

# Driving Harm: Health and Community Impacts of Living near Truck Corridors

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## Introduction

International trade and goods movement rely heavily on the trucking industry to move containers and bulk cargo from the ports to rail yards, warehouses and retail operations. This issue brief describes how the trucking industry and truck transportation corridors (highways/freeways/roads) are used in moving imported goods, discusses the impacts for communities that are located near busy truck corridors, and provides policy recommendations to improve health, safety and air quality in communities impacted by heavy volumes of truck traffic.



Trucks operate throughout the country along the supply chain from ports to retail stores. Trucks carry international cargo containers that are 20 or 40 feet long, or goods that are reloaded into domestic 53-foot long containers. Many trucks are operated by independent owner/operators, although large trucking companies often lease out the trucks and assign deliveries. In several cities, coalitions of

environmental, labor and other groups are advocating for truck drivers at ports to become employees to ensure better wages, insurance benefits, and better maintained trucks as a way to clean the air and protect the health of workers and community residents. Currently, basic labor laws, such as workers compensation, overtime pay, and occupational health and safety rules, do not cover most truck drivers carrying containers in and out of ports.

As international trade and the volume of imported containers have risen, so have concerns about the trucks' emissions. Local residents and environmental justice groups in communities along the truck corridors are concerned about diesel exhaust and community impacts from the trucks. Some of these residents live in communities with ports, rail yards, warehouses, and a steady stream of polluting trucks carrying goods in and out.

Government and industry sectors interested in trucking and highways include truck drivers, transportation and metropolitan planning authorities, port authorities, environmental consultants, trucking industry associations, and retailers. Many of these stakeholders have



### Examples of proposed road and interstate/truck route expansion projects related to global trade and goods movement:

- > I-26, Charleston SC
- > I-69, Detroit MI
- > I-710 Freeway, Los Angeles CA
- > Washington Blvd, Commerce CA
- > Eller Drive, Port Everglades FL

pushed for the expansion of highway capacity and infrastructure to accommodate anticipated increases in global trade and freight volume.

## Community Impacts

Port, rail and warehouse communities bear a disproportionate burden of exposure to air pollution from goods movement activity. For residents in these areas, exposure to air pollution from diesel exhaust and particulate matter is a daily concern. An intricate matrix of port terminals, rail yards, highways, and streets facilitate the movement of containers from their port of entry to their final destination – which may be thousands of miles away from the port where they entered. The last decade’s growth in imports means more trucks on the roads, which negatively affect communities by causing traffic congestion, safety issues, pavement damage, noise, and air pollution. In some cases, truck routes go directly through residential communities, creating pollution near homes, schools, and daycare centers (see Case Study). In addition, many homes and schools are located near truck corridors, very close to traffic-related pollution. This creates concerns about indoor air, as well as concern about breathing in high levels of pollution outdoors while exercising and children playing during recess.

### Case study: I-710 Freeway, Southern California

The I-710 Freeway, starting at the Port of Long Beach and running 23 miles north through Los Angeles County, is one of the most heavily used highways for movement of goods in the country. When there is a high number of containers coming in from the Ports of Los Angeles and Long Beach, at least 35,000 trucks per day travel on the I-710 Freeway.<sup>1</sup> Currently, there is a proposal to expand the freeway to accommodate more than 92,000 trucks a day by 2025, to meet what is expected to be a three-fold increase in imported containers at the Ports. Twenty percent of vehicles on the I-710 freeway are trucks, compared to 6 – 13% trucks on other Los Angeles freeways.<sup>2</sup>



*Sometimes when we do P.E. we have to run laps and it is hard to breathe. I see trucks sending out gray clouds into the air; I see that everyday. During lunch time, there are a lot of kids playing volleyball, soccer, and basketball, but most of them don't know that they are breathing in air that is bad for their health and bad for the environment.*

*The problem is that people are proposing new projects and that is a problem for me and my classmates because some of them have asthma and other respiratory problems.*

Elizabeth Reyes, 11 years old  
Hudson School, Long Beach, California

As with many other places in the country, Southern California land use decisions have resulted in homes, schools and even parks being located near highways. Sometimes these highways are later expanded, ending up even closer to homes. These decisions put people at increased risk of higher exposure to pollution from highways. According to the Los Angeles County Department of Public Health, 65 schools are located within one mile of the I-710 and more than 600,000 residents (including 212,000 under age 18) live within 1,500 meters of the Freeway. The population living within 1,500 meters of the I-710 Freeway has higher poverty rates and a larger proportion of people of color than L.A. County as a whole, raising serious social and environmental justice concerns.



