

Harriet Tubman Middle School
Environmental Technical Advisory Committee

Meeting Minutes

April 25, 2018

4:00 – 6:00 pm

Attendees

Director Paul Anthony, Anthony Barnack, Bethany Barnes, Brett Borgeson, Dr. John Burnham, Dr. Raul Cal, Joe Crelier, Dr. Jae Douglas, Harry Esteve, Daniel Forbes, Dr. Elliott Gall, Dr. Linda George, Virginia LaForte, Aurelie Laguerre, Dr. William Lambert, Director Rita Moore, Tom Roick, Director Mike Rosen, Steve Simonson and Jerry Vincent.

Agenda & Minutes

Introduce Dr. Bill Lambert

Dr. Burnham introduced Dr. Lambert. Dr. Lambert is an Associate Professor of Environmental Epidemiology at Oregon Health and Science University. He has authored or coauthored over 60 peer review papers in the epidemiological literature. He was selected and served as Chair of the Oregon Department of Environmental Quality (DEQ) Air Toxics Science Advisory Committee. This committee reviewed the scientific and regulatory literature to establish health benchmark concentrations in the state of Oregon for over 50 air toxics. These ambient benchmark concentrations (ABCs) included toxins from mobile sources. Dr. Lambert has agreed to work for PPS as a private contractor to provide the health risk assessments for air toxics measured in outdoor and indoor air at Harriet Tubman Middle School (HTMS).

March/April Outdoor Air Monitoring Results

Dr. Gall introduced the April 18, 2018 monitoring report entitled Indoor and Outdoor Air Quality at Harriet Tubman School and the Design of Mitigation Measures: Phase I Report. He began with the monitoring process and equipment used on the SW corner of HTMS, monitoring for particulates and volatile organic compounds (VOC). Dr. George discussed HTMS logistics relative to industrial buildings and the history of EPA and DEQ air toxics monitoring at the site, including a list of pollutants that were measured.

PSU monitoring was conducted in March/April. Wind was primarily from the south and southeast. Polar plots comparing HTMS versus urban background clearly indicate that HTMS is heavily influenced by the I-5 freeway. Highest contaminant levels appear in the morning hours.

The report provides a table of direct comparison to urban background. Dr. George briefly discussed the limitations of the monitoring.

Dr. Gall presented the monitoring results for the SW corner closest to I-5 and the east side of the building along Flint Street (see report). Finding #1: There is a gradient of traffic-related pollutants that decreases as a function of distance away from I-5 N, approaching background levels about 300-400 feet from the freeway. Finding #2: Air sampled on the SW side (freeway side) of Tubman Middle School is heavily impacted by freeway emissions. Air sampled on the Flint Ave. side is also impacted by freeway emissions but at lesser extent. This gradient should be taken into consideration when locating the intake vent for the new HVAC system. Finding #3: Many air pollutants measured at Tubman are elevated compared to Portland urban background site (DEQ SW Lafayette).

Recommendation #1: Student outdoor activities be limited at HTMS, especially during high traffic periods.

Recommendation #2: The HVAC system be designed such that outdoor ventilation air intakes are sited as far from I-5 as possible.

Air cleaning systems at Tubman should include pre-filter, high MERV or HEPA filter and sorbent media. MERV 16 combined with 24" activated carbon provide the capability to remove up to 95% of particulates and many organic air toxins. Finding #4: Air pollutants of concern in HVAC outdoor ventilation air can be reduced to levels substantially below urban background and levels of health concern.

Recommendation #3: The HVAC system be designed to include at least MERV 16 filtration and dedicated sorbent beds capable of maintaining recommended media-air contact times for gas-phase pollutant removal.

Infiltration of outdoor air can be a second pathway for air to enter a building. This is untreated outdoor air and is controlled by the pressure differential between the air pressure inside the building and the outside air pressure. This untreated air can be controlled by weatherizing the building and maintaining a slight positive pressure inside the building.

Question: Anthony Barnack – Cost of weatherization and positive pressure.

Answer: Steve Simonson – Positive pressure simple and inexpensive.

Recommendation #4: The building be evaluated/commissioned for HVAC balancing and building airtightness to minimize infiltration, especially along those portions of the building facing I-5.

Recommendation #5: The efficacy of the air cleaning system be monitored periodically for breakthrough of gas phase compounds and confirmation of removal efficiency of particulate matter as part of an air quality management plan for HTMS.

There was a brief presentation on a literature search regarding reducing the contaminant levels in outdoor air. Finding #5: A review of the published literature suggests that , designed properly, incorporating vegetation and/or sound barriers near traffic exposed areas can reduce concentration of air pollutants 15-60%.

Dr. Cal presented an update of the status of development of models of the topography and HTMS. Digital models have been created and work is proceeding on the development of physical models. This modeling includes creating models that include pre-ODOT and post-ODOT widening of the north-bound freeway.

Implications of Outdoor Air Monitoring for Health Risk

Dr. Lambert's presentation was entitled Environmental Technical Advisory Committee Harriet Tubman Middle School. He presented his responsibilities regarding the Tubman project. They include conducting a health risk assessment post-occupancy using the indoor/outdoor pollution measurements against standards and published literature. He will also develop a risk communication plan which includes an evaluation of outdoor air pollution measurements and qualitative assessment of potential health risks outdoors for each air pollutant and creation of an indoor air quality maintenance plan. He covered the activities and products for the health risk assessment and risk communication plan.

Question: Visitor Dan Forbes – Where is the spring epidemiology assessment? Who will make the go-no-go decision?

Answer: Several individuals responded to this question. Considerable time was spent on this question. Conclusion was that there is only 6 weeks of outdoor data available from March/April monitoring. We will also conduct outdoor and indoor monitoring in the Fall post-occupancy to assess potential health risks for students and staff.

Dr. Lambert then discussed student time-activity patterns by providing a typical PPS middle school schedule. Consideration will be given to outdoor time for recess and PE, athletics, use of outdoor basketball court and the time spent in front of school at beginning and end of day. These issues can be addressed through administrative controls.

Building/Construction Status

Steve Simonson provided a brief update on construction status. Roofing is starting on May 1. Second week of May plumbers start. New HVAC unit will be placed on the roof at the NW corner of the building.

Question: Dr. Gall – Will one HVAC intake serve the entire building?

Answer: Steve – Yes. Ideally it would be best if the HVAC air supply was located on the Flint side of the building, but this would require a major structural upgrade of the building and design reviews. Our plan is to locate the intake on the rooftop of the north end of the building,

a location which is offset some additional distance from the edge of I-5, and away from the prevailing winds from the south.

Planning for Fall Indoor/Outdoor Monitoring

Dr. Gall discussed preliminary planning for Phase II monitoring in the fall. Current plan is the three month period August 1 – November 1. PSU is proposing to split this into two six week periods. Monitoring will include evaluation of HVAC contaminant removal efficiency. Sampling locations will also include mapping of indoor and outdoor air quality, indoor air balancing and the calculation of leakage.

Next Meeting

Dr. Burnham proposed that we move the next meeting to July 17 to provide more accurate updates on construction and fall monitoring plans. All members agreed.