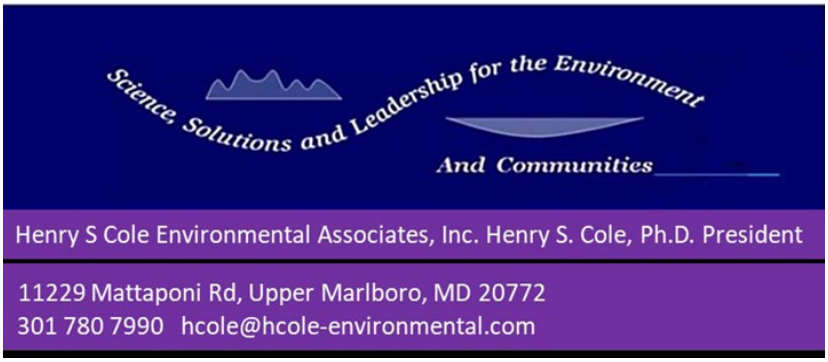

Danielle A. Spendiff
Chief, Regulatory & Customer Service Division
Federal Consistency Coordinator, Water & Science Administration
Maryland Department of the Environment

November 16, 2023

RE: Comments on BWRR's application for Tier 11 Water Quality Certification

Dear Division Chief Spendiff:

I am submitting these comments to urge the Maryland Department of the Environment (MDE) deny BWRR's application for a Tier II Water Quality Certification (WQC) for its proposed SCMaglev project.

Tier II, high quality waters: have an existing water quality that is significantly better than the minimum requirements, as specified in water quality standards; exceed the quality necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water. The Tier II waters for this permit are Beaverdam Creek I & II and Patuxent River I.

To approve the application, MDE must certify that the proposed SCMaglev project will not harm our state's waterways. These comments will show that BWRR's Maglev WQC application fails to meet this standard.

Qualifications: I am an atmospheric and environmental scientist with more than 40 years' experience analyzing the environmental impacts of pollutant sources, land development, and hazardous waste sites. I served as a senior scientist and section chief with the Environmental Protection Agency's Office of Air and Radiation. From 2021 to 2022 I served as a member of the Prince George's County Climate Action Commission which developed the County's Climate Action Plan (CAP). As a commissioner, I served as a member of the Mitigation Task Force.

Also my family operates a farm located within the Patuxent River watershed. I am currently a member of the Patuxent Riverkeeper Board of Directors and have worked on projects aimed at protecting the Patuxent— already deteriorated by pollution and inappropriate development.

Focus: My comments will focus on several crucial issues related to the land development and construction of the Maglev including:

- The adverse effects of land development with the removal of forests and tree canopies removal with an increase impermeable surfaces in watersheds and urban areas.

- The cumulative, reinforcing impacts of Maglev coupled with worsening climate change

- The lack of environmental justice (as evident by the project's enormously disproportionate damages, disruption and displacement of minority communities).

In addition, MDE should deny the application (a) for its adverse effects and it's inconsistency with national, state and local measures to protect the Patuxent Research Refuge and the Patuxent River, and wetlands and (b) for its location and impacts on the nearby Beltsville Agricultural Research Center (BARC) which has also already been selected as the site of the Bureau of Engraving Printing (BEP). Together BARC and the Patuxent Research Refuge are protected areas are known as "The Green Wedge," the largest expanse of contiguous deciduous forest remaining between Boston and Norfolk, Virginia which will become increasingly value as climate change accelerates.

Adverse effects of Maglev on developing on open lands and deforestation. The BWRR application and the Federal Railroad Administration's Environmental Impact Statement (EIS) acknowledge that the project's development will require deforestation and an increase impermeable surfaces along the Maglev corridor and in areas near ancillary structures with detrimental impacts. The increased paving of open land including wooded areas, fields and riparian buffers, also causes erosion and the transport of sediments and nutrients into streams, tributaries, rivers and wetlands.

As the BWRR application states, "All the Build Alternatives involve discharges of fill material into waters of the United States, including wetlands." Increased sediment and chemical loading of the affected waterways will add to current threats to their water quality, their ecosystems and biodiversity.
I would add that such impacts diminish the river's aesthetic and recreational value and commercial losses (e.g. watermen, waterfront attractions and businesses, etc.). The following excerpts are from the Federal Railways Administration EIS, Water Resources Section:

> All Build Alternatives would introduce new impervious surfaces to the landscape, result in clearing of vegetation, and have the potential for downstream impacts within the watershed, specifically to water quality. Examples of pollutant sources from the SCMAGLEV Project would include the runoff of chemicals and increased stormwater from SCMAGLEV operations at proposed facilities and viaduct, and sediment from soil erosion during construction. P. 16

> "The increased impervious surfaces can generate greater risk of stormwater runoff that can make its way to streams. The runoff can carry pollutants from SCMAGLEV operations and maintenance. Vehicles and wayside equipment, particularly maintenance activities, would use cleaners, lubricants, and other materials. Minor but continuous release of materials via water runoff into the environment over time would create the potential for long-term impacts to water quality." P. 17

Exhibit C of the application contains Section 4.10 of the Federal Railroad Administration's Environmental Impact Statement which addresses the preferred location of Maglev's terminus, the Cherry Hill Station.

