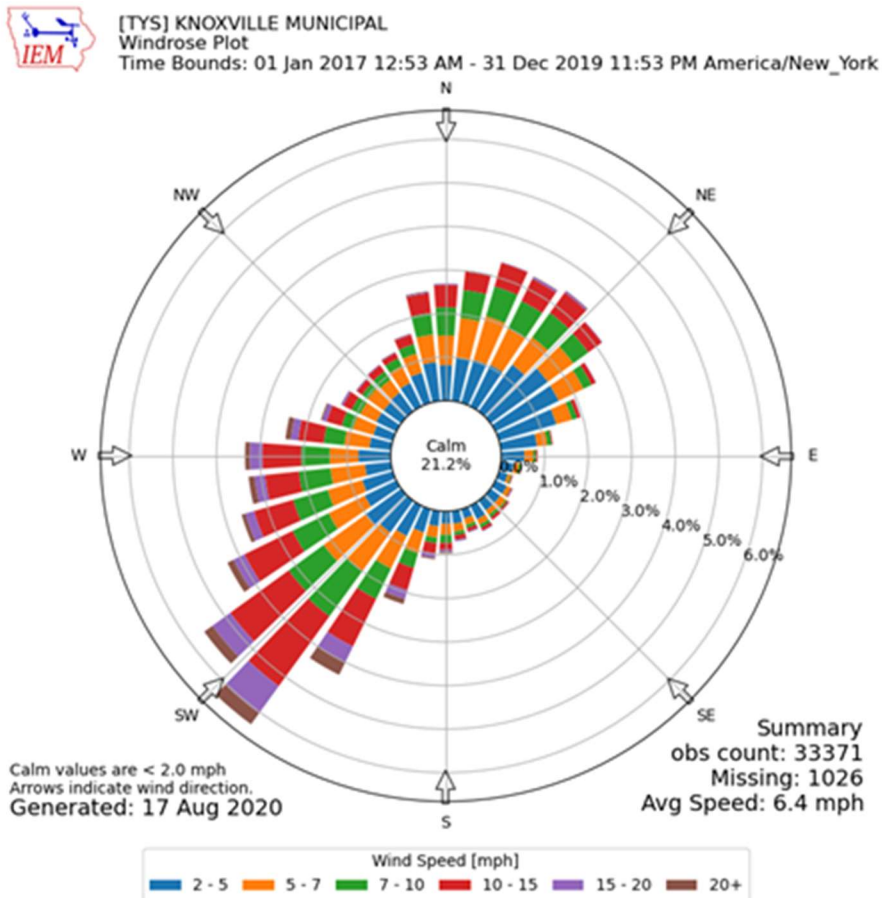


## Advocacy – September 2020

In the July HOA Voice I included an article about air quality in Loudon and Monroe counties. It included data from the EPA Toxic Release Inventory (TRI) regarding releases from industries who operate in our area. When compared to other parts of the U.S., it looks surprisingly bad. Here is a link to that article: <https://www.hoatellivillage.com/2020/07/26/advocacy-july-2020-air-quality/>

I ended the July article with several questions which I wanted to get answers about from TDEC (TN Department of Environment and Conservation). The purpose of this article is to report back some of what I've been able to learn since then.

1. Tellico Village is located close to several manufacturing plants. Do you have any information on prevailing wind direction? Also, what is the dispersion pattern once this stuff is released?  
The chart below is a "wind rose", which shows typical wind speeds in our area (3-year average for 2017-2019) as measured at the airport (McGee Tyson). Typically wind moves SW to NE up and down the TN valley. The average windspeed is 6.4 mph. Both the Loudon and Monroe portions of Tellico Village are east or south of the industrial sites, so are normally not directly impacted by these industrial releases.



