

SUSTAINABLE DEVELOPMENT PRACTICES FOR COMMUNITIES AND NEIGHBORHOODS

SUPPLEMENTAL HANDOUT



VISIONEERING
WICHITA

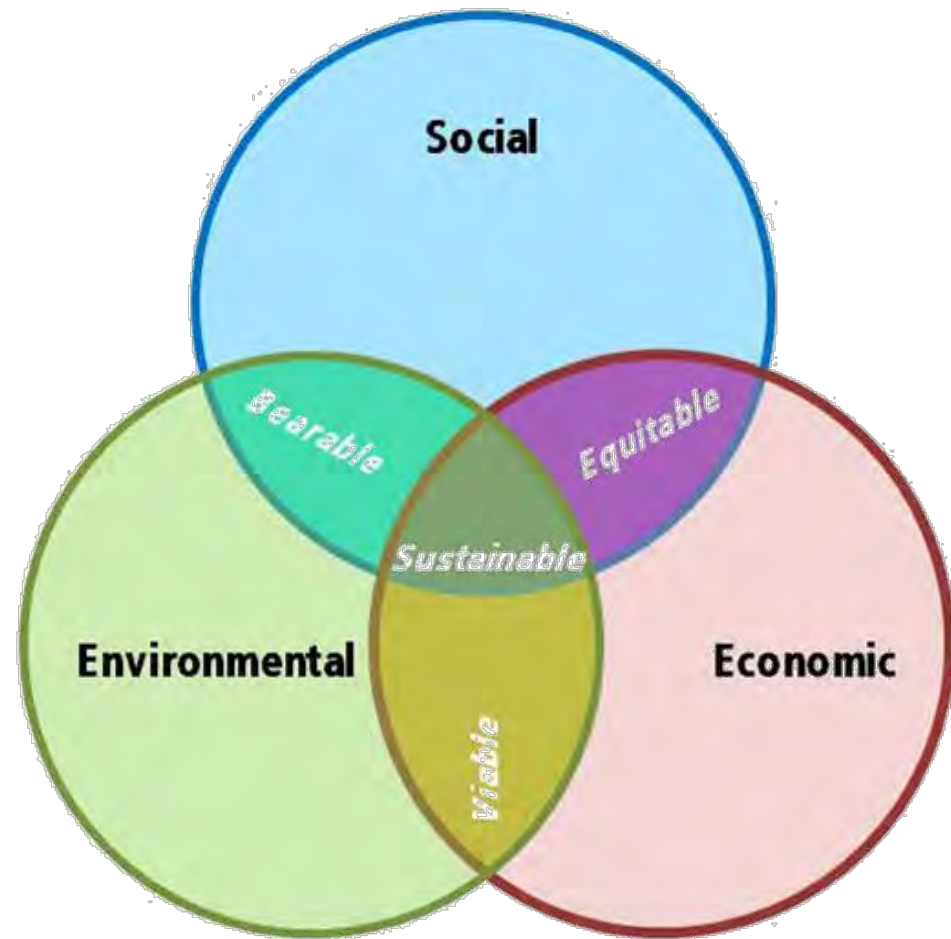
Environmental Sustainability Alliance
Forum on the Built Environment

April 28, 2011

TYPICAL SUSTAINABILITY MODEL

TRIPLE BOTTOM LINE

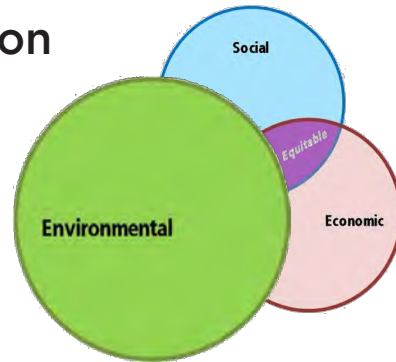
- **Environmental Concerns**
- **Social Concerns**
- **Economic Concerns**



The Venn diagram shown above is the typical sustainability model. In any application, the ideal balance of environmental, economic and social factors results in a sustainable situation. Anything less than the ideal balance is not fully sustainable. The following pages discuss sustainability as applied to neighborhoods and communities. It should be noted, there is no universally ideal balance of factors. Each individual community and neighborhood must determine the appropriate balance that makes it a sustainable place.

