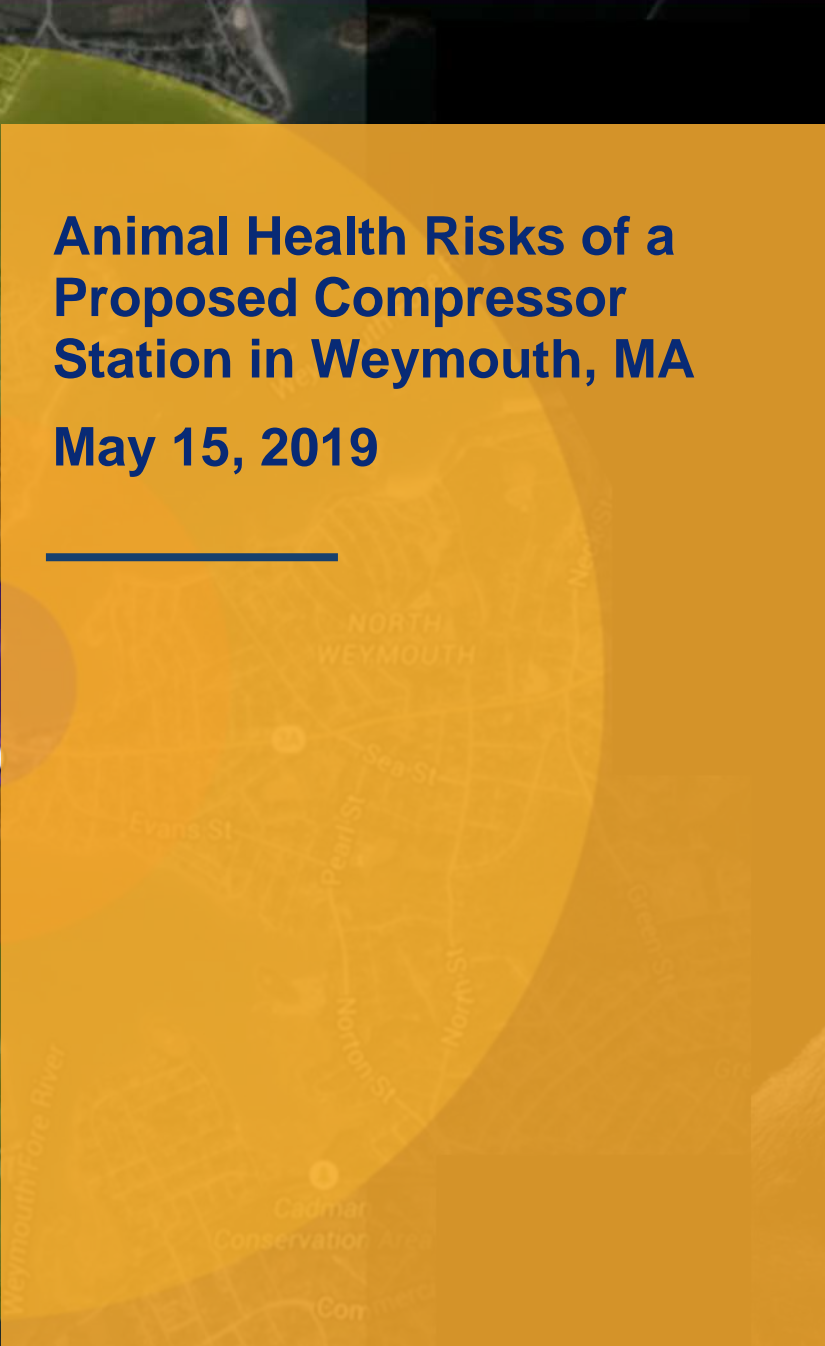


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Animal Health Risks of a Proposed Compressor Station in Weymouth, MA

May 15, 2019



SPRING 2019

Forensic Veterinary Investigations, LLC
Authored by: Martha Smith-Blackmore, DVM



FORENSIC VETERINARY
INVESTIGATIONS, LLC



Dedicated with sorrow and compassion for the family of Milo & Simba Soto

Animal health is at risk

wherever human health is at risk



Michael Pettigrew

***One Health** recognizes the interconnection of people, animals, plants and their shared environment.*

Centers for Disease Control and Prevention

Animals share our human susceptibility to environmental hazards. Further, the love that people have for the animals in their families also has implications for human safety. This lesson was learned in a harrowing way during the 2005 coastal Louisiana disaster of Hurricane Katrina.

Particularly notable were the scenes of residents being hauled up by helicopters, trudging through waist-high water, or floating down rivers that once were streets while clutching their companion animals. Nearly 50 percent of those who chose to stay put during Katrina did so because they refused to leave their pets, and many died.