2. According to the TRI report, most of the material released is Carbon Disulfide, Hydrogen Sulfide, and Styrene. What happens when these materials are released – do they stay suspended in the atmosphere or head back to ground quickly? We understand that TDEC tests for Ozone and Particulate Matter (PM). Does TDEC test for any other substance in our area? TDEC does not monitor for the specific chemicals (e.g. Carbon Disulfide, Hydrogen Sulfide, and Styrene) that show up in the TRI. The Air Pollution Control group in TDEC is focused on items in the National Ambient Air Quality Standards (NAAQS), which does not include these chemicals. Particulate Matter is continuously monitored in Loudon County. Ozone is monitored during the March – October Ozone season. Loudon County is in attainment for these pollutants at this time. The measurement station is close to Loudon Middle School. According to TDEC:
- The lifetime of carbon disulfide in the atmosphere is estimated to be 12 days.
  - Hydrogen sulfide lifetimes in the air range from approximately 1 day in the summer to 42 days in the winter
  - Styrene photodegrades in the atmosphere, with a half-life ranging between 7 and 16 hours.
  - In general, meteorological factors can play a role in the transport of emissions so conditions can change depending on current weather patterns, wind direction, and season.
3. Are any of these chemicals part of the makeup of acid rain in our area? How does this impact the forests and waterways of East TN? For this question I turned to the team at WATeR (Watershed Association of Tellico Reservoir) and received a very useful response. According to WATeR, the waters in our area have a basic pH of 7.1 to 7.8 due to the limestone underlying the entire area (which is not acidic). The air quality in the valley and in the Great Smokey Mountains National Park has improved over the past twenty years. Acid rain was a huge issue in the Smokies back in the 1990's, but has decreased due to the closing of coal-fired power plants and coal-fired private boilers. A couple of years ago both Tate & Lyle and Viskase in Loudon converted their boilers from coal to natural gas.
4. Are there any ongoing discussions with the various manufacturers to introduce additional pollution controls to reduce their emissions output? TDEC did not indicate any ongoing discussions with local industry to reduce their emissions. Last week we received notice from TDEC that Kimberly-Clark in Loudon has applied to change their permit, increasing VOC (Volatile Organic Compounds) released in the air by up to 2 tons per year.
5. Where can we see the results of the 2003-2009 air quality study in Loudon county? Attached is the completed study, dated October 30, 2009:



TDEC

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My conclusion from reading the study is that I wish they had studied more chemicals than they did. They skipped over all of the main releases in our area. It's great news that our area is now in attainment for Ozone and Particulate matter, but what about the rest of the stuff that is being released?

Also, I came across this study completed in 2006 for Loudon county by the Agency for Toxic Substances and Disease Registry (ATSDR), which gives some useful insights:



ATSDR Public  
Health Assessment

A further comment I received from TDEC related to the TCI itself. The Air Pollution Control group in TDEC typically does not deal with the Toxic Release Inventory (TRI) datasets because they are submitted directly by the regulated entities to EPA. TDEC feels that the data can be inaccurate because EPA can take enforcement action against them for under reporting a TRI chemical. Therefore, entities actually tend to over report to avoid any EPA enforcement action. TDEC thinks that the National Emission Inventory (NEI) is a more detailed estimate of air emissions that will include criteria pollutants and hazardous air pollutants. The most recent certified 2017 NEI dataset was released in May 2020 and can be found at:

<https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei>

As a result of my looking at this subject, I've come to a few conclusions:

1. TDEC are governmental bureaucrats who follow the rules – yet they are approachable and willing to respond to direct questions. Just don't expect them to volunteer any more than they need to!
2. TDEC does not look at the overall current emissions of an area – they just focus on individual point sources and the changes involved with that particular permit.
3. For air quality TDEC only monitors those chemicals that are listed in the National Ambient Air Quality Standards (NAAQS), which does not include any of the primary chemicals being reported by our local manufacturers. Chemicals such as Carbon Disulfide, Hydrogen Sulfide, and Styrene are not measured beyond the point of emission and we don't really know much about how much remains in our local community.
4. Two air quality studies were completed for Loudon County – one in 2006 and another in 2009. Neither study focused on the primary chemicals being reported by our local manufacturers.
5. In TN business comes first, environmental quality is secondary. As a result, challenges to environmental permits are only allowed within a 30-day notice period and it must be very specific as to the issues. It is very difficult for someone to receive the notice, do the research needed, and then launch a challenge within the allowed time period. What the prior group did was have a lawyer and an environmental engineer on their board, plus outside legal counsel on tap when they were needed. To be successful, we would probably have to put together a similar approach. A few residents yelling at TDEC won't do much.

While our ability to see each other at HOA Social gatherings is currently limited, please feel free to send me a note if you have any issues or concerns that I might be able to help with.

Thank you. I look forward to hearing from you.

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