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How Well Are Newly Sited K-12 Schools Incorporating Vehicle Miles Traveled Mitigation Measures?

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Issue

In response to California law (SB 743, Chapter No. 386, Statutes of 2013), school districts are encouraged to use vehicle miles traveled (VMT) as criteria when evaluating the transportation impacts of new school construction, and identify feasible mitigation measures that eliminate or substantially reduce VMT generated by the new construction. To better understand the implications of this new law on school siting decisions, researchers at UC Berkeley analyzed 301 new schools constructed between 2008 and 2018 with respect to four VMT mitigation measures identified by the Governor's Office of Planning and Research (OPR) known to minimize VMT – proximity to high quality transit areas (HQTA), proximity to roads with bicycle facilities, proximity to electric vehicle (EV) charging stations, and walkability scores (Table 1).¹

Key Research Findings

Only 16% of new school sites were located within a high-quality transit area. A HQTA is typically defined as an area within ½ mile of a bus, rail, or ferry transit stop that has a service frequency of 15 minutes or less during peak commute periods. While about 20% of schools are located less than a third of a mile from an HQTA, nearly half (47%) are located more than three miles from an HQTA. High schools are most likely to be located in HQTAs (28%), while middle schools are least likely (0%).

Of the schools where bicycle infrastructure data is available (221 schools), 81% (179 schools) are located within ¼ mile of bicycle infrastructure, and 88% (194 schools) are located within ½ mile of bicycle infrastructure. On average, these school sites are located .27 miles from a

Table 1. Performance of New School Sites Relative to the Four VMT Mitigation Measures Identified by OPR

School Type	Number of New Schools	Percent of Schools Within an HQTA	Number of New Schools within ¼ Mile of Bike Infrastructure*	Average Walkability Score	Number of New Schools within ¼ Mile of an EV Charger
Elementary	131 (44%)	18 (14%)	75 (77%)	10.0	23 (18%)
Middle School	15 (5%)	0 (0%)	6 (75%)	8.3	4 (27%)
Middle/High School	13 (4%)	4 (31%)	10 (100%)	9.6	3 (23%)
High School	54 (18%)	15 (28%)	40 (93%)	11.5	16 (30%)
K-8	80 (27%)	9 (11%)	42 (76%)	10.0	8 (10%)
K-12	8 (3%)	1 (13%)	6 (75%)	9.6	3 (38%)
All	301 (100%)	47 (16%)	179 (81%)	-	57 (19%)

*Only schools with available bicycle infrastructure data (n=221) were included in the analysis.

street with bicycle-friendly infrastructure. Unsurprisingly, the distance to bicycle infrastructure is shortest in urban areas and longest in rural areas, with 89% of urban schools located within ¼ mile of bicycle infrastructure.

More than half (57%) of the newly sited schools are not considered “walkable,” with walkability scores of less than 10.5. Walkability is a measure used to characterize the ease of pedestrian travel in an area. Higher walkability index scores (closer to 20), indicate a high level of walkability, while lower values (closer to 1) indicate less walkable areas. The average walkability score for the 301 new school sites is 10.14. Middle schools have the lowest average walkability scores (8.3), meaning they are less walkable than high schools, which are the most walkable with a walkability score of 11.5. Not surprisingly, new school sites in “rural” localities have low walkability scores, averaging only 5.2.

Only 19% of new school sites are located within ¼ mile of an electric vehicle (EV) charger. OPR recommends incorporating neighborhood EV networks into new developments to aid in lowering GHG emissions. The 301 new school sites have an average distance of 1.8 miles to an EV charger. Nearly 60% (179) of sites are located within one mile of an EV charger while 11% are located over three miles from one.

Policy Implications

Overall, the study reveals mixed findings regarding how well newly sited K-12 public schools have incorporated VMT mitigation measures identified by OPR as aiding in SB 743 implementation. These findings suggest that local school siting practices may need to change to effectively adhere to SB 743 objectives and better incorporate VMT mitigation measures. There are several steps that the California Department of Education (CDE) could take.

1. Improve the state’s data collection on new school sites. The CDE should create a simple, user-friendly tracking system that records all sites obtaining CDE approval each year, which would include basic information on the year approved, size, spatial boundaries/geographic coordinates,

links to site approval documents, and a list of the school(s) that ended up being built on the sites.

2. Update site selection and development guidance to school districts to recommend incorporating known VMT mitigation measures as identified by OPR. New school sites incorporating VMT mitigation measures should be given funding priority and/or other incentives in the state’s School Facility Program, which provides grants to school districts for purchasing school sites and constructing new schools.

3. Provide technical assistance to school districts on incorporating VMT mitigation measures into school siting decisions and site plans. This guidance should be developed in collaboration with OPR and could include workshops, case examples, and tools/templates. The CDE and OPR should facilitate knowledge sharing among school districts, local governments, and Metropolitan Planning Organizations in the site design process to develop successful partnerships to incorporate VMT mitigation measures on or near school sites.

4. Support interventions that reduce VMT at existing school sites. As enrollment growth continues to slow statewide, construction of new schools will likely also slow. Thus, it is important to consider ways to reduce VMT associated with existing schools. This should include funding to expand Safe Routes to School programs, installation of EV chargers on school sites, installation of bicycle parking/storage infrastructure, and creating new bicycle path connectors.

More Information

This policy brief is drawn from the report “Reducing Vehicle Miles Traveled (VMT) Associated with K-12 Public Schools: How Well Do New School Sites in California Incorporate Mitigation Measures Known to Reduce VMT?” prepared by Jeffrey M. Vincent, Sydney Maves, and Amy Thomson with the Center for Cities + Schools at the University of California, Berkeley. The report can be found here: www.ucits.org/research-project/2019-21. For more information about the findings presented in this brief, please contact Jeff Vincent at jvincent@berkeley.edu.

¹Governor’s Office of Planning and Research, “Technical Advisory on Evaluating Transportation Impacts in CEQA.”

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