



MEMORANDUM

January 18, 2013

To: Amy Lindsey, Montgomery County Planning
From: Henry S. Cole, Ph.D., Expert Consultant to the Stop Costco Gas Coalition

Re: Costco's Proposed Mega-gas station: Additional information needed for a valid air assessment of the facility's impact on air quality

CC: Renee Kamen, Montgomery Co. Planning

I am writing this memo is to recommend that the Montgomery County Planning Board take several measures which I believe will greatly enhance the Board's ability to make a prudent decision on Costco's proposal for a mega-gas station. This size of the proposed gas station is unprecedented in terms of annual sales (12 million gallons) and associated traffic and would be located in close proximity to homes, a school for severely ill and disabled students, and a recreational facility.

My recommendations are based on my review of Costco's modeling studies, meetings and detailed information exchanges with Costco's air modeling consultants (Sullivan Environmental Consulting [Sullivan]), several inspections of the site and the surrounding area and a meeting with the Director and air quality expert from the Maryland Department of the Environment. My judgments also stem from more than 35 years of professional experience in the fields of atmospheric sciences, air pollution meteorology, and environmental impact assessment; I served as a senior scientist and section chief with EPA's Office of Air Quality Planning and Standards (OAQPS) with lead responsibilities on projects involving air quality modeling.

My previous submittal to the planning staff (January 15, 2013) concluded that Costco's air quality and risk assessments are likely to underestimate concentrations adjoining the proposed source due to the omission of important pollutants and sources and the use of background values from sites that are not representative of the Westfield Mall area. Even so, the Sullivan predictions for annual PM_{2.5} concentrations at all receptors in the area will exceed EPA's revised standard of 12 ug/m³ exposing

nearby residents and the chronically disabled students of Stephen Knolls School to unhealthy contaminant levels.

1. Given these findings it is critical that the Board take several steps to obtain the information necessary to conduct a comprehensive public health study of the facility. Specifically I recommend the following prior to the Board's rendering a decision on the site.
2. Require Costco to conduct ambient air monitoring for a 12-month period including short and long-term concentrations for criteria pollutants and EPA designated Hazardous Air Pollutants (HAPs). (Costco has not provided any onsite measurements to date). Such measurements are needed in order obtain site-specific background concentrations to which the gas station and associated traffic will be added. The 12-month record should enable the Board to better assess the impact of (a) traffic associated with the new Costco Warehouse store and (b) peak traffic periods (e.g. holiday and pre-school peak shopping periods).
3. Require Costco to conduct a micrometeorological study to study air flow patterns during periods most likely to induce downslope drainage toward homes, townhouses and the Stephen Knolls School. Inversions during such periods limit dispersion resulting in high concentrations.
4. Require Costco to conduct a study of traffic on the Ring Road, Mall parking lots and area roadways and intersections to include average and peak conditions (including heavy shopping periods) after the Costco Warehouse becomes operational.
5. Require Costco to conduct a new air quality modeling study to include: (a) the results of the studies outlined in 2, 3 and 4; (b) to use EPA's recommended model for motor vehicle emissions known as MOVES (rather than the obsolete Mobile 6 model used in Sullivan's current modeling; and (c) include truck and auto pollutants emitted from all parking lots and loading docks (currently excluded).
6. Require Costco to conduct revised cancer risk assessment using the updated modeling. However, include all potential carcinogens including those contained in those associated with gasoline and diesel engines (emissions are currently excluded from the analysis).
7. Appoint and fund a panel of highly qualified, independent health experts including those from academia and government agencies such as NEIH to conduct a study and provide a report on the potential health effects of the proposed gas station on exposed populations. This should include a literature review on the effects of gas stations and vehicular traffic emissions. This panel can make recommendations on the advisability of the gas station, its location, size, etc. The panel members should be free of conflict of interest.

I realize that that this represents a "tall order," however I believe it to be prudent and necessary given the deficiencies in the current assessment, the paucity of information on the impact of so large a gas station, the hazardous nature of emissions, the proximity of residents and students with serious illness and disabilities. Moreover a proposal with such far reaching public health implications is unprecedented for the County. I would also suggest that the applicant, which may

propose additional mega-stations in Montgomery County, has sufficient resources to provide funding for this effort.

Because there are few studies on mega gas stations, this effort should help the Board, Montgomery County, the State of Maryland, and other jurisdictions evaluate proposals for mega-gas stations in the future.

Thank, you for your consideration, please let me know if you have any questions. You can reach me at this email or at 301 780 7990.