

Pembina Propane Terminal Risks and Issues

Northwest Citizen Science Initiative White Paper: **Proposed Propane Marine Terminal in Portland**

[http://myhaydenisland.com/site/1607HINo/Portland Propane Terminal - NWCSI, 3rd rev ed Feb 27, 2015.pdf](http://myhaydenisland.com/site/1607HINo/Portland_Propane_Terminal_-_NWCSI_3rd_rev_ed_Feb_27_2015.pdf)

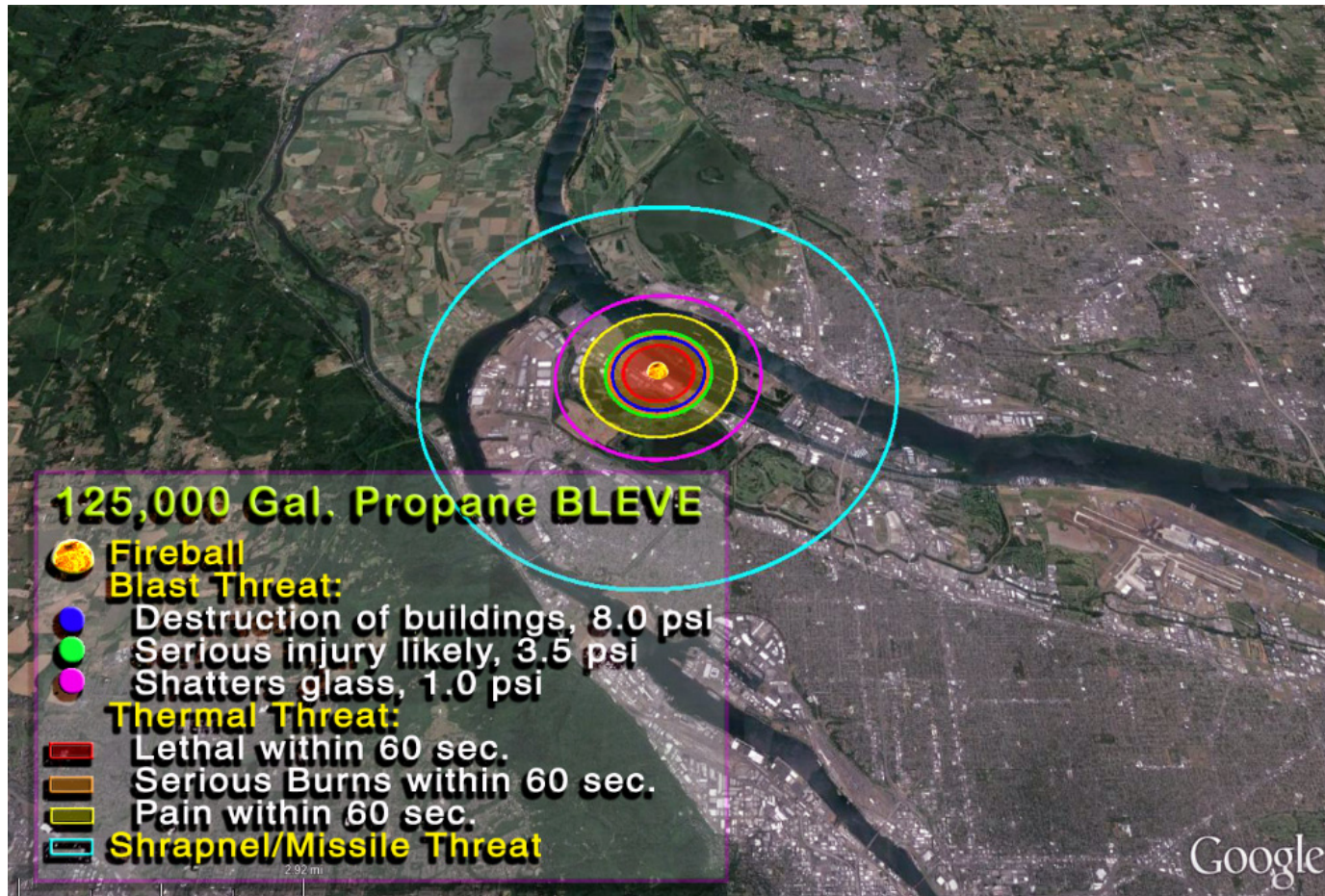
What the QRA Does Not Address

- Neither Pembina nor the Port of Portland address the risk imposed by “unit” trains (100 tank cars) arriving every other day
- The QRA explicitly assumes that the proposed safety systems will prevent a BLEVE (Boiling Liquid Expanding Vapor Explosion) or a Domino Effect BLEVE
- If you assume that there is no human error or engineering flaws over the lifetime of 25+ years, there are still 2 events capable of producing a BLEVE:
 - Overdue 7 or 7+ earthquake (terminal would reside in a liquefaction zone)
 - Terrorist Attack (truck bomb, rocket powered munitions, aircraft or drones)
- The QRA computes zones of “Risk”, not extent of a Domino Effect BLEVE or effects of a major rupture of the refrigerated tanks

