Local community groups have become more involved in assessing air pollution impacts in recent years, including the use of citizen monitoring projects. As these projects become more widespread, the Delaware DNREC Division of Air Quality (DAQ) has recognized a need to respond to local community concerns with additional monitoring that can represent more robust scientific data without expanding the existing fixed ambient monitoring network.

Over two years ago the Division of Air Quality had a vision to develop a monitoring tool that would enable DAQ to respond to community air quality concerns. The DAQ in cooperation with Delaware Health and Social Services (DHSS) repurposed a mobile lab that was no longer needed. This was the birth of the Moveable Monitoring Platform (MMP).

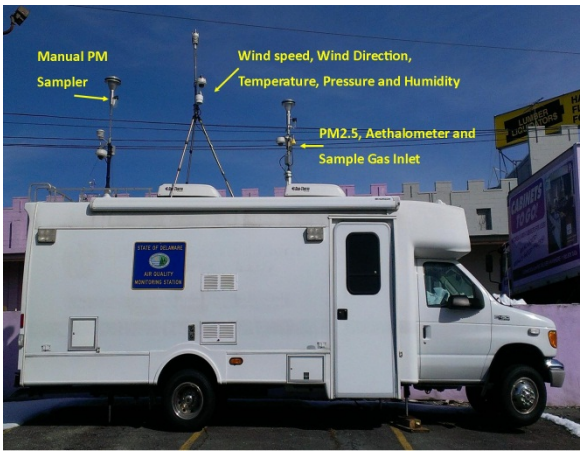
The initial task was to determine what measurements were to be collected and what modifications to the van were financially feasible. Since there was an ongoing local community project, the Claymont Dust Study, this offered an opportunity for the initial test for the MMP and to compare the community's data with the MMP's. The MMP was then equipped with instruments to measure particle concentrations.

Before Transformation

After Instrument Installation

A Data Acquisition System used in the Delaware ambient monitoring network was installed for real-time retrieval of 1 minute, 5 minute, and hourly average data from the continuous monitors. A wireless internet connection allows remote access to data and the security cameras mounted outside the vehicle.

The modification also included the installation of Federal Reference Method (FRM) and FederaFEM continuous monitors for multiple criteria pollutants, along with wind speed/wind direction. A manual PM monitor is also installed to allow the measurement of either PM 10, PM 2.5, TSP or Heavy Metals. Other monitors can be switched out or added depending on the needs of a specific project.



The MMP on site in Claymont

DAQ was contacted by EPA Region III regarding a pilot study of a new air toxic collection method. This method is designed to collect a 2 week sample in a vacuum canister and a 2 week sample using a passive sample technique. The MMP was an ideal platform for this study.

The MMP has completed the initial project monitoring for approximately 4 months in Claymont. Sufficient valid data was generated to estimate local concentrations of several pollutants, and the data can be compared with fixed monitoring sites as well as for evaluating the impact of the local point source.

Several other projects are already planned for the MMP, including monitoring for SO2, PM2.5, and BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes) compounds in a community impacted by an industrial complex that includes an oil refinery, and possible before/after monitoring in another community where a new power plant may be constructed.

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