



The air we breathe, the water we drink, crossing the street, driving our car and the food we eat are all examples of how our built and natural environments can influence our health, reduce risk factors and encourage people to make healthy choices that promote healthy lifestyles and prevent disease and injury. Research shows a connection between our environment and our health, but we have a long way to go to in understanding what links the two.

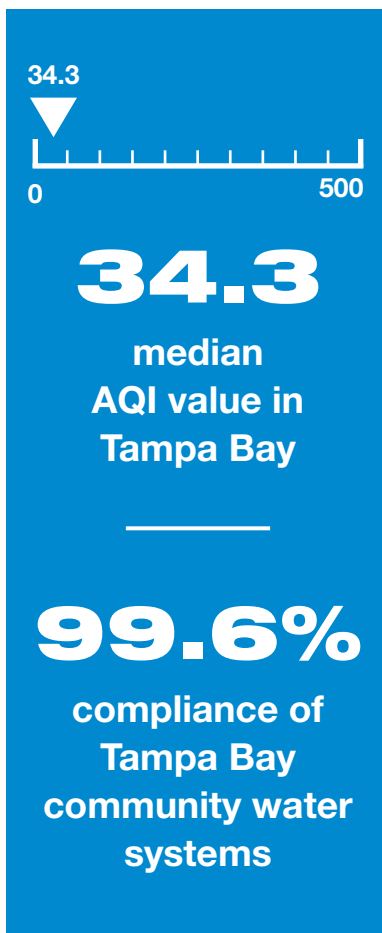
Natural Environment

Air Quality Index

The Environmental Protection Agency (EPA) estimates that reducing air pollution to levels required by the 1990 Clean Air Act Amendments will prevent more than 1.7 million asthma attacks.⁴⁵

Established by the EPA, the Air Quality Index (AQI) is an index for reporting daily air quality. AQI describes how clean or polluted the air is and what associated health effects may be of concern. The EPA calculates the AQI for five major air pollutants regulated by the Clean Air Act.⁴⁶

Measurements for air pollutants are converted into AQI values using standard formulas developed by the EPA. AQI is measured on the spectrum 0-500 with less than 50 being good and over three hundred as hazardous.⁴⁷ The higher the AQI value, the greater the level of air pollution and the greater the health concern. In Tampa Bay, the median AQI value of 34.3 in 2008 represents good air quality with little potential to affect public health.



Water Quality

These measures are based on violations reported by states to the EPA Safe Drinking Water Information System. All federal agencies must set performance standards for community water systems, which are public water systems that supply water to the same population year-round.

By 2011, the EPA's target is for community water systems to provide drinking water that meets all applicable health-based drinking water standards 96% of the time. The measure tracks the duration of a population's exposure to violations. For example, some systems may receive a violation for an incident that lasts only one day (e.g. turbidity increase due to storm event). The measure is intended to give a more accurate picture of exposure of the population to contamination.

In 2009, community water systems in the Tampa Bay area were in compliance 99.6% of the time compared to 96.3% in the U.S. and 98.9% in Florida.

Transportation

Today, the U.S. transportation system is designed to move people and goods efficiently, however, there is a growing awareness across communities that transportation systems impact quality of life and health. Expanding the availability of, safety for, and access to a variety of transportation options and integrating health-enhancing choices into transportation policy has the potential to save lives by preventing chronic diseases, reducing and preventing deaths, and improving environmental health.⁴⁸

Daily Vehicle Miles Traveled Per Capita

Vehicle miles traveled (VMT) indicates the demand on county roads and freeways. Areas with higher numbers of vehicle miles traveled tend to have higher rates of motor vehicle and pedestrian accidents, injuries and fatalities. Vehicle miles traveled lead to increased air pollution and greenhouse gas emission which contribute to cardiovascular mortality rates and respiratory disease. On average, Americans spend 443 hours in a car each year. Increased numbers of VMT have been tied to obesity and impact general well-being.⁴⁹

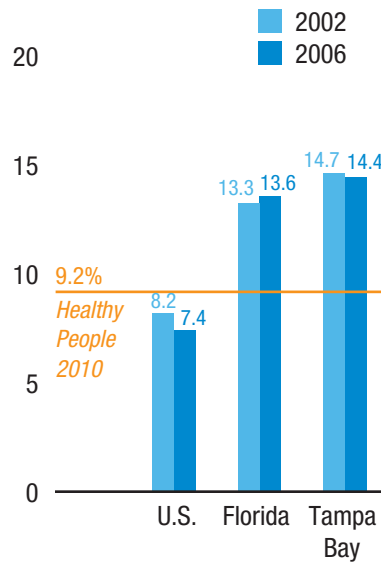
This indicator shows the average weekday daily VMT per capita as measured by total number of vehicle miles divided by the county's population. In 2008, the weekday daily VMT per capita for the U.S. was 26.8, for Florida it was 29.6 and for Tampa Bay it was 27.8.