Due to public pressure, the transportation authority in charge of the I-710 expansion project, MTA, created an advisory committee with community, government, and industry stakeholders. After months of meetings, the advisory committee concluded: *“Air quality is the number one public health issue. Poor air quality has had significant negative impacts on public, economic, environmental and community health in the corridor. Particulates and other pollutants from diesel truck traffic in the I-710 Corridor and the Ports of LA and Long Beach are our communities’ primary air-quality-related health concern. The first consideration for approval of any improvements within the I-710 corridor must be the project’s ability to reduce air quality impacts.”*<sup>3</sup>

## Health Impacts

Levels of particulate pollution and elemental carbon (an indicator for diesel exhaust) are elevated near highways, especially those with high truck volumes.<sup>4</sup> Pollution from highways has a large impact on asthma. Research has shown increased risk of asthma for children living within 246 feet of a highway<sup>5</sup> and more asthma symptoms such as wheezing and more use of asthma medication among children living closer to highways.<sup>6</sup> Children are also more likely to develop asthma when exposed to traffic pollution at school.<sup>7</sup> In a national survey, more than 30% of schools were within 1300 feet of a major roadway, and 10% are within 328 feet of a major roadway.<sup>8</sup> This is important because a large part of the population suffers from asthma: 15% of children under 18 in California have been diagnosed with asthma,<sup>9</sup> as well as 13% of children under 18 in the United States.<sup>10</sup>

Heavy duty trucks use diesel fuel and emissions contain diesel particulate matter (DPM), which is regulated as a Toxic Air Contaminant in California based on studies showing lung cancer in exposed truck drivers and rail workers. The U.S. EPA says DPM is “likely to be a carcinogen” (likely to cause cancer).<sup>11</sup>

Trucks also release dust from brake pads and pulverized tire rubber, adding to the particulate matter in the air. Studies of water sediment under bridges have found contamination from brake dust that contains asbestos, lead, and other heavy metals. Truck air conditioning units and refrigerated containers commonly release refrigerants, which are greenhouse gases that contribute to global warming.

## Health impacts of traffic pollution near highways

*Based on studies by the University of Southern California, University of California, Los Angeles, and scientists around the world*

### Children:

- › Higher risk of asthma for children living within ½ mile of a highway<sup>12</sup>
- › Asthma gets worse, such as wheezing and use of more asthma medication, among children living closer to highways<sup>13</sup>
- › Higher risk of asthma when exposed to traffic pollution at school<sup>14</sup>
- › Reduced lung growth in children living within 1,640 feet of a highway<sup>15</sup>
- › Premature births and smaller weight babies for pregnant women living near highways<sup>16</sup>

### Adults:

- › Higher long-term exposure to traffic is associated with new cases of heart disease in middle aged persons<sup>17</sup>
- › Both short-term and long-term exposure to traffic-related air pollution is related to cardiovascular deaths and illness<sup>18 19</sup>
- › Traffic pollution is linked to increased new cases of lung cancer in people who never smoked.<sup>20</sup>
- › Long-term exposure to traffic-related air pollution in middle-aged women is linked with a risk of developing type II diabetes as the women age<sup>21</sup>
- › Breast cancer in post-menopausal women is linked to traffic-related pollution<sup>22</sup>

## Economic impacts

In addition to health impacts, highways and trucking corridors create significant negative economic impacts in communities. Some of these include public health care costs, transportation infrastructure costs, global warming impacts, increased demand for highway patrol, fire department, paramedics, city inspectors, and regulatory agency inspectors.



Health costs have an economic impact. When children are absent from school due to illness, the schools lose funding for those students for those school days. Treating a child with asthma costs the state more than a child without asthma, and adds \$.50 to every health care dollar spent, according to a study by researchers at the George Washington University School of Public Health.<sup>23</sup> Emergency room treatment costs are 50% higher for asthmatic children than non-asthmatic children. Asthma hospitalizations cost California \$763

million in 2005.<sup>24</sup> The California Air Resources Board estimates that Southern Californians pay between \$100 million and \$590 million annually in health impact costs related to drayage truck pollution and will pay up to \$10.1 billion between now and year 2025.<sup>25</sup>

Road damage also has an economic impact. Environmental justice organizations state that the public has been subsidizing transportation infrastructure costs, through funding for repair and construction of highways, bridges, and corridors. Infrastructure costs include maintenance, repair, upgrades, expansion, and replacement. Infrastructure is typically designed and built to last many years, and the length of time that it will last is based on estimated number and weight of the trucks that will use it. When the freight volume and weight increases, this dramatically decreases the life expectancy of infrastructure. Cities and public agencies bear these costs, instead of the retailers importing the products. Public bonds finance many infrastructure projects over a long period like a home mortgage, so the costs increase by paying back the interest on these bonds. Infrastructure can also be transferred to a state in order to have the public support the replacement cost, such as the case of the Gerald Desmond Bridge. The bridge connects the Ports of Los Angeles and Long Beach to the I-710 Freeway. The bridge was built in the 1960s and owned by the Port of Long Beach. In issuing the EIR/EIS to replace the old bridge in 2010, the port transferred ownership of the bridge to the California Department of Transportation. California residents will now pay the \$1.1 billion for the replacement bridge.