Jonathan Harvey wades through floodwaters with his dog “Cuddles” on Aug. 29, 2005. John Bazemore / AP / Via apimages.com

Greater Boston Physicians for Social Responsibility (PSR) released reports in February and May of 2019¹ detailing grave concerns about the health impact and emergency response hazards of a methane compressor station that Algonquin Gas Transmission,

¹ [Health Risks of A Proposed Compressor Station in Weymouth](#), Feb 2019 and [Flammable, High-Pressure Industry in a Populated Coastal Flood Zone? Public Safety and Emergency Response Aspects Of a Proposed Methane Gas Compressor in Weymouth](#), May 2019. Baker et. al., Greater Boston Physicians for Social Responsibility.

LLC (a subsidiary of Spectra Energy) proposes to construct in Weymouth, MA, in the Fore River Basin.

PSR also specifically rejected the conclusion of the January 2019 health impact assessment (HIA)² released by the administration of Governor Charlie Baker, which claims that the proposed compressor station will have ‘no health impact.’

In this report, we wish to broaden the PSR objections to include the health and safety concerns of animals in this potentially impacted area, and to consider the effects of the human-animal bond during disasters, with the accompanying risks that bond causes.

It is our strong opinion that the compressor station does not belong in the densely populated Fore River Basin, for both human and animal health, safety and justice reasons, and because disasters impacting animals increase the pain and loss for people.

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“Preventive medicine isn’t just for people. Keeping animals healthy ultimately helps keep humans healthy.”

Barbara Natterson-Horowitz, MD

² [Health Impact Assessment of a Proposed Natural Gas Compressor Station in Weymouth, MA](#), Metropolitan Area Planning Council, January 2019.

Building on the concerns of PSR, we would like to highlight the impacted animals and increased vulnerabilities of families with pets in those same zones:

- The Weymouth site is too densely populated for a high-pressure compressor station that processes highly flammable gas. Compressor stations are almost never sited in densely populated, flood-vulnerable coastal areas like the man-made peninsula in Weymouth. Residents living with pets cannot be safely evacuated from this limited access geography in the event of an emergency. If a disaster were to strike when residents are not home, pets will not be evacuated. The impacts to wildlife calling the Fore River Basin home is almost impossible to calculate and beyond the scope of this document. Along with PSR, we find it alarming that plans to build this highly flammable, high-pressure gas infrastructure in such an inappropriate location have advanced this far.
- The health impact assessment shows that residents of the Fore River Basin are already burdened with excess rates of lung disease, heart disease and cancer. Animals also suffer from asthma and other lung diseases, cardiac diseases, and cancer. The increased impacts affecting people will also affect their pets. Wildlife are bio-accumulators of toxins, increasing concentrations up the food chain. Massachusetts wildlife becomes human food when hunted or fished.
- The health impact assessment shows that residents of the Fore River Basin are already burdened with elevated levels of hazardous air pollutants. Hazardous air pollutants will increase further with the construction of the proposed compressor station. These air pollutants are associated with diseases in people and animals, including cancer. The residents of the local Environmental Justice zones are not well positioned to absorb the amplified burden of increased and more frequent veterinary expenses for their pets. Two and four legged residents of the Fore River Basin deserve cleaner, not more polluted, air.
- Governor Baker, the Department of Public Health and the Department of Environmental Protection have rushed out a flawed and incomplete health impact assessment, the conclusion of which is contradicted by data in the PSR report. Furthermore, Governor Baker directed the health impact assessment to disregard the substantial public safety and emergency response hazards related to the proposed compressor station. Animal health and impacts of the imperiled

human-animal relationships have not be addressed whatsoever. Human-animal relationships include pets in our homes and wildlife in our local environment.

- The proposed compressor station, owned by a Houston-based company, will be used to transport methane extracted by hydraulic fracturing through New England for sale overseas. The air pollutants, safety hazards, and greenhouse gas emissions will remain here in Massachusetts, even as the methane gas is sold, and profits are accrued elsewhere. Our state’s greenhouse gas emissions will be increased by this project, at a time when climate change represents an ongoing public health threat to all human and animal residents of Massachusetts and all inhabitants of our one shared green earth.

We join the Greater Boston Physicians for Social Responsibility in their call on Governor Baker to protect the health and lives of *all* residents of Massachusetts by rescinding the air quality permit for the proposed compressor station in Weymouth.