> "The Cherry Hill Station would have the greatest increase in impervious surface at 74 acres due to its above-ground location. Of the 74 acres of new impervious surface, approximately 30 acres are associated with a long-term construction laydown area, which is currently partially vegetated and adjacent to the Middle Branch of the Patapsco River. This location currently functions as an open space providing a buffer between adjacent commercial/industrial and residential areas and the tidal waters. The Cherry Hill Station is located close to waterways and within the Critical Area and therefore has a greater likelihood of impacting water quality through pollutant runoff." [1]

The same section briefly describes steps to minimize the impacts of stormwater, erosion and prevent sedimentation and the drainage of potential hazardous substances from the laydown area into the waterway. However, the document provides no assurances. It glaringly omits any acknowledgement that the climate change-related increase in extreme rainfall events and rising tidal levels will multiply the impacts of impervious surfaces and the effectiveness of mitigation measures.

Preservation of nature's free assets: Prince George's County Climate Action Plan (CAP) states:

> "The To become resilient to coming climate impacts, Prince George's County must make a transformational shift in how we value natural resources. Our county's farmland and natural resource areas have long been undervalued – considered secondary to the short-term gains offered by residential and commercial development. But with every acre of forest or farmland lost to development, we lose critical ecosystem services such as food production, temperature regulation, and flood mitigation. Given the coming unpredictability of future extreme weather, the loss of these assets will present an exponentially greater threat to our residents' well-being and to the strength of our local economy." [2]

> "The most cost-effective adaptation strategies involve protecting the natural resources that provide resilience benefits for free: flood mitigation from wetlands and trees, heat moderation from urban forests, food security from productive farmland." [3]

> Our region is projected to receive more precipitation, often delivered in sudden extreme events without dependable frequency. With the rapid and intensifying impacts of climate change already occurring, there is simply no certainty that today's engineering standards will be adequate into the future.[4]

The CAP document also raises another serious concerns with Maglev's pave-overs—the loss of vegetated areas that absorb carbon and that be needed to grow food locally as foods from afar grow harder to obtain and more expensive due to climate change.

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[1] Cherry Hill Station, Exhibit C ADEIS Chapter #4.10 – Water Resources & Appendix D.7C.3 SCMAGLEV Project Affected Environment ATTACHMENT D – WATER RESOURCES, p. D.7-57

[2] Prince George's Co. Climate Action Plan, pp. 98,99.

[3] *Ibid, p. 99.*

[4] *Ibid, p. 98*

Climate Change and increased flooding potential*:* In the face of reality, BWRR avoids stating that the worsening climate crisis will multiply Maglev's impacts. Specifically, BWRR fails to concede that the growing frequency and intensity of weather extremes will reinforce and multiply the inevitable adverse effects caused by Maglev's land clearing, construction, and decades of operation. Although BWRR application estimates that Maglev's project's will reduce greenhouse gas (GHG). Yet even if this speculation is accurate, global GHG emissions are likely to rise in coming decades adding to the need to preserve rather than pave over permeable lands.[5]

What happens when flash floods or rising tidal water levels inundate impermeable surfaces? Figure 1 illustrates that the Washington-Baltimore Maglev corridor is located in one of the areas with the greatest probability that the severe storms will occur with much greater frequency. Secondly, scientific studies project that as a result of climate change sea level will rise over the coming decades. (See Figure 2). Rising sea levels will cause increases in water levels of Chesapeake Bay and tidal rivers such as the Patapsco River which flows through Baltimore to the nearby Bay.