KEY ENVIRONMENTAL CONCERNS

- Overall Impacts
 - Land
 - Water
 - Air
- Resource Consumption
 - Water
 - Fossil Fuels/Energy
 - Natural Habitat
 - Farmland
 - Wildlife



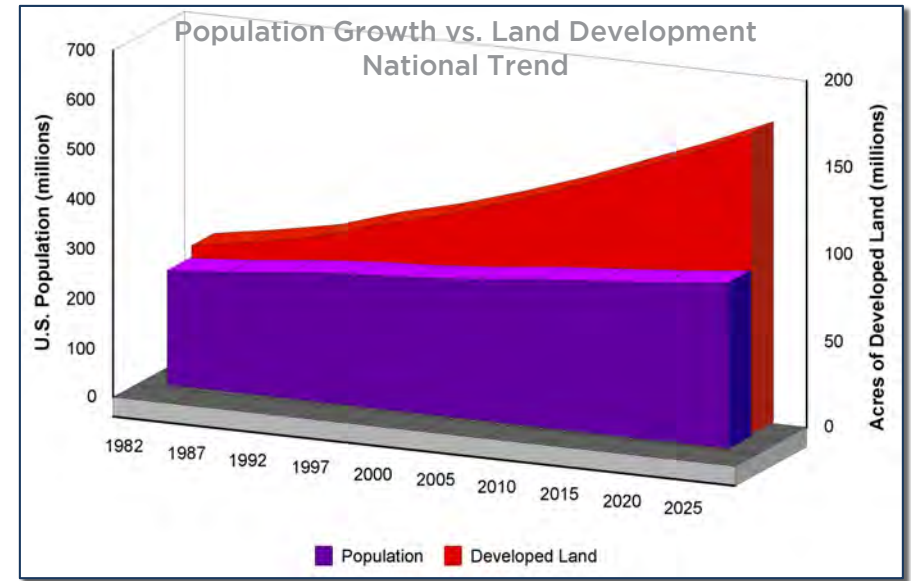
The bullet list above represents some of the main environmental impacts that communities and neighborhoods should consider.

The goal should be to minimize negative environmental impacts to the maximum practical extent.

Actions that reduce the rate of natural resource consumption or result in fewer harmful impacts to the environment make a place more sustainable.

Policy changes, design modifications or some combination of the two can be used to affect behaviors that result in sustainable communities and neighborhoods.

ENVIRONMENTAL SUSTAINABILITY INDICATOR



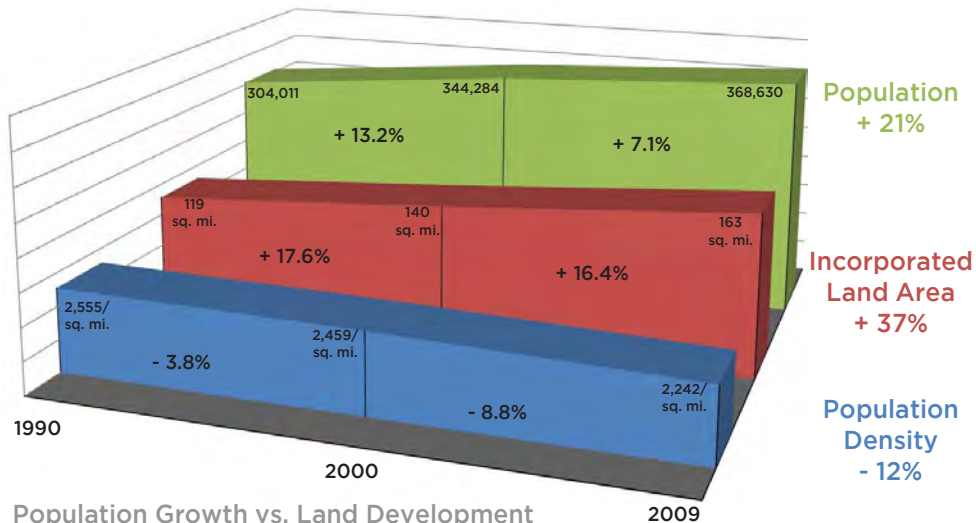
Source: EPA Office of Policy, Economics, and Innovation

One measure of environmental sustainability is the rate of land consumption relative to population growth or population density.

The graph above shows that the U.S. has historically developed land at a faster rate than the population has grown. That is trend is projected to continue for the foreseeable future.

This means that over time, each person is uses inhabited land less efficiently. As undeveloped land and farmland is consumed, or developed, that resource is removed from the available supply.

