

Exhaust, diesel fumes foul public schoolyards across Washington state

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September 5, 2013



More than a dozen schools are located in the pollution plume created by traffic on Interstate 5.

More than half a century has elapsed since the Seattle School Board — with nary a raised eyebrow, records indicate — voted to allow one of the nation's biggest and busiest highways to be built cheek-by-jowl with John Marshall Junior High, trading away the school's playground for a larger plot of land nearby.

The John Marshall building beside Interstate 5 near Green Lake was closed for the last few years, but its doors are expected to open again to North Seattle middle schoolers in 2014. Yet now, as in 1958, school board deliberations on the renovation and opening of the school didn't include a word about the road rushing over the kids' heads, despite a compelling body of evidence dating back decades

that air pollution from highways can cause **lifelong respiratory problems** and **asthma attacks** and boost **school absenteeism**.

At least one school board member, Kay Smith-Blum, was alerted to the dangers at John Marshall. Locating a school beside a big road “raises public health concerns,” the director of the Pediatric Environmental Health Specialty Unit at the University of Washington said in an **email to a concerned parent**, which was copied to Smith-Blum. “Limiting children’s exposure to vehicle emissions should be a priority consideration.”

Explore the School List



“I do recall seeing a letter from a UW professor/health professional with regard to the John Marshall building potential issues with air quality,” Smith-Blum wrote in an email response to questions from InvestigateWest. She passed the email along to the facilities team, she says. “I am sure those concerns are being addressed/vetted by our staff,” Smith-Blum wrote.

But in fact, 21 months elapsed between the health expert’s September 2011 email and the time Seattle Schools officials, prompted by InvestigateWest’s questions, started looking into the dangers. The school board’s decision to reopen John Marshall is just one example of how, when it comes to air pollution near roads, Washington state school policies haven’t caught up with the science.

Children spend about a third of their day at school, often during the hours of heaviest traffic. Many schools sit alongside big, busy roads because that’s where land is cheap and bus access is more convenient. Within 500 feet of major roads, traffic pollution — a plume of suspended soot and gases — often carries pollutants at levels considered harmful by air-pollution researchers. **A 2008 study** found that more than 10 percent of surveyed U.S. schools were located within about 300 feet of highways, the distance within which road pollution is most potent.

A new InvestigateWest analysis found nearly 30 public Washington K-12 schools sit within 500 feet of a major road. Eight of the 30 schools beside highways were built within the past 10 years — after the dangers were well established by scientific research.

An additional 166 schools are located within 500 feet of the state's heaviest truck routes. The diesel fuel that powers these trucks can produce **100 to 200 times more soot** than gasoline engines, and the exhaust is so toxic that the World Health Organization **classifies** it as a carcinogen.

Yet in Washington, school districts reported that pollution from highways is rarely, if ever, considered in their school siting decisions, or in health strategies for existing schools. Contrast that with California, which a decade ago passed a law requiring that new schools be built at least 500 feet from major roads. At least five other states have similar siting guidelines in place. At existing schools, there are ways to reduce the danger, too: better air filters can help, for example, as can restricting kids' time outside when traffic is heavy.

Examples of Washington schools near roads abound. In Federal Way, a high school and its open-air football stadium, both opened in 2004, sit less than 500 feet from I-5. The school board vote to buy the large swath of property for the new facilities was unanimous.

In Vancouver, when the district raised a new elementary school in 2004 on property that's hosted a schoolhouse since the 1800s, an environmental review didn't mention the health effects from the interstate that had appeared a stone's throw from the property line.

“Because the school is not fronting the freeway, it didn't seem to present a problem,” said Vancouver Public Schools Assistant Superintendent Todd Horenstein.

And when Seattle Schools in 2012 tapped John Marshall to be brought out of mothballs, the thundering highway suspended over its twin tennis courts wasn't mentioned in a single school board discussion of the building's suitability.

“I've worked for Seattle schools for 10 years and I've never had any conversations on [outdoor] air quality,” said Jennifer Kovach, an assistant principal at Van Asselt Elementary. The school, like five others in Seattle, sits within the pollution plume of I-5.

“Anecdotally, it doesn’t seem like a problem,” Kovach told InvestigateWest in May. “Maybe we’re blissfully ignorant.”

I’ve seen data measured near freeways. It’s hard to imagine that it wouldn’t be bad.

SOORAJ KUTTYKRISHNAN
PARENT AND BIOSTATISTICIAN AT THE UNIVERSITY OF
WASHINGTON

The dangers of vehicle emissions have been known for years: researchers in Europe **first made the connection** between children’s poor lung function and school-day exposure to traffic in 1993. Ten years later a **California Environmental Protection Agency study** made a similar leap, finding that kids in San Francisco’s East Bay attending near-road schools were 5 to 8 percent more likely to suffer from bronchitis and asthma.