## Current Regulations and Guidelines

Regulations on highways and diesel truck exhaust include federal regulations from U.S. EPA, as well as rules and guidelines on the state and local level. California Senate Bill 352 states that new schools cannot be built within 500 feet of a highway or busy road. Guidance documents have also been issued by air quality agencies. The California Air Resources Board issued guidelines in 2005, based on the health risks from highways, which recommended that cities not locate new homes, medical facilities, daycare centers, schools, or playgrounds within 500 feet of a

highway.<sup>26</sup> Similar guidelines have been issued by local air quality management districts, including the South Coast Air Quality Management District in California.<sup>27</sup> The Port of Los Angeles enacted truck rules through their Port Clean Truck Program to reduce truck emissions in the local community.<sup>28</sup>

## Policy Recommendations

1. Conduct transportation planning with full community participation and adequate health data.
  - a. All agencies with decision-making authority on the location, design, funding, and approval of roads and highways, including state transportation agencies, should hold open meetings and place community members on committees. The I-710 Freeway case study demonstrates that community participation and involvement in highway decisions are essential. Meetings need to be held at a time when working families can attend in the communities that will be affected by a project.
  - b. Conduct Health Risk Assessments (HRAs), Health Impact Assessments (HIAs), and Environmental Impact Reports, and studies of the costs, benefits, and alternative technologies, to assess the health and community impacts of highways and trucking as part of transportation planning.
  - c. Transportation Board, Regional Planning Agency, and Joint Power Authority membership should include representatives from residential communities, public health, environmental science, technology, urban planning, and labor organizations to ensure that impacted persons and environmental experts have a formal role in planning decisions.
  - d. Transportation, Port, and planning agencies should establish a Community Advisory Committee to allow for broader public input for every planned and proposed project, such as the example of the Port of Los Angeles Community Advisory Committee.<sup>29</sup>
2. Reduce pollution from existing truck transportation

The Impact Project is committed to zero emissions technologies and regulations across all stages of goods movement. Policy recommendations to reduce rather than eliminate emissions should be considered important interim steps towards achieving zero emissions.

- a. Monitor pollution from highways. Since current air monitors measure the general pollution of an area and are located away from highways, a network of monitoring stations should be established near highways to measure the emissions. If the air pollution levels are high, agencies should notify nearby residents and schools. The U.S. EPA is planning a network of nitrogen dioxide monitors near highways, but we recommend the addition of black carbon monitors as markers for diesel particulate.

- b. Set stronger air quality standards for residential and sensitive locations near highways. Air quality regulators should begin considering how to set air quality standards for near-roadway locations.
- c. Continue and strengthen clean trucks programs at ports. Clean Trucks Programs like that adopted by the Port of Los Angeles will reduce emissions by requiring cleaner trucks at the ports.<sup>30</sup> To achieve air quality improvements in the long run, plans should require truck drivers to be employees so that responsibility for purchasing and maintaining new clean trucks rests with companies rather than individual drivers.<sup>31</sup> Require every transportation related project to establish a Clean Truck Mitigation Fund to pay for the replacement of older polluting trucks such as the Ports of Los Angeles and Long Beach Clean Truck Program.
- d. Establish lower sulfur fuel content standards and higher engine mileage performance standards for trucks.
- e. While reducing emissions from vehicles should be the priority, provide air filters to all sensitive receptors such as schools, childcare centers, and residences near truck routes.<sup>32</sup>
- f. Use stricter zoning and planning processes to keep trucks away from people. Cities and counties need stricter rules to separate highways and truck routes from residences and other sensitive sites. Improved land use rules and better transportation planning can prevent residences and schools from being located close to highways or busy truck routes and can channel truck traffic away from where people live, study, and play.
- g. National implementation of regulations for idling restrictions, similar to California regulation 2485.<sup>33</sup>

### 3. Use alternative freight movement technologies

- a. Future federal, state and regional transportation plans and projects should include 21<sup>st</sup> century zero emission transportation technologies, such as electric rail or MagLev systems to transport products from the port to rail yards or in-region destinations. This will reduce need for additional truck traffic and highway expansion.
- b. Require the use of clean and zero emission truck technologies such as all electric trucks, Liquefied Natural Gas, and hydrogen fuel cell trucks.
- c. Require older trucks to use ultra-low sulfur fuel, be retrofitted with PM filters, oxidation catalysts. and hi-efficiency fuel combustion systems technologies.

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