Pixabay

“The history of fossil-fuel development has always been that certain people are expendable. What's changed is that new, larger populations are now considered expendable.” Josh Fox

FORE RIVER BASIN PET POPULATION

In Massachusetts, 49% of households have a dog, a cat or both.³ In Massachusetts, 28.9% of households own dogs, averaging 1.4 dogs per dog-owning household. Cat owning households represent 23.5% of households own a cat or cats, averaging 1.6 cats per cat-owning household. Over 3% of US households own a bird or birds, averaging 3.7 birds per bird-owning household.

More than 13% of US households also own specialty or exotic pets, such as fish, ferrets, rabbits, hamsters, guinea pigs, gerbils, turtles, snakes, lizards, poultry, and amphibians. Weymouth is home to a thriving exotic pet veterinary practice, The Odd Pet Vet, specializing in the care of less commonly owned pets. If the exotic pet population is large enough to support an exotic pet practice here, we can reasonably infer that the population of impacted exotic animals is also significant.

	In the incineration zone, within 1000'	In the blast zone, within 1/2 mile	Within 1 mile	In the evacuation zone, within 2 miles	In the pollution zone (3 miles)
Estimated human population	292	2,334	11,444	50,001	95,571
Number of households	130	1,134	5,316	21,959	42,163
Raw # of dogs <i>(28.9% of households, 1.4 dogs per hh in MA)</i>	52	459	2,151	8,885	17,050
Raw # of cats <i>(23.5% of households, 1.6 cats per hh in MA)</i>	48	425	808	3339	6410
Households w/birds & exotics <i>(13% of households in US)</i>	17	60	691	2,854	5,481
Estimated overall # of households with pets <i>(in the proposed impact area)</i>	63	556	2604	10,759	20,660

US Census Population & Housing Unit counts applied utilizing a Simple Area Weighting approach by Visualizing Pipeline Impacts | @PipelineImpacts | Stephen Metts

³ Am. Vet. Med. Assoc. (AVMA). 2017-18 U.S. Pet Ownership and Demographics Sourcebook. Schaumburg, IL: AVMA.

RESPIRATORY HEALTH

Cats and dogs are vulnerable to environmental airborne toxins in the same way that people are - and some other species are more vulnerable. Air quality hazards have known negative health effects on air breathing creatures, and water quality hazards have known negative health effects for aquatic and semi-aquatic species.

The effect of outdoor air pollution on companion animals, so far, has not been studied extensively; however, existing studies correlate with conditions seen in people. A retrospective radiographic analysis of the effects of urban air pollution on 1,892 dogs in Boston, Philadelphia, and New York showed an increased prevalence of non-specific chronic pulmonary disease (CPD) among dogs living in areas with increased air pollution.⁴ In a subsequent study, investigators studied the lungs of dogs from Mexico City and less polluted areas of the country and found structural lung changes, including mononuclear cell infiltrates, smooth muscle hyperplasia, peribronchiolar fibrosis, and vascular lesions, that represented an inflammatory response consistent with the radiographic abnormalities identified in the prior study and with lung lesions among urban dogs.⁵

More recently, investigators studied urban dogs from Mexico City and found histologic evidence of neuroinflammation and an increased abundance of messenger ribonucleic acid from two inflammatory genes in the brains of the dogs. The findings were correlated with reductions in performance on psychometric tests in children similarly exposed to ambient air pollution.⁶

Over the last 20 years, the incidence of asthma in cats has been rising, and this effect mirrors the increasing incidence in people. Dogs with chronic bronchitis and cats with airway inflammatory disease are at increased risk of exacerbated conditions if exposed to prolonged urban air pollutants.⁷

⁴ Reif JS, Cohen D. Canine pulmonary disease. II. Retrospective radiographic analysis of pulmonary disease in rural and urban dogs. *Arch Environ Health* 1970;20:684-9.

⁵ Reif JS, Rhodes WH, Cohen D. Canine pulmonary disease and the urban environment. I. The validity of radiographic examination for estimating the prevalence of pulmonary disease. *Arch Environ Health* 1970;20:676-83.

⁶ Calderón-Garcidueñas L, Mora-Tiscareño A, Ontiveros E, Gómez-Garza G, Barragán-Mejía G, Broadway J, et al. Air pollution, cognitive deficits and brain abnormalities: a pilot study with children and dogs. *Brain and Cogn* 2008;68:117-27.

⁷ Manzo N. D. Slade R. Dye J. A. 2010 Interrelationship of lung inflammation and air pollutant exposure on cellular oxidative stress and epithelial injury. *Proceedings 27th Symposium of the Veterinary Comparative Respiratory Society*, Plymouth, MA.

The Fore River Basin is already afflicted with high levels of air toxins and pollution; it is a community already struggling with an increased burden of cardiovascular and respiratory illnesses and cancers; and that the proposed compressor station is - even by data provided by the company itself - likely to worsen the health and safety of this already at-risk community.

