

Oral Testimony of Bibianna Dussling, Middletown Coalition for Community Safety
Before the House and Senate Veterans Affairs and Emergency Preparedness Committees
16 November 2016

Good morning Chairman Barrar, Representative Sainato and all members in attendance. My name is Bibianna Dussling. I am a resident of Middletown Township in Delaware County, parent of three, and a Veteran Naval Officer. I served nine years as a helicopter pilot where my main "ground jobs" were in Operations, Aviation Safety, and Emergency Preparedness. I served in these roles and as an aircraft commander on two deployments in the Persian Gulf, and during evacuation and humanitarian relief efforts following both the 2005 Indonesian Tsunami and Hurricane Katrina. I coordinated emergency response plans for one base, covering a wide range of potential threats from natural disasters to hazardous materials leaks. I know that planning for anything less than a worst case scenario puts lives at risk.

One way to analyze the degree of any risk is by assessing "severity times likelihood." In aviation, this approach has produced remarkable improvements in safety. If the potential severity of a threat is high, but the likelihood is extremely low, we often conclude that risk is acceptable. Likewise, if the potential severity is very low, a hazard that has a high likelihood of occurring may be tolerable. This can also be applied to pipelines. In Delaware County we are particularly concerned with the combination of extremely high severity and unacceptably high likelihood associated with the existing Mariner East 1, and proposed Mariner East 2 pipelines.

In regards to severity, the 20" Mariner East 2 (ME2) pipeline would transport Natural Gas Liquids ethane, propane and butane under extremely high pressure: up to 1,440 pounds per square inch. If leaked, these extremely flammable and explosive materials will form an odorless, colorless and heavier-than-air gas cloud, capable of causing rapid asphyxiation prior to ignition. A large-scale leak from this proposed ME2 pipeline would result in death and severe injuries from burns, shrapnel, brain trauma, and asphyxiation for those within a blast or impact zone. When the ATEX ethane pipeline, equivalent to the proposed ME2, failed near Follansbee, West Virginia in January 2015, 13 months after it was placed in service, damage and thermal impacts extended to 2,000 feet. In Delaware County, where the population density averages 3,000 people per square mile, thousands of people, homes, businesses, schools and other vulnerable sites exist within such an impact zone.

For example, Glenwood Elementary School, where my daughter attends first grade, is well within the blast zone demonstrated in the Follansbee accident. At Glenwood Elementary, and at many other schools across our Commonwealth, there may be no opportunity for evacuation if a leak occurs nearby. And yet, evacuation is the only option. With 445 children and 60 staff in harm's way at this single school, a leak similar to Follansbee would be a catastrophic event.

With the potential for such a catastrophic event to impact vulnerable populations, we must consider the likelihood of a leak occurring. Unfortunately, pipelines leak. The frequency is well documented in data by the federal government. Sunoco Pipeline, the operator of ME1 and proposed ME2 has had 279 reported hazardous liquid leaks since 2006, averaging over 2 per month, for the past ten years. The rate of large hazardous liquid leaks per pipeline mile has been steadily increasing, reaching an all-time high in 2015. Just last month, a Sunoco pipeline leaked 55,000 gallons of gasoline into the Susquehanna River. Last week, a pipeline in Cambria County leaked propane, forcing a 5-mile evacuation. In April 2016, a gas pipeline explosion in Westmorland County critically injured a man in a house 800 feet away.

Fortunately most pipeline accidents to date have occurred in sparsely populated areas. When similar pipelines are proposed to be constructed in densely populated "high consequence"

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areas, we must consider how a leak or explosion could impact public safety, and to what extent we are (or are not) prepared for such an event.

No regulator has reviewed the Mariner pipeline route or siting with respect to public safety due to this pipeline's misclassification as a liquids line. Nor has any specific emergency planning been required for our area. Sunoco's generic protocol for a known or suspected leak is to evacuate, upwind and on foot, to a distance of at least one-half mile. Such a plan is both impractical and implausible. First, how do we know a leak has occurred? We cannot smell nor see the combustible gas. If Sunoco is able to detect the leak, how quickly are first responders notified? How are schools and residents in their homes rapidly notified of the need to immediately evacuate without use of an ignition source? The proximity of my daughter's school to the proposed pipeline means that, with a wind of just 2 miles per hour, the gas would arrive at the school building in less than five minutes. Do we have a notification system that can provide my child and her classmates the necessary time to evacuate? We do not. In fact, the most likely notification of a leak would be the resulting explosion, given the fact that something as ordinary as a cell phone or a light switch can serve as an ignition source.

