



SFDPH Program on Health, Equity, and Sustainability

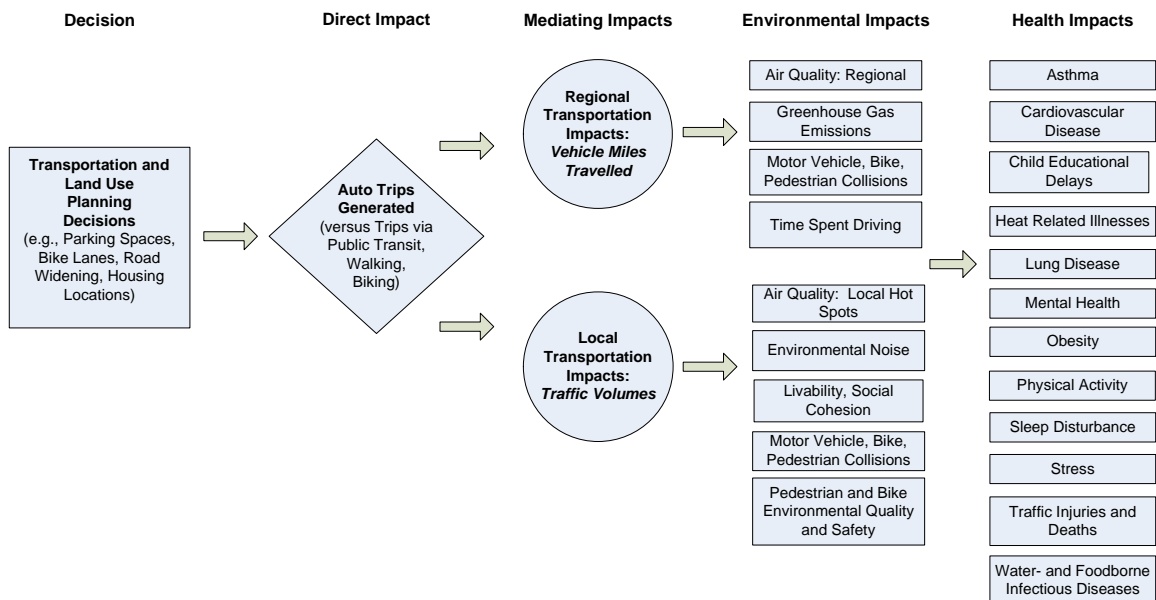
Urban Health and Place Team

Regional and Local Health Impacts of Driving – April 2009



Regional and Local Health Impacts of Driving: Considerations for Planning

Land use and transportation planning defines the distances people travel to access jobs, schools, good, services, and recreation. As distances between destinations increase so do the miles driven in motor vehicles, along with the associated hazards from air and water pollutants, noise, and vehicle collisions. Heavy volumes of vehicle traffic also create traffic “hotspots” and contribute to unfair burdens of air pollution, noise, and stress for those living adjacent to busy streets and highways, and degrade the environment for walking, biking, and public transit. The health impacts of regional vehicle miles travelled and local traffic hotspots are significant, and healthy urban and regional planning should aim to reduce both.



Regional Impacts: Health Benefits of Reducing Vehicle Miles Travelled

Air Quality: Decreasing driving distances decreases air pollution from motor vehicles. Air pollution from automobile emissions costs the nation’s health 50-70 million days with restricted levels of activity, 20,000 to 46,000 cases of chronic respiratory illness, and 40,000 premature deaths. Health effects associated with short-term exposure to fine particulate matter (air pollutants) include: increased hospital admission and ER visits for cardiovascular and respiratory diseases, non-fatal heart attacks, premature death in people with heart and lung disease, and lung function changes especially in children and people with lung diseases such as asthma.¹

Climate Change: Decreasing driving distances decreases GHG emissions. In California, transportation contributes approximately 50% of greenhouse gas emissions² – and is a large and growing share of greenhouse gas emissions nationally. Climate change in turn threatens to have global and catastrophic effects on health through: increased frequency, intensity and length of heat waves, floods, droughts, windstorms and wildfire, leading to increased mortality, illness and mental health impacts; increased exposures to ground-level ozone and aeroallergens, exacerbating cardiovascular and pulmonary illness; and shifts towards warmer temperatures, leading to increased risk of food- and waterborne infectious diseases.³

Traffic Death and Injury: Decreasing driving distances reduces risk for motor vehicle collisions. Nationally, for people aged 4 to 34, traffic injuries are the single greatest cause of disability and death. Approximately 40,000 people die in motor vehicle collisions each year.⁴ Driving longer distances and spending more time on the road increases the risk of being killed or injured in a traffic collision.⁵

Time: Decreasing driving distances increases time for other activities – including those that support health. Driving takes time away from other health positive activities, such as exercise, community involvement or time with family.



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Local Impacts: Health Benefits of Reducing Traffic Volumes

Air Quality: Decreasing local traffic volumes decreases air pollution from local traffic “hotspots.” Children living next to busy roadways have more respiratory disease symptoms, asthma hospitalizations and doctor visits, and poorer lung function measures than children who live further away from high traffic areas.⁶ Air pollution associated with roadway proximity contributes to cancer, respiratory disease, and impaired lung development.⁷

Environmental Noise: Decreasing local traffic volumes decreases exposure to traffic-related noise. Moderate levels of traffic noise negatively impacts on stress, and is associated with higher risk for hypertension, blood pressure, and heart disease.⁸ Children exposed to high levels of traffic noise are at increased risk of learning delays.⁹ Traffic noise also contributes to sleep disturbance, annoyance, leading to decreased concentration, increased aggressive behavior, and decrease helping behavior.¹⁰

Walkability and Bikability: Decreasing local traffic volumes increases the quality of the environment for people to walk, bike, and be physically active. Increased physical activity reduces risk of premature mortality and coronary heart disease, hypertension, colon cancer, and diabetes mellitus. Regular participation in physical activity appears to reduce depression and anxiety, improve mood, and enhance ability to perform daily tasks throughout the life span.¹¹

Traffic Hazards: Decreasing local traffic volumes reduces risk of injury and death for pedestrians. Research has shown that traffic volume is a significant, strong predictor of risk for people being injured or killed while walking.¹² Nationwide, pedestrians account for 11% of motor vehicle collision fatalities, with approximately 4,700 pedestrian deaths annually.¹³ 15% of those people killed while walking die in California.¹⁴ Pedestrians account for approximately 50% of traffic-related deaths in San Francisco – which has an injury rate approximately five times above the Healthy People 2010 national objective of no greater than 19 injuries/year/100,000 people.¹⁵

Livability: Decreasing local traffic volumes improves quality of life in local communities. Higher traffic volumes on local streets in San Francisco were found to be associated with residents’ perceptions of the street as unsafe, complaints regarding noise, fewer local friends and acquaintances, smaller perceptions of personal territory and decreased attentiveness to the street environment.¹⁶

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