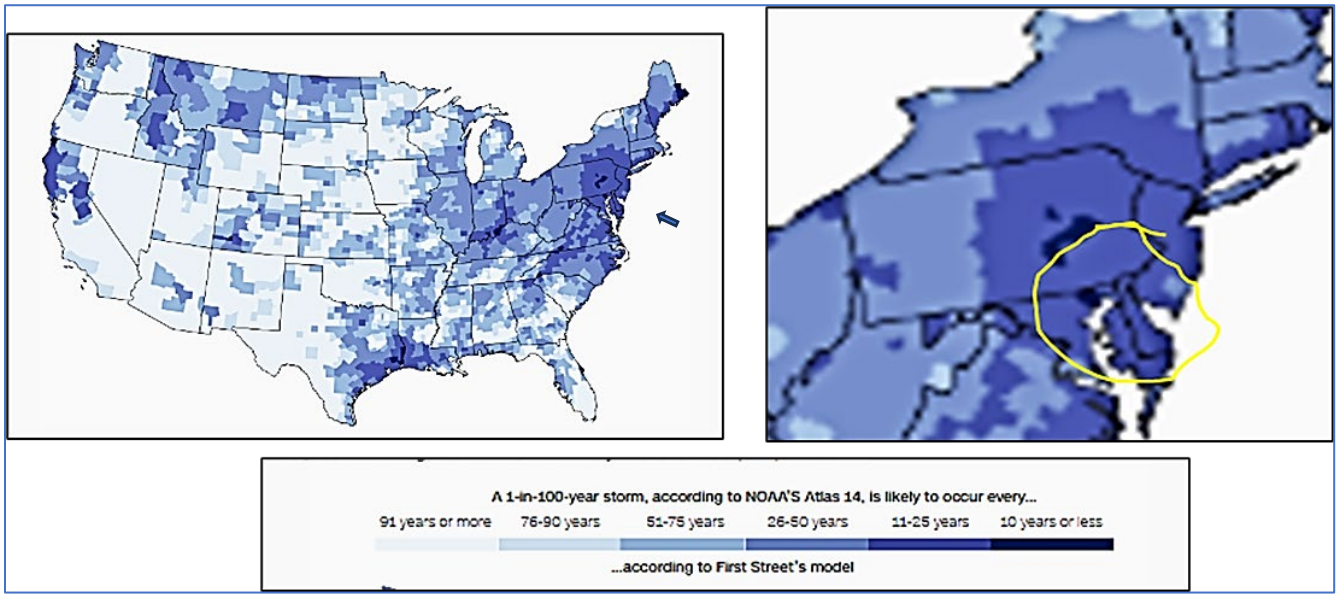

Figure 1: "Extreme precipitation is happening more often: More than half of Americans are twice as likely to face a 1-in-100-year precipitation event than previously modeled, according to a June 2023 study by First Street Foundation. The study finds that coastal areas in particular, including major population centers, are at much higher risk than estimated by NOAA's Atlas 14 precipitation data. Source: https://www.cnn.com/2023/11/14/us/national-climate-assessment-extreme-weather-costs/index.html

[5] The U.S. Energy Information Administration (EIA) estimates global energy-related CO2 emissions to increase through 2050 despite the growth of renewables will not offset the impact of energy consumption growth. See summary at: https://www.worldpipelines.com/business-news/11102023/eias-ieo2023-projections/

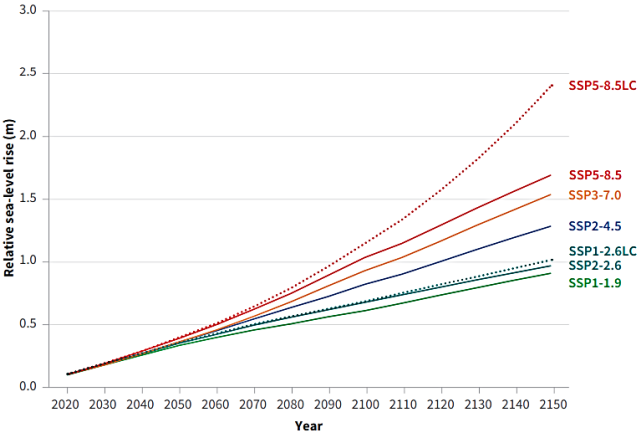

Figure 3. Median projections for sea-level rise at Baltimore under emissions scenarios included in the IPCC AR6. Projections labeled "LC" also include estimates of additional polar ice sheet losses that AR6 regarded with *low confidence*. Source: NASA Sea Level Projection Tool.

Figure 2: Source: "Sea-level Rise Projections for Maryland 2023", University of Maryland Center for Environmental Science and Maryland Commission on Climate Change

Extreme heat: A host of scientific studies also predict that during the decades when Maglev is developed and operated, global warming will increase the intensity, frequency, and duration of urban heat waves. What is now happening in America's southern states will inevitably move northward.

Maglev development involves extensive tree removal. Removal of trees in urban areas will greatly aggravate the devastating effects of heat waves on the health and lives of people who live and work in areas paved over for Maglev. Tree canopies provide shade but also have a cooling effect due to evapo-transpiration. (Root absorption of excess water lessens flood damages.)