The air quality and human health data within the body of the final HIA report is curiously minimized in the conclusion of the report, but it clearly demonstrates that the proposed compressor station poses an unacceptable health risk for the surrounding community. This is aside from the greenhouse gas emissions from the proposed compressor station and associated infrastructure, which in an era of climate change poses a health risk to all human non-human animal lives.

ENVIRONMENTAL JUSTICE HAS AN ANIMAL WELFARE COMPONENT

In Massachusetts a community is identified as an Environmental Justice community if any of the following are true:

- Block group whose annual median household income is equal to or less than 65 percent of the statewide median (\$62,072 in 2010); or
- 25% or more of the residents identify as a race other than white; or
- 25% or more of households have no one over the age of 14 who speaks English only or very well

There are four Environmental Justice census tracts within a 0.5-mile radius of the proposed Weymouth Compressor Station site.

Pet ownership rates remain the same across socioeconomic groups in Massachusetts. Residents of Environmental Justice census tracts are less likely to be positioned to access more frequent or more involved veterinary visits for their service animals and pets if their health is negatively impacted by the proposed Compressor Station.

EXPLOSION RISK AND EVACUATION

Methane is a flammable, compressed and explosive gas that is inherently dangerous. Pressure in interstate pipelines ranges from 200 to 1,500 pounds per square inch (PSI). This pressure is generated by compressor stations, such as the one proposed for Weymouth. There have been numerous documented pipeline explosion events in the United States. In September 2018, a series of 80 simultaneous gas explosions in the Merrimack Valley damaged more than 130 buildings, injured 23 people (including two

firefighters) badly enough to require hospital evaluations, and killed one person. The explosion and subsequent fire in one home killed a cat, and another cat from that same home is unaccounted for.

Residents living in the densely populated urban area in proximity to the proposed Weymouth compressor station - particularly children, the elderly and the disabled - could not be safely evacuated in the event of an emergency. Evacuation with service animals and pets in tow creates further complexities to an evacuation mission. There are an estimated 12,224 cats and dogs within the proposed evacuation zone.

After Hurricane Katrina, no one wanted to see pets and people suffer again as they did during that disaster. Animals were abandoned in homes to suffer until they died, or they were left behind because rescuers refused to allow pets to accompany individuals in their rescue. In the worst-case scenario, owners stayed behind and faced the same risks as their pets – some with fatal outcomes.



Pixaby

The Pets Evacuation and Transportation Standards (PETS) Act became law in October 2006, amending the Robert T. Stafford Disaster Relief and Emergency Assistance Act to require that state disaster preparedness and evacuation plans address the needs of people with pets and service animals. It also authorized the use of federal funds for pet-friendly emergency shelters when needed. States must adhere to these rules in order to receive funding from the Federal Emergency Management Agency.

It is not known (nor likely) that resources exist to provide evacuation and emergency sheltering for over 20,000 households, and over 10,000 dogs and cats.

To our knowledge, there have been no tabletop exercises simulating evacuation of people with their pets from the Fore River Basin⁸.

⁸ Confirmed in a personal communication with a Town of Weymouth Animal Control representative.

The State of Massachusetts Animal Rescue Teams (SMART) claims to “have numerous local animal response teams ready to serve the 351 cities and towns of Massachusetts in the event of a disaster or emergency. SMART helps to support organizations, agencies and individuals who are committed to responding to the needs of the animal population in disaster situations in the State of Massachusetts”.

The chapter that should prepare for disaster responses in the Fore River Basin Area, South Shore Disaster Animal Response Team (SSDART) appears to be defunct with an inactive website. The Animal Rescue League of Boston previously employed a technical rescue team with animal evacuation equipment. That team has since been disbanded and the evacuation equipment donated to the Animal Control Department of New Bedford, MA. The capacity of a typical animal evacuation trailer is approximately 40 animals. For argument’s sake – if the actual number of pets is 50% of the current estimate, and if animals could be doubled up for transport, it would still take 77 trailer trips to move pets out of the evacuation zone. If 80% of evacuees could flee with animals in their own vehicles, there would still be in excess of one thousand dogs and cats to evacuate with their families.