Typical valve sites are 6 miles apart, and the volume of hazardous liquids within a 20-inch pipeline segment of that length is enormous—over 500,000 gallons. Even if a leak was detected immediately and the valves immediately closed, all of that material will escape, expanding into 20 million cubic feet of combustible gas carrying the energy equivalent of a small nuclear bomb. Because this gas is heavier than air, it will not dissipate as is lighter-than-air methane, the Natural Gas we are accustomed to in our homes. Instead, it will concentrate close to the ground, moving and expanding according to topography and wind direction, creating a "fire blanket" back to the pipeline if ignited. This is why rapid evacuation is so critical.

This is why a three mile radius evacuation zone was established in Unityville, Pennsylvania, where a methane pipeline failed in June 2015, and again last week in Alabama when a hazardous liquids pipeline ruptured and ignited. We are not prepared to evacuate a six mile diameter circle in densely populated Delaware or Chester County. An evacuation area of that size, in southeast Pennsylvania, could contain 80,000 people or more. It is not remotely feasible to notify and evacuate close to that many people on foot in the necessary short period of time.

The impracticality of evacuating a large number of residents means that hundreds, if not thousands of people, may be trapped within a blast or impact zone. First responders would establish a safety perimeter within which they could not enter, preventing immediate access to the most severely injured patients. Highly volatile liquids in their gaseous form rapidly displace oxygen in the blood, but people suffering from asphyxiation could be unable to access lifesaving care. For injured people who make it outside the safety perimeter, first responders would be challenged to adequately treat complex, traumatic life-threatening injuries. Medevac efforts to transport large numbers of casualties to area hospitals will be quickly overwhelmed. All of these challenges become particularly problematic when pediatric victims are involved.

I did not come to this issue of the pipeline due to my experience as a Naval Officer or as a result of my training in emergency preparedness. I came to this issue as a mother. I imagine my beautiful daughter, with her bright smile, in her first grade classroom near Sunoco's pipeline. And I try not to imagine what would happen if this pipeline leaked near her school. I try not to imagine her teacher's panic, knowing she has to get our children out, and quickly. I try not to

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imagine school personnel trying to keep young children calm, communicating the urgency of leaving the building, getting these children to actually follow multi-step directions. I try not to imagine them running. I won't allow myself to imagine the children who can't walk or run. Or the explosion. Because if the gas ignites, the overpressure from the blast and the resulting fireball would be lethal, with no hope of survival for those closest.

I am trained to compartmentalize, so that I can act in the event of an emergency. So this is where I turn my mom brain off, and my pilot brain on. What is the degree of this risk? What are the resources? How many helicopters are available to evacuate pediatric patients? How many trauma centers with helopads? Is timely evacuation feasible? Is there any possible way to mitigate the risks? If the answer is yes, why hasn't a plan been put in place for Mariner East 1, which already runs within just a few hundred feet of several schools? And if the answer is no, why are we considering the construction of much larger highly volatile liquids pipelines in densely populated communities?

This is why I am here today. Military pilots are trained to assess risks and mitigate them in advance. Our community has assessed the likelihood and severity of a leak from this proposed pipeline, and discovered enormous risk. We need you to take a step back. Look at the bigger picture. Consider if there an alternative approach to responsibly utilize our generous natural resources, create jobs, boost our economy while truly safeguarding the public. Given our abundant resources, Pennsylvania could be the model for the rest of the country with a responsible energy infrastructure addressing all those concerns.

At a minimum, we need your legislative action to address the regulatory gaps around pipeline siting, as well as the misclassification of this particular type of NGL pipeline as a liquids line. We need your legislative action to require the development of credible notification, evacuation, and emergency preparedness procedures. I cannot in good conscience send my child to school nor remain in our community without such issues resolved, any more than I could embark upon a mission with unacceptable risks to my aircrew. If I could not mitigate such risks to an acceptable level, it was my duty to cancel the mission. That was my obligation as an aircraft commander responsible for the lives of my aircrew.

Similarly, the primary function of our government is to provide for public safety. We the people institute governments in order to secure our rights to life, liberty, and the pursuit of happiness. This proposed pipeline poses an unacceptable level of risk to our lives, our children's' lives, and the lives of thousands of Pennsylvanians. We look to you now to uphold your oath, to recognize this risk, to mitigate it in advance with appropriate legislation and make every effort to protect your constituents. Thank you very much.