



Kathleen Moore & Associates
School Facility Consulting

July 24, 2017

Mr. David Mieger, Project Director
Los Angeles County Metropolitan
Transportation Authority
One Gateway Plaza, MS 99/22/5
Los Angeles, CA 90012

Mr. Ray Tellis, Director
Federal Transit Administration Region IX
Los Angeles Metropolitan Office
888 S. Figueroa St., Suite 430
Los Angeles, CA 90017

SUBJECT: Expert Opinion Regarding MTA Westside Purple Line Extension Noise Impact
On Beverly Hills High School Student Learning and Staff Workplace Quality

Dear Messrs. Mieger and Tellis:

The following is my expert opinion based upon over 30 years of school facilities experience at the local, state and national level (see enclosed resume). Most importantly, I can state unequivocally as the former Director of the School Facilities Division of the California Department of Education (CDE) and the State Superintendent of Public Instruction's representative on the State Allocation Board, that were this school site with the MTA train line beneath it before the CDE for site approval, it would not receive such approval due to safety and environmental concerns. MTA and high school uses on the same site are irrevocably incompatible and represent poor planning and administrative oversight on the part of leaders proposing such a project.

The Westside Purple Line Extension Draft Supplemental Environmental Impact Statement (SEIS) uses noise and vibration impact thresholds defined by the *FTA Transit Noise and Vibration Impact Assessment (FTA 2006)*. Schools are considered FTA Category 3 receivers in this assessment. Category 3 thresholds are 75 VdB for groundborne vibration and 40 A-weighted decibels (dBA) for groundborne noise.

The American National Standards Institute (ANSI) standard is not to exceed 35 dBA for classrooms which takes into account a large body of research that provides compelling evidence of decreased speech intelligibility and therefore, lower comprehension for children when classroom environments have average noise levels greater than 35 dBA. Further, Federal standards for the Airport Improvement Program (AIP) provide an A-weighted sound level of 45 dBA and above for classroom sound insulation treatment eligibility.

Schools should be Category 1 receivers. The research (see below) supports this direction, and it appears to be a standard applied to the subway section that will run between Walt Disney Concert Hall and the Colburn School of Music for a line that will run deep – 135 feet below street level – whereas Building C's parking will be within 24.5 to 34 feet of the rails.

The SEIS indicates that daytime construction noise will be 65 dBAs at the Beverly Hills High School portable classrooms which under their preconstruction noise measurements are currently experiencing 59 dBAs. 65 dBAs during construction is almost double the ANSI standard of 35 dBAs and extremely exacerbates the already existing noise levels, and therefore, student comprehension and performance.

Construction noise will have a significant impact on student learning, and depending on construction timeline could last the *entire* high school career of a freshman.

The SEIS predicts for operation of a single train on Building C to be 53 dBAs (first story) and 72 VdBs with the subterranean parking structure and 56 dBAs and 75 VdBs with two trains, and it is expected that two trains will simultaneously pass under Building C **for no more than 21 times per day**. Building B1 was analyzed in original EIS/EIR. The prediction of a 53 dBA long-term operational noise level for building C is below the *existing* 59 dBA noise level currently measured at the relocatable buildings. This prediction is problematic on its face.

Chronic exposures to internal and external sources of noise can lead to deficits in test scores. Noise exposures are often determined by siting, such as proximity to major roadways or airports, or in this case --- metro construction and operations.

Ensuring appropriate noise levels and listening conditions at school is essential to maintaining the ability of teachers to deliver instruction in the classroom effectively so that students can clearly and easily hear and understand what is being said. As of 2014, more than 20 studies have shown that environmental noise exposures were negatively correlated with children's learning outcomes and cognitive performance (Basner et al., 2014). The research tells us noise levels can affect student and teacher health (Seabi et al., 2015). In recent years, evidence of the negative impacts of noise has strengthened in the case of aircraft noise and road traffic noise (Correia et al., 2013). Road traffic noise is associated with hypertension, a risk factor for cardiovascular disease as well as emotional symptoms, behavioral conduct problems, and increased hyperactivity in children (van Kempen & Babisch, 2012; Dreger et al., 2015; Tiesler et al., 2013).

