation during fetal development
- Increased cardiovascular, pulmonary and overall mortality



360,000 barrels per day
of crude oil per day is equivalent to more than **15 million gallons**



200 crossings
will experience additional delays of 5 minutes per train



increased fossil fuel consumption
results in greater increase in global temperatures



26,000 gallons
of 3% foam concentrate needed for 15 minutes to extinguish flames if disaster occurs

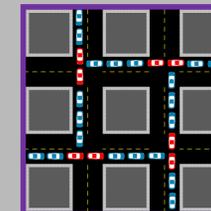


Emergency Preparedness

- In a survey of the state's 278 fire districts near crude by rail routes, 62% believe that their departments are not sufficiently trained or do not have the resources to respond.
- Delays at rail road crossing could delay emergency vehicles. 1000+ train cars can exceed more than 1 mile in length.

On an average day:

An addition of eight trains per day (4 loaded, 4 unloaded) will result in an approximate increase delay of 41 minutes per crossing per day. Think about trucks, deliveries, and commerce that would be slowed by this delay. (Tesoro-Savage DEIS)



Businesses that rely on freight by rail:

Crude-by-rail train traffic is already blocking and slowing other train traffic. If additional crude-by-rail trains are added to the rails, it will further slow train transportation through the state. (Map taken from sightline.org)



A small number that is actually quite large:

- 5-10 minutes could be the difference between life and death
 - Especially in the case of cardiovascular and respiratory emergencies as well as trauma. **Blocked train crossings can make all the difference.** (WPSR)