“The relative risk is small, but when you multiply that hundreds of thousands of kids in California who are exposed to traffic, it ends up being a rather significant effect,” said Bart Ostro, the study’s lead investigator.

Even though kids spend only a slice of their day at school, Ostro says that that time — and where’s it’s spent — is important if only because it’s when parents cede the most control.

“At home, you can reduce exposures by keeping your windows closed during rush hour, having cleaner filters. At school, they’re really subject to whatever the district does,” he said.

Of the roughly 50,000 kids who will attend Seattle schools this fall, nearly 2,000 of those will hit the books in classrooms within 500 feet of I-5. Of those schools, one has an advanced filter to catch the biggest bits of soot — TOPS in Eastlake.

Like John Marshall Junior High, TOPS — formerly Seward Elementary — found itself in the path of I-5 in the late 1950s. The first and second floors were level with the rushing highway and completely unprotected from air pollution until a sound barrier was installed around 2000. That made TOPS a firm “no” for Sooraj Kuttykrishnan when choosing a school for his daughter. Raised in an industrial city in western India, Kuttykrishnan started kindergarten with crippling asthma, terrifying his parents and imperiling the family’s finances with heavy medical bills.

So when choosing where his own daughter would start school, he and his wife Rebecca crossed TOPS off the list.

It didn't help that Kuttykrishnan, a biostatistician at the University of Washington, had just finished working on a U.S. Environmental Protection Agency-funded study examining the link between traffic pollution and cardiovascular disease. Results showing a firm link between roadway pollution and a **higher blood pressure** and **hardening arteries** didn't ease his worries.

"I've seen data measured near freeways. It's hard to imagine that it wouldn't be bad," he said.

The couple even chose to live in a pricey neighborhood in Capitol Hill so that their daughter could attend a school set back farther from roads.

"We just came back over and over to the idea that nine years of 30 hours per week adjacent to a freeway was a huge, huge negative," his wife Rebecca wrote in an email. "In the end, we finally shelled out the money and mortgaged our financial futures," she wrote, so their daughter could attend a safer school.

Not all parents are as concerned. Johnny Calcagno, a former TOPS parent whose son spent nine years at the school, said that although the school sits almost flush with the highway, the air quality around the school doesn't seem particularly bad to him.

"It might be attributable to being in Eastlake, maybe it's the lake air and the exhaust has other outlets," he said.

Proximity doesn't necessarily equal risk. Schools uphill from a road often experience less pollution than those downhill. Wind plays a role, as does topography like sound walls and trees and hedges.

Despite the many variables that influence pollution plumes, the more than 40 epidemiological studies measuring traffic's negative impact on health speak loudly, said Dr. Christine Bae, an associate professor with the University of Washington's Department of Urban Planning and Design.

"It's clearly an unhealthy situation," Bae said.

Bae co-authored a **2006 survey of schools** near freeways in Seattle and Portland. She and her co-authors found that the most growth in Seattle during the past

decade had occurred within freeway air pollution plumes. For Bae and fellow researcher Alon Bassok, that growth represents a missing link between the health profession and city planners.

“These are bigger land use regulation issues,” Bassok said. “Talk to people who have an impact on this and you’ll find that they’re not aware of it.”

That might be changing. When the interstate first came to John Marshall in 1958, air pollution was a distant notion for the denizens of leafy North Seattle. But 60 years later, the planned re-debut of the school has touched off a low boil among parents and health advocates.

An unsigned email to the district during deliberations about where to put the glut of North Seattle middle schoolers echoed what parents had been debating in [blog forums](#) for months.

“Make sure you are prepared to defend J. Marshall as an acceptable permanent site when additional environmental data is published recording negative health impacts of auto traffic near freeways. This will only increase.”

The school district is overhauling John Marshall’s electrical system and completing upgrades on its heating and ventilation system. Currently there are no plans to incorporate heavy-duty air filters or other protective measures to offset air pollution risks.

But, says district spokesperson Teresa Wippel, “We do have some time, with John Marshall. There aren’t kids there yet.”

Maria Renninger is the John Marshall parent who contacted UW’s experts on air pollution’s effects on kids, prompting the email from Catherine Carr, head of the Northwest Pediatric Environmental Health Specialty Unit — the email copied to Smith-Blum, the school board member. Renninger said she never received a response.

“We’re talking about where to put children who can’t speak for themselves,” Renninger said. “Parents are looking to the district and thinking, ‘They wouldn’t put kids there if there was problem, there must be laws.’ But the truth is there aren’t.”

<http://www.invw.org/article/exhaust-diesel-fumes-foul-1379>