Children under age 15 are more sensitive to difficult listening conditions because they are still developing mature language skills (Nelson et al., n.d.) and, compared with adults, children have more difficulty with complex listening tasks (Sullivan et al., 2015). Noise interference in the classroom can impair children's speech and listening comprehension (Klatte et al., 2013) as well as their concentration, understanding of verbal information, reading comprehension and memory (Seabi et al., 2015). In noisy conditions, children require a greater signal-to-noise ratio or less distortion from background noise to perform on par with adults in speech recognition tasks (Lewis et al., 2014).

In summary, MTA and high school uses on the same site are irrevocably incompatible and represent poor planning and administrative oversight on the part of leaders proposing such a project. Noise impacts from this project, both during construction and during its operation, will negatively affect generations of students and staff at Beverly Hills High School impacting student performance and educational opportunities for years to come.

Sincerely,

Kathleen J. Moore

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School Facilities Consultant

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EXPERIENCE

Kathleen Moore and Associates - School Facility Consulting, San Francisco, CA

Owner

2015 - Present

Provide consulting services to local educational agencies throughout the state ranging from educational planning, maximizing and leveraging funding, facility program management, and master plan development and implementation. Significant work: Grade level configuration study and implementation for San Ysidro School District; Facilities Program Consulting for Inglewood Unified including selection of architects, construction managers and district personnel to operate the over \$150 million bond and federal funded capital program; National facilities policy development for the U.C. Berkeley Center for Cities and Schools; Executive Director for the National Council on School Facilities responsible for membership, partnership development, and strategic roll-out of the 2016 State of Facilities national report and call to action; Elementary and Secondary Educational Specifications process and documents for San Rafael City Schools; and, Special Education consultancy for Kern County Office of Education.

California Department of Education, Sacramento, CA

Director of School Facilities and Transportation Services Division

2004-2014

Provided leadership and policy development to ensure California's K-12 school facilities support student learning, achievement and workforce development. Managed a \$6 million budget with a team of 30 that approved over 100 school sites and up to 700 school design plans annually for all California public school projects. Responsible for planning, organizing, developing and administering a variety of business related functions including department budgets, purchasing, IT and human resources. Approved the appropriation of over \$35 billion in school district facilities projects as a member of the State Allocation Board representing the Superintendent of Public Instruction. Represented California Superintendent of Public Instruction on the School Finance Authority Board, which oversees the statewide system for sale of revenue bonds for modernization and new construction as well as oversees the financial portion of the Charter School Facility Program. Served as the state liaison to the Department of Defense for its school facility program for base schools. Founded and administered the Green Ribbon Schools Award Program in California.

Elk Grove Unified School District, Elk Grove, CA

Director of Planning and Development

1989-2004

Managed a facilities budget of \$300 million in State Allocation Board funds for construction of 27 new schools and the modernization of 22 campuses. Managed the planning effort for new schools and modernization projects. Negotiated site acquisitions with local and national developers. Assisted with successful passage of school district's \$205 million bond measure in 1998.

Represented the district before federal, state, and local agencies responsible for facilities funding and approval. Lobbied for facilities legislation.

Antioch Unified School District, Antioch, CA

Director of Facilities

1988-1989

Managed all aspects of district facility program from planning to construction of new schools. Secured over \$15 million in State Allocation Board program funding within one year. Assisted with the negotiations for a Mello-Roos Community Facilities District that funded seven new schools and a community park. Directed the selection of school sites and negotiated the acquisition of property. Represented the school district before the planning commission, city council, State Allocation Board and all other local and state governing bodies.

ACADEMIC PREPARATION

CBO FCMAT Mentor Program (March 2016)

Council of Educational Facilities Planners International
Certified Educational Facility Planner (October, 2014)

University of San Francisco, San Francisco, CA
Master of Public Administration (May, 2005)

University of California Berkeley, Berkeley, CA
Bachelors of Arts, Political Science (June, 1983)

PROFESSIONAL MEMBERSHIPS AND AWARDS

Member, State Allocation Board, 2005-2014

Member, California School Finance Authority, 2005-2014

President, National Council on School Facilities, 2014

Chair, Coalition of Adequate School Housing, 2001-2003

James L. Murdoch Lifetime Achievement Award, 2011

Bob Vesper Facilities Professional Award, 2013