Motor Vehicles Deaths

Motor vehicle-related injuries kill more children and young adults than any other single cause in the United States. More than 33,000 people in the United States died in motor vehicle crashes in 2009, the lowest number of deaths since 1950.⁵⁰ Crash injuries result in about 500,000 hospitalizations and four million emergency department visits annually.⁵¹ Increased use of safety belts and reductions in driving while

Motor Vehicle Fatalities

Deaths per 100,000 (age-adjusted)



27.8
average weekday
daily vehicle miles
travelled per capita
in Tampa Bay
in 2008

impaired are two of the most effective means to reduce the risk of death and serious injury of occupants in motor vehicle crashes.⁵²

This indicator shows the age-adjusted death rate per 100,000 people due to motor vehicle crashes. In 2006, Florida and Tampa Bay far exceeded the number of deaths at 13.6 and 14.4 deaths per 100,000 compared to 7.4 in the U.S. The *Healthy People 2010* target was 8.0.

Pedestrian Fatalities

In 2009, 4,092 pedestrians were killed in traffic crashes in the United States. With 2.51 deaths per 100,000 people, Florida had the highest pedestrian fatality rate of all 50 states in 2009. California, the most populated state, ranked 15th.⁵³

This indicator shows the number of pedestrians killed in traffic collisions per 100,000 population. The *Healthy People 2010* national health target was to reduce the pedestrian death rate on public roads to 1.0 death per 100,000 population. In Tampa Bay, the pedestrian fatality rate declined from 3.2 persons per 100,000 in 2006 compared to 4.1 in 2003.

Spotlight: Charlotte Area Transit System

Research shows a correlation between weight loss and ridership on the Charlotte Rail Line. The *Journal of Preventative Medicine* recently published a study on Charlotte's Lynx Light Rail. Their research found riding the blue line led to an average weight loss of around 6.5 pounds and that Light Rail users are 81% less likely to be obese over time. Researchers say that's because walking to and from your stop is part of a more physically active lifestyle. The built environment can constrain or facilitate physical activity. While the results are impressive, most studies of the health consequences of the built environment face problems of selection bias associated with confounding effects of residential choice and transportation decisions. Nonetheless, the authors of this study state that the findings suggest that improving neighborhood environments and increasing the public's use of light rail transit systems could provide improvements in health outcomes for millions of individuals.⁵⁴



Travel to work

Lengthy commutes cut into workers' free time and can contribute to health problems such as headache, anxiety, and increased blood pressure. More time spent in transit also translates to increased consumption of fossil fuels used for transportation, which is costly for workers as well as for the environment.

**Tampa Bay
commuters spent
25.1
minutes traveling
to work in 2008**

This indicator shows the average daily commuting travel time to work in minutes for workers 16 years of age and older. In 2008, Tampa Bay commuters spent an average of 25.1 minutes traveling to work, whereas commuters in Pasco and Hernando spent the most time in their cars at about 30.1 minutes.

Transit Ridership

Public transportation offers mobility for U.S. residents, particularly people without cars. Transit can help bridge the spatial divide between people and jobs, services, and training opportunities. Public transportation is also beneficial because it reduces fuel consumption, minimizes air pollution, and relieves traffic congestion.

This indicator is the daily average number of unlinked transit trips as a percentage of population. In the past five years, transit ridership as a percent of the population has been steadily increasing in Tampa Bay from 1.86% to 2.27% but in 2008, still lagged the *Healthy People 2010* target of 3.6%.

Built Environment

Population Density

Persons per square mile is the average number of inhabitants per square mile of land area. Population density is one indicator of how land is used in a given area. Higher population density signifies more urban areas.