Figure 3 shows the distribution of temperature across Baltimore due to the urban heat island effect. The Cherry Hill BWRR Maglev terminus area is located in a part of the city where temperatures are during heat events are on the order of 8 degrees greater than outlying suburban areas. As the previous excerpt acknowledges, installing the Maglev station to the Cherry Hill area will increase the heating by adding impervious surfaces. [6]

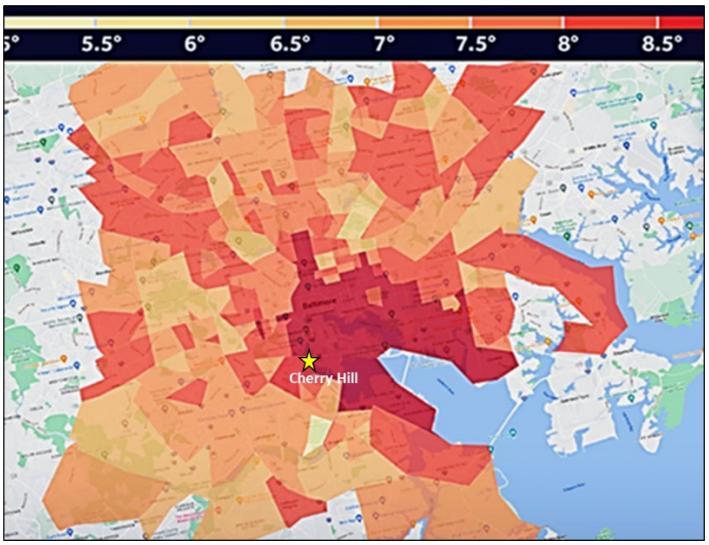

Figure 3: Urban heat island intensity F by census tract. Climate Central. Analysis based on Sangiorgio (2020) and Demuzere (2020). Source: Map of Baltimore. https://www.climatecentral.org/graphic/urban-heat-islands-2023?graphicSet=Urban+Heat+Island+Map&location=Baltimore&lang=en

[6] Cherry Hill Station, Exhibit C ADEIS Chapter #4.10 – Water Resources & Appendix D.7C.3 SCMAGLEV Project Affected Environment ATTACHMENT D – WATER RESOURCES, p. D.7-57

According to the U.S. EPA residents living in urban heat island areas "are more likely to experience heat-related illnesses and even death. Related negative effects include worse air quality and a higher cost burden of air conditioning bills." Based on its review of studies, EPA corroborates the finding that low-income and minority populations are more likely to live in neighborhoods with higher temperatures than those in adjacent neighborhoods within the same city."[7]

The Maglev Draft Environmental Impact Statement (DEIS) Section 4.5: Environmental Justice) states that the area affected by Maglev would have a minority population of nearly 70%. According DEIS (p. 4.4-8). "Impacts related to noise, vibration, and visual quality are prevalent throughout the corridor and would occur in neighborhoods and at community facilities within close proximity to the Build Alternatives and ancillary facilities (noise and changes to visual quality) and in areas above tunnel portions (vibration). These impacts could affect community well-being as community members could be exposed to higher than usual noise and vibration levels and notice changes to the visual features in the surrounding environment."

For example, installment of Maglev's Cherry Hill (preferred option) would expose residents, a host of adverse impacts including the loss of homes, businesses, a medical treatment center, heat extremes, flooding, noise, vibrations, and other adverse impacts. (See DEIS Table 4.4-1). According to the Baltimore City Health Department the population of Cherry Hill was 90.3 % Black or African American and had a median income of $22,659 (2015 statistics). A more recent City-Data survey reported a 93% non-white population including Hispanics of 93%.[8]

Mitigation or aggravation? The Maglev project would also fly in the face of the many efforts and funding being implemented to enhance climate-change mitigation measures.[9] For example, to curb the impacts of increased urban heat extremes Baltimore and other cities are attempting to increase tree cover—rather than remove it. "TreeBaltimore serves as the umbrella organization for all City agencies, private organizations, and individuals in their effort to increase the tree canopy of Baltimore. TreeBaltimore strives to increase the urban tree canopy in part to temper climate-related heat increases. The current canopy cover is 28% and TreeBaltimore's goal is to achieve 40% tree canopy cover by 2037." [10]

Along similar lines, Prince George's County's CAP states, "Maintaining a healthy tree cover (forest and street trees) is critical to Prince George's County's long-term ability to mitigate and adapt to climate change. Trees clean the air, provide free stormwater management, moderate air temperature, provide essential wildlife habitat, and sequester carbon. To maintain the county's 52% tree cover through 2030 and increase tree cover to 55% by 2050.[11] The Maglev proposal works in the opposite direction.

[7] U.S. EPA, Heat Islands and Equity, https://www.epa.gov/heatislands/heat-islands-and-equity

[8] https://www.city-data.com/neighborhood/Cherry-Hill-Brooklyn-MD.html

[10] https://www.baltimoresustainability.org/wp-content/uploads/2019/10/2018-DP3-For-Print.pdf, Chapter 1, p. 22.

[11] Prince George's Co. Climate Action Plan, p. 185.