



Welcome to Lehigh Valley Breathes February 2024 Update!

Following our monitor installation blitz in late January, we have been using the time in February to evaluate some of the initial data from those newly installed monitors in order to determine where the last batch need to be positioned. We're especially focused on whether there are areas that we've missed for input. Those final monitors will be installed in the coming month. Also, we'll keep a couple on the shelf to serve as back-up if we run into monitor failure.

We ran a couple comparisons with the recently installed monitors, just looking at PM2.5 levels between the dates of 1/29/24 – 2/15/24. We found that the highest levels of PM2.5 were at locations in the urban corridor that are proximate to both warehouses and highways (9.7 and 7.8 micrograms per cubic meter - $\mu\text{g}/\text{m}^3$). In contrast, our urban corridor location that is near a warehouse but more distant from a highway measured an average of only 7.1 $\mu\text{g}/\text{m}^3$, and our background urban corridor location that is near neither warehouses nor highway traffic measured only 6.6 $\mu\text{g}/\text{m}^3$ during this same period.

In additional comparisons of data from the recently installed monitors, just looking at PM2.5 levels between the dates of 1/29/24 – 2/15/24, we found that our monitor sited in a rural area with high truck traffic measured average PM2.5 levels of 7.5 $\mu\text{g}/\text{m}^3$, which is comparable (actually higher than) measurements from an urban corridor area near warehouses (7.1 $\mu\text{g}/\text{m}^3$) and our urban background site that is located in a park, away from traffic and warehouses (6.6 $\mu\text{g}/\text{m}^3$).

It's important to remember that these are very preliminary readings over a very short period of time, just slightly more than 2 weeks. These calculations are mostly done to assess whether we are seeing data that aligns with what we might expect to see if truck traffic is having a meaningful localized impact on air quality. If you would like to see more information on the various categories of location that the plan design utilizes, they are all listed in the October LVBreathes update.

The most dramatic difference to date has come from the readings at the Leaser Lake site, our most rural location. That monitor has been in place for a much longer period of time. The average PM2.5 at Leaser Lake between 9/30/23 and 1/24/24 was 3.6 $\mu\text{g}/\text{m}^3$, a reading even lower than the World Health Organization recommended annual average concentration of 5 $\mu\text{g}/\text{m}^3$. Other monitors that have been in place for the same period of time have much higher averages as shown below:

LehighIP1 – 8.3 $\mu\text{g}/\text{m}^3$ – urban corridor, non-proximate to highway, low traffic
CharterArtsSS – 9.6 $\mu\text{g}/\text{m}^3$ – urban corridor, non-proximate to highway, high traffic
Hellertown-BIP-78 – 9.3 $\mu\text{g}/\text{m}^3$ – urban corridor, proximate to warehouse
LowerMtBethelSB – 7.6 $\mu\text{g}/\text{m}^3$ - rural, proximate to road, high traffic

If you want to see where these monitors are located, you can find them on the Shiny App on this website. The only one not on the Shiny App is the Leaser Lake installation because there is no WiFi access at the site. As we've explained before, monitors located in areas without WiFi access record their data on SD cards which are then used to manually transfer the readings to the database. If you would like to Google the Leaser Lake location, you can use the address 7600 Ontelaunee Road, New Tripoli 18066.

Just a reminder that even the longer term data is still only preliminary. The project runs for a year so that we can collect data from all four seasons and as many different weather patterns as possible. Until we've completed that full cycle and had time to analyze the entire body of data, we will not be reporting any conclusions or recommendations. These interim readings help us to confirm that we are placing the monitors in enough of a variety of locations to collect data relevant to the project objectives.

One other topic we'd like to include in this update is the proliferation of various climate-related projects and how the projects relate to one another.

Recently the Lehigh Valley Planning Commission released a draft of their Priority Climate Action Plan which is available [here](#). This is a region-wide plan produced with a \$1 million Climate Pollution Reduction Grant, funded through the Inflation Reduction Act (IRA). In the words of the LVPC "the Plan seeks to reduce emissions from our Transportation Sector by nearly 300,000 Metric Tons of Carbon Equivalent (CO₂e) by 2030, and substantially more by 2050, by creating priority bicycle and pedestrian corridors, promoting alternative fuels vehicles, installing intelligent transportation systems technology and creating green infrastructure along our busiest highways." Obviously this is a plan for a much more expansive project at a cost that is 10 times that of Lehigh Valley Breathes. It looks primarily at infrastructure improvements that can substantially reduce emissions from the transportation sector.

In comparison, Lehigh Valley Breathes is dealing with only one particularly dangerous pollutant, PM 2.5, and is focused on obtaining highly location-specific data that can serve as a basis for new policy recommendations to reduce that pollutant. The data that Lehigh Valley Breathes collects will be made available to the LVPC for use in their much larger project if they request it.

Also this week there was a Route Zero press conference in Bethlehem highlighting the urgency for the EPA and the Biden Administration to improve the clean trucks standards and achieve the strongest possible pollution safeguards for heavy duty trucks, model years 2027 through 2032. This rule needs to be enacted by the EPA by this March to pave the way for a quick transition to more zero emission vehicles.

All of these projects and programs complement each other and work together through federal government funding to help us move forward to a cleaner, more breathable Lehigh Valley. There will undoubtedly be more over the next few years. They will all help us to breathe easy!