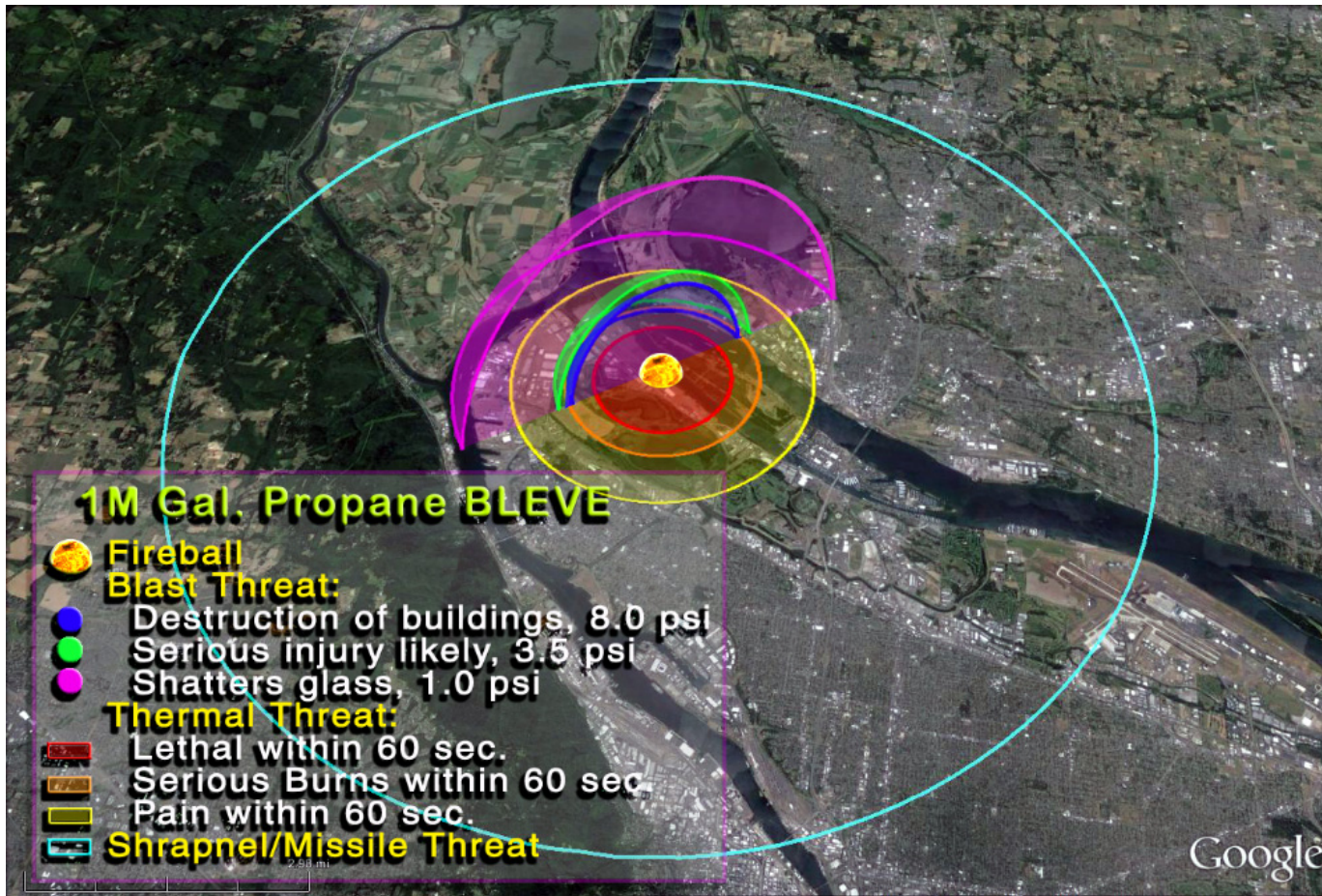
Simulation Results

- The following results are from the NW Citizen Science Initiative White Paper
- They are the results of simulations using ALOHA (Areal Locations of Hazardous Atmospheres)
 - Program is maintained and supported by the Hazardous Materials Division of National Oceanic and Atmospheric Administration (NOAA)
 - Widely respected and used by Fire Departments and first responders for Emergency Chemical Release Modeling
 - All of the input used for creating the simulations is in the White Paper
- White Paper also contains many references to previous incidents and explosions