ENVIRONMENTAL SUSTAINABILITY INDICATOR



Population Growth vs. Land Development
City of Wichita Trend (1990-2009)

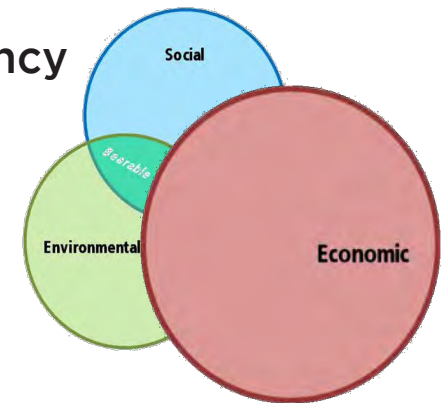
Sources: Wichita-Sedgwick County MAPD; WAMPO

Locally, Wichita is exhibiting a trend similar to the national trend. The graphic above depicts the changes in population, land area and population density in Wichita between 1990 and 2009.

The rate of expansion has occurred at nearly twice the rate of population growth. This has resulted in an overall decrease in population density of about 12%.

KEY ECONOMIC CONCERNS

- **Economic Sufficiency**
 - Jobs (Availability, Diversity, Access)
 - Entrepreneurism
 - Education
- **Infrastructure Efficiency**
 - Transportation
 - Water/Sewer
 - Stormwater Drainage

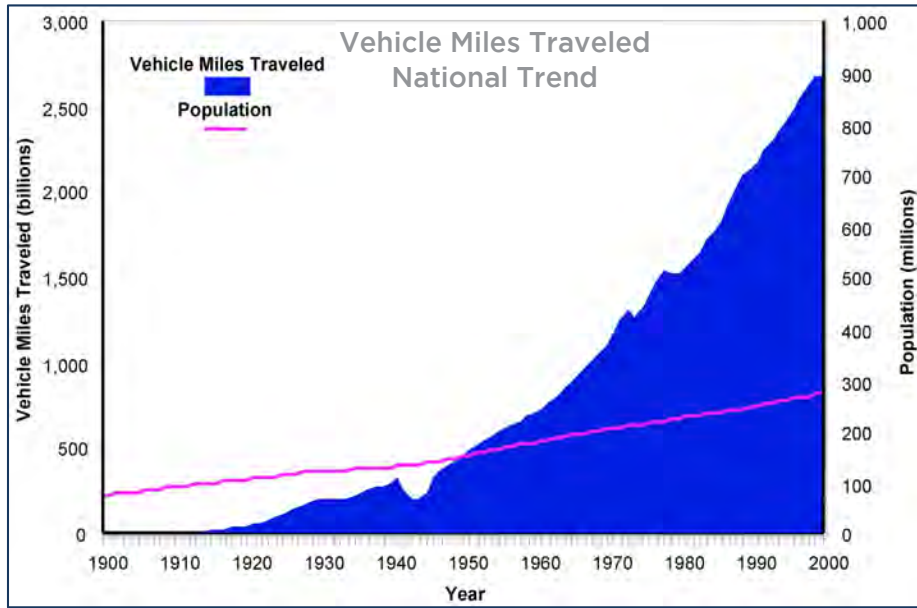


The bullet list above represents some of the main economic impacts that communities and neighborhoods should consider.

Economic sustainability is improved as opportunities expand for people to increase income or decrease expenditures.

As population density decreases, it becomes less efficient to provide services to a place. That is to say, per capita expenses increase. In the U.S. today, families spend a greater proportion of their incomes on housing and transportation than ever before.

ECONOMIC SUSTAINABILITY INDICATOR



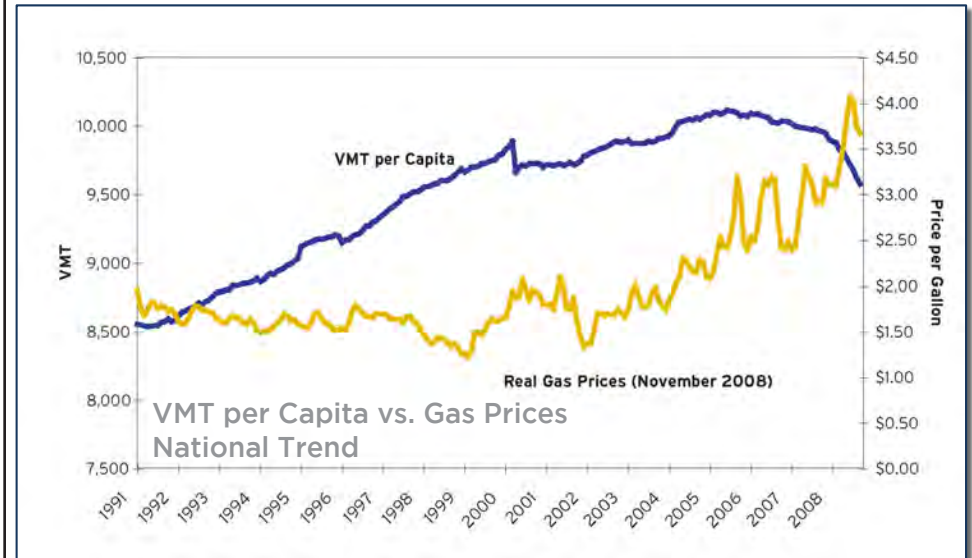
Source: EPA Office of Policy, Economics, and Innovation