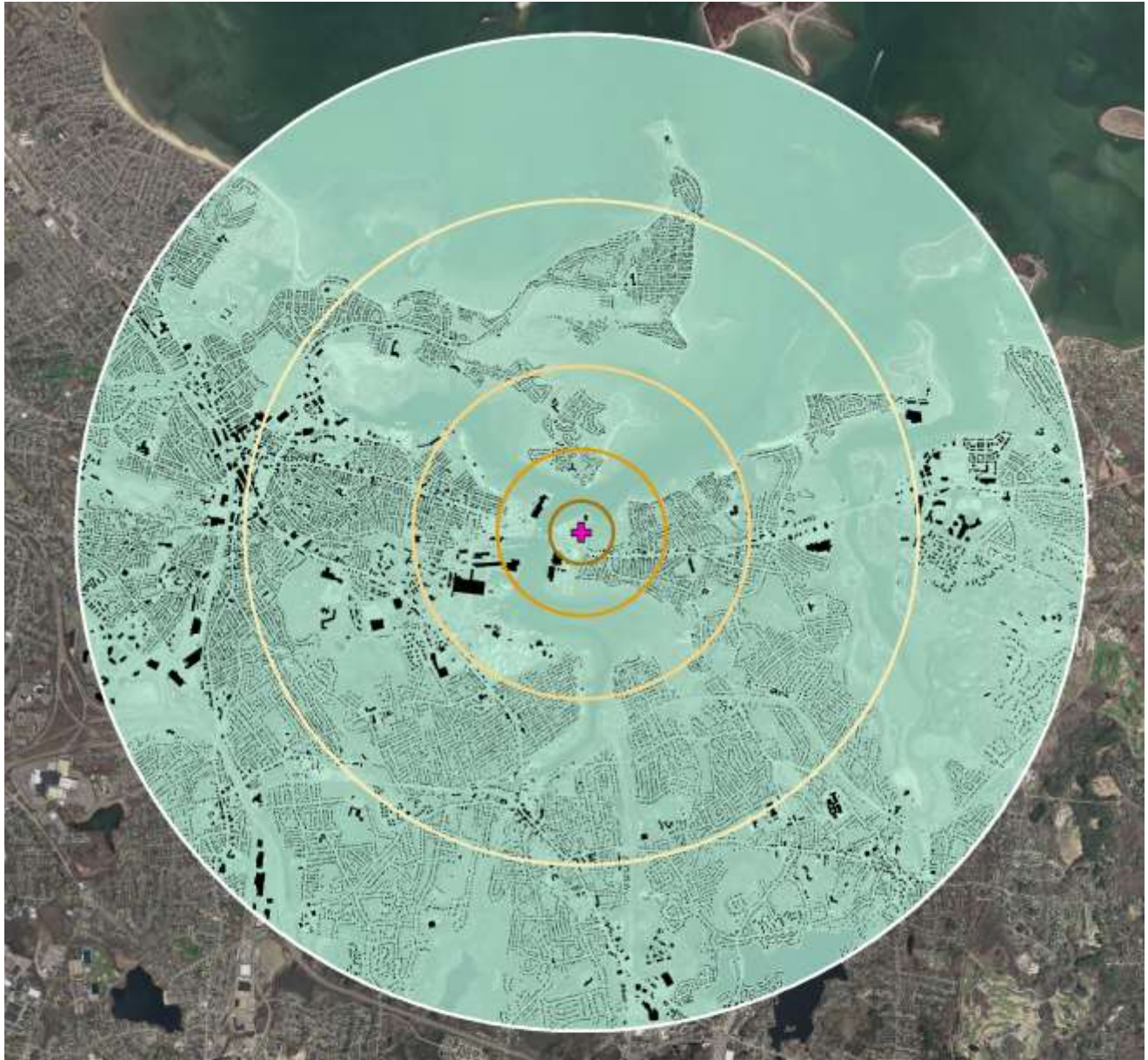
CONCLUSION

The placement of a methane gas compressor station in the densely populated Fore River Basin is an ill-advised proposal, and one that imperils the safety & health of countless vulnerable individuals - human and non-human. The permitting of a project guaranteed to contribute additional pollutants and a catastrophic explosion risk upon previously determined Environmental Justice Zones is beyond comprehension.








This proposal promises to increase the burden of industrial pollution on an already overburdened population and recklessly disregards the lives and welfare of people, their pets and service animals, and wildlife. For these reasons, it is our responsibility to unequivocally oppose the compressor station at this site, and we urge the revocation of the air permit. Every measure must be taken to stop this irresponsible methane gas compressor station from going into the Fore River Basin.

Special thanks to GBPSR & Visualizing Pipeline Impacts | @PipelineImpacts | Stephen Metts. The full GIS analysis is available upon request.





Weymouth Compressor Proposal | Proximity Distances

-  Project Emission Point
-  Building | Structure Footprints
-  3 Mile Proximity
-  2 Mile Proximity
-  1 Mile Proximity
-  .5 Mile Proximity
-  1000 Foot Proximity