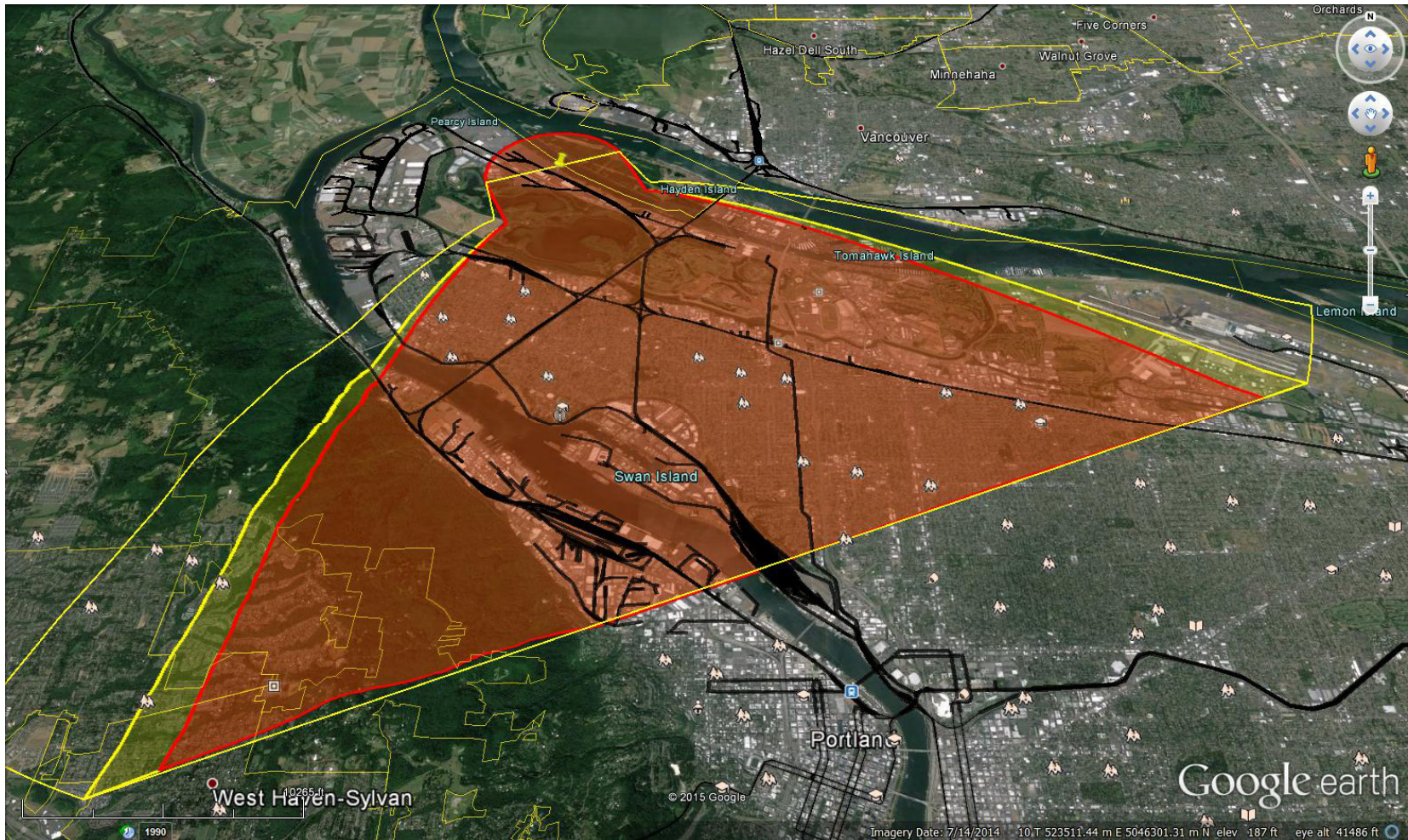
Single Bullet Tank BLEVE – 125,000 gallons



8 Bullet Tank BLEVE – 1,000,000 Gallons



Refrigerated Large Propane Tank Collapse



High-Risk Earthquake Liquefaction Zone



Propane Rail “Pipeline”

- Pembina does not address the dangers and risks of shipping by rail
 - “Out of their control”
 - But using latest DOT 112 tank cars
- The Neighborhoods that the trains pass through do not get the option to ignore the danger and disruption!
 - Initially 100 car unit train every other day
 - Sharing the rails with crude oil unit trains
- DOT 112 tank car safety record is checkered
 - More information appearing every day
 - NTSB and Canadian TSB have little to no control
 - NWCSI has a preliminary paper on these issues

Portland Needs to Make Decision

- Do we want to be a Oil and Gas energy trans-shipment terminal?
 - What is the cost to our neighborhoods?
 - Are we willing to tolerate the rail companies abysmal safety record?
 - How does this fit into our “green” image?
- The only reason that the Pembina Propane Terminal is not a “Done Deal” is the Environmental Overlay Zone restrictions
 - There is essentially no place in the permitting process that it can be overturned if it meets the requirements!
 - The city and the state have no control over the rail system
 - The only way to eliminate the rail traffic is to insure that it does not have a destination!
- These issues, as well as the safety issues, should be addressed before any action on the environmental overlay is taken