The level of infrastructure efficiency is one indicator of economic sustainability. One measure of this is vehicle miles traveled (VMT) per capita.

The above graphic indicates that our national VMT has increased at a much faster rate than our population.

On a positive note, the U.S. reached our peak VMT per capita in 2004. It has declined since then.

ECONOMIC SUSTAINABILITY INDICATOR



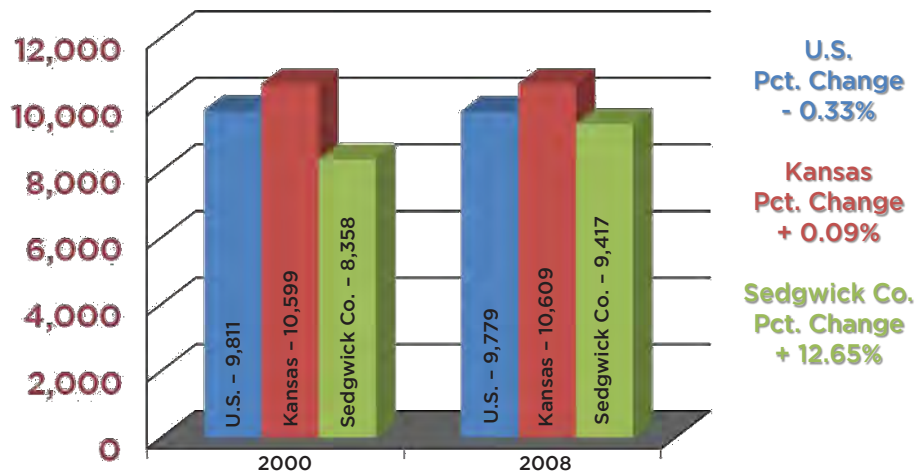
Source: The Brookings Institute

However, that decrease has been largely offset by a steady increase in gas prices. So in general, transportation costs have not decreased.

The related economic issue is the fact that federal transportation revenue is generated by a tax on gasoline. Gas is taxed per gallon. Even though prices have increased manyfold, there has not been a corresponding increase in transportation revenue.

Less money is available to maintain more transportation infrastructure, which is compounded by more VMT per capita, which is a result of farther travel distances, which is a result of land development expanding quicker than population growth.

ECONOMIC SUSTAINABILITY INDICATOR



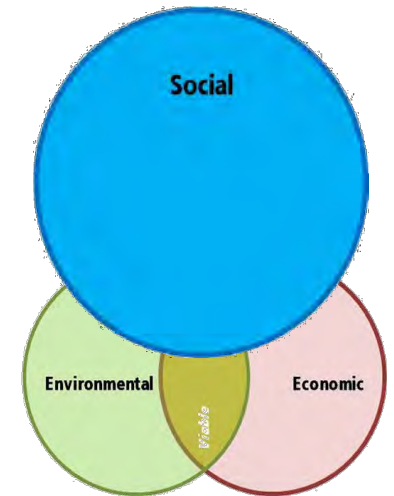
Annual VMT Per Capita
U.S. - Kansas - Sedgwick County (2000 vs. 2008)

Sources: Wichita-Sedgwick County MAPD; WAMPO; U.S. DOT Bureau of Transportation Statistics

Locally, we have some mixed results when looking at VMT. While our VMT per capita is lower than the national and state, we are trending upward. Our VMT per capita in Sedgwick Co. increased nearly 13% between 2000 and 2008.

