

Kaarsberg March 5 Written Testimony on ZTA 26-01

My name is Tina Kaarsberg and my mailing address is Dickerson MD. This is my written testimony on Zoning Text Amendment (ZTA) 26-01, Commercial Uses – Data Center sponsored by Council President Fani-Gonzalez.

I live about 3 miles from downtown Dickerson next to Sugarloaf Mountain. In the warmer months, we usually only hear bird song in the morning with an occasional distant train (Diesel) from the Dickerson station or a large truck (Diesel) accelerating up Route 28 as it goes up the hill from Dickerson toward the data center site.

During the February 24 hearing residents of Montgomery County unanimously supported a moratorium on data center building in the county—to enable more study of the impacts. On February 25 Council President Fani-Gonzalez stated in an interview on WAMU such a moratorium was impractical because the Dickerson data center was too far along and therefore the operator could sue. I sincerely hope that the resident's verbal and written testimony empowers the Council to amend the ZTA as suggested and also seek specific remedies for some of the harms cited in the verbal and in this written testimony

There are many adverse impacts that the Dickerson data center will bring and most were well documented in the verbal testimony. I therefore will focus my remarks on the impact that will affect me and my family the most—the continuous noise of data center operation.

Scientists have known since the 1980s that certain levels and frequencies of noise can cause stress in humans. An increasing body of compelling research and conclusive findings confirms that exposure to **continuous** noise—such as the 24-7 noise from data centers—negatively affects the central nervous system (CNS). These harms include increased susceptibility to mental health conditions such as depression, anxiety, suicide, and behavioral problems in children and adolescents. Noise exposure stress, anxiety, and memory deficits are caused by sleep disturbance, sympathetic nervous system activation, and neurodegeneration

The noise levels for negative CNS impacts are much lower than the 55dB residential currently in the Montgomery County code that is cited in the ZTA. Chronic exposure above **50dB**, especially during nighttime, can disrupt sleep quality and lead to increased stress hormone levels. The World Health Organization (WHO) recommends that average nighttime noise not exceed **40 dB**. Because the decibel scale is logarithmic—this is at least an order of magnitude or 100% lower the current residential code..

Recommendations for ZTA amendments

1-Ban diesel (ie Combustion-Ignition) gensets as back up generators for data centers. Even with the very best sound proofing, it is not physically possible to reduce Diesel noise below 62 dB because it is based on a combustion-ignition cycle. While 62 dB which may sound close to the 55 dBA residential limit, dB is a log scale so it is actually an order of magnitude or 100%

louder. Banning diesel gen sets will save residents from having to individually prove that the noise from the data center exceeds 55 dBA (or a lower level I hope is set—see #3). While data center operators have in the past preferred lowest first cost diesel gen sets, given the greater likelihood of future outages in PJM, over time it will save them the cost and the logistics challenges of procuring diesel fuel which have been substantial for northern Virginia data centers. In addition, more recent studies show that long duration flow batteries—which are completely quiet and require no fuel— provide additional electricity reliability benefits over diesel gensets for AI-inference type data centers.

2- Require sound blocking for back-up generators and HVAC units external to the building. Ensure that the data center buildings themselves have state of the art sound proofing. Good thermal insulation is NOT however the same as good sound insulation because the latter also requires management of vibration and wave propagation. For example, a pinhole will have negligible impact on energy leakage, but could let a lot of sound out as acoustic sound waves can diffract through a small opening

3—Since data centers are more dangerous continuous noise sources, set a nighttime maximum of 40dB for residential properties adjacent to data centers to comply with WHO recommendations rather than citing the Montgomery County's Noise Control ordinance.