According to the Brookings Institution, our nation's large metro areas remain at the cutting edge of the nation's continued growth. Growth of primary city populations of the nation's 100 metropolitan areas accelerated from 2006 to 2008, at the same time that suburban population growth slowed. Some of this resurgence of big cities is due to inherent strengths, such as broad economic diversity. But much is attributable to a "windfall" of residents attracted to and retained in cities who might – in the absence of the housing crisis and deepening recession – have moved to the suburbs.⁵⁵

Spotlight: Safe Routes to School

The Safe Routes to School Program (SRTS) was authorized in August 2005 by Section 1404 of the federal transportation act, SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). This program provided a total of \$612 million in Federal-aid highway funds to State Departments of Transportation (DOTs) over five Federal fiscal years (FY2005-2009), to make it safer, easier and more fun for children in grades K through 8, to walk or bicycle to and from school.



The Florida Department of Transportation received approximately \$29.1 million for use on SRTS projects through Federal Fiscal year 2009. The purposes of the Safe Routes to School Program are:

- To enable and encourage children, including those with disabilities, to walk and bicycle to school
- To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age
- To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption and air pollution in the vicinity of schools

The Alliance for Bicycling and Walking in its 2010 Benchmarking report measured the potential impact of bicycling and walking levels on public health. They found a correlation between obesity and overweight levels, physical activity levels, high blood pressure and diabetes.

States with higher levels of bicycling and walking

- average lower obesity levels
- have higher levels of physical activity
- have lower rates of diabetes
- average lower levels of high blood pressure

Between 2004 and 2008, the population of the Tampa Bay region grew at an average of 6.9% with the outlying areas in Pasco and Hernando counties growing at a much faster rate of 15.2% and 16.4% respectively compared to Pinellas County which had a negative growth rate of 1.5%.

Access to Healthy Foods

Studies have linked the food environment to consumption of healthy food and overall health outcomes. Grocery stores include establishments generally known as supermarkets, smaller grocery stores and delicatessen-type establishments primarily engaged in retailing a general line of food, such as canned and frozen foods, fresh fruits and vegetables, and fresh and prepared meats, fish and poultry. (Convenience stores, large general merchandise stores that also retail food, such as supercenters and warehouse club stores are excluded.)

This indicator measures grocery stores per 100,000 residents. In Tampa Bay, there were 19.2 establishments per 100,000 people compared to 21.3 in the U.S.

A “food desert” is an area without a grocery store within a reasonable walking distance or near public transportation.⁵⁶ Residents in a food desert do not have access to healthy foods. Tampa Bay is not a food desert as communities within the region have made strides in increasing the availability of healthy foods; from the addition of grocery stores in neighborhoods which previously lacked one, to the expansion in the number of farmer’s markets selling locally grown fresh produce.⁵⁷

Liquor Store Density

Researchers have documented a variety of problems associated with the physical availability of alcohol including assaultive violence, motor vehicle accidents, drinking and driving, riding with a drinking driver, high mortality rates due to liver cirrhosis, and binge drinking. Furthermore, liquor stores sell larger quantities of



19.2
grocery
establishments per
100,000 people in
Tampa Bay

alcohol that is available for immediate consumption than do taverns and restaurants serving alcohol.

This indicator measures liquor stores per 100,000 residents. In Tampa Bay, there are an average of 6.9 establishments per 100,000 people compared to 10.1 in the U.S. It should be noted that Florida law permits the sale of alcohol in establishments other than liquor stores, such as grocery and convenience stores. If those vendors were included in the density calculation, the region and state rates would likely be closer to the national average.

Public Safety

Violent Crime Rate

A violent crime is a crime in which the offender uses or threatens to use violent force upon the victim. In the FBI’s Uniform Crime Reporting Program, violent crime is composed of four offenses: murder and nonnegligent manslaughter, forcible rape, robbery and aggravated assault. Over 1.3 million violent crimes occurred nationwide in 2009, showing a decrease of 6.1% from the 2008 estimate.⁵⁸

This indicator is the rate per 100,000 population of total violent crimes. There were an estimated 454.5 violent crimes per 100,000 inhabitants in 2008 in the U.S. compared to 688.9 in Florida and 622.0 in Tampa Bay.

Spotlight: Women Infant and Children (WIC)

WIC is a food program for women, infants and children funded by the U.S. Department of Agriculture and administered through the county health departments. The program provides vouchers for the purchase of WIC foods to supplement the nutritional needs of a pregnant woman, a breastfeeding mother, a new mother, an infant or a child up to 5 years old.

www.doh.state.fl.us/family/wic