KEY SOCIAL CONCERNS

- **Health Impacts**
 - Activity/Exercise
 - Air and Water Quality
 - Access to Health Care
- **Cultural Impacts**
 - Mobility/Accessibility
 - Recreation
 - Equity/Diversity
 - Aesthetics
 - Social Interactions

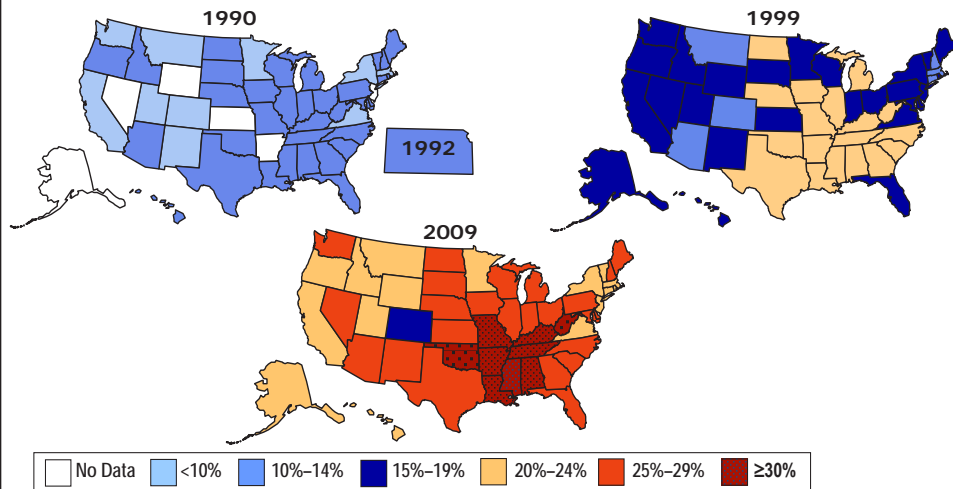


There are numerous social impacts to consider relative to sustainable development. Health can be negatively affected by pollution and aspects of neighborhood design. For example, we still have many residential subdivisions built without sidewalks, which discourages walking.

Cultural impacts include a variety of aesthetic and equity concerns. Once again, a neighborhood's design and layout can impact our behaviors, travel patterns and social interactions.

SOCIAL SUSTAINABILITY INDICATOR

Obesity Rates
State and National Trend



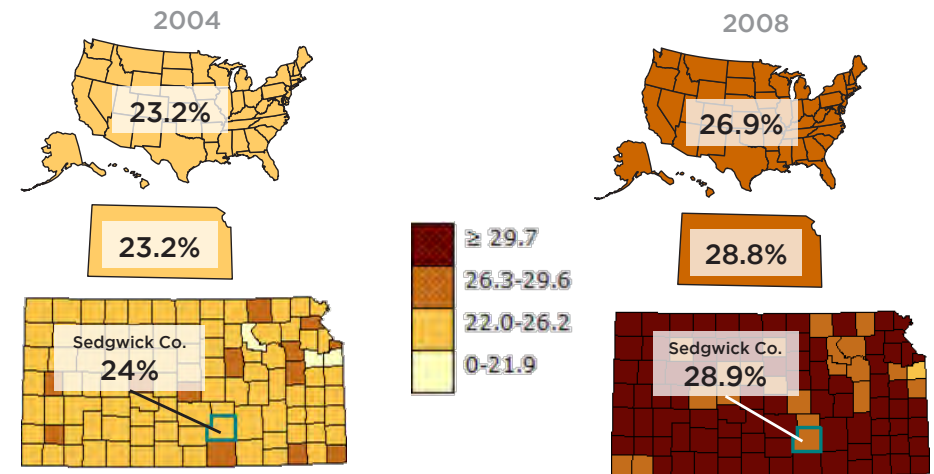
Source: Centers for Disease Control and Prevention

One indicator of social sustainability is the obesity epidemic. The CDC defines obesity as having a body mass index (BMI) greater than 30. BMI is a measure of a person's weight versus their height. Information on BMI and how it is calculated can be found on the Centers for Disease Control and Prevention website: <http://www.cdc.gov/healthy-weight/assessing/bmi/>.

The trend is obvious when viewing thematic maps dating to 1990. At that time, every state had an obesity rate under 14%. The first year of available Kansas data is 1992, so it is shown separately. In 2009, nine states exceeded a 30% obesity rate.

SOCIAL SUSTAINABILITY INDICATOR

Obesity Rates
U.S. - Kansas - Sedgwick County (2004 vs. 2008)



Source: Centers for Disease Control and Prevention

Comparing the national, state and Sedgwick County rates for 2004 and 2008 shows how we compare locally.

In 2004, Kansas was at the national average of 23.2% obesity. By 2008, we exceeded the national average by over 2%.

Our rate of increase is lower in Sedgwick County, although we still exceed the national and state averages.