Transportation Emissions Are the Elephant in the Room in Fight Against Greenhouse Gas Pollution: The September 2007 issue of Environmental Building News contains a surprising statistic: An examination of the "transportation energy intensity" of buildings has revealed that getting people to and from buildings uses more energy than the buildings themselves consume. For an office building built to modern energy codes (ASHRAE 90.1-2004), more than twice as much energy is used by commuters than by the building.

Indeed, the California Energy Commission has identified transportation as the largest single source of greenhouse gas emissions — a total of 41%. The lion’s share of this is coming from those of us who drive cars and light trucks.

Several forward-thinking California counties have looked at their own "carbon footprint" and discovered that transportation, calculated in terms of vehicle miles traveled (VMT), accounts for even more than the State’s reported average. Sonoma County officials have found VMT in that county to be 60% of total greenhouse gas emissions; Marin County estimates their transportation related emissions at 62% of total emissions in the County. These sources remain "the elephant in the room." It’s tough to figure out how to deal with them, yet we cannot reach greenhouse gas reduction goals without addressing emissions related to transportation.

California is among those states seeking to reduce transportation-related greenhouse gas pollution by requiring increased fuel efficiency of vehicles sold in the State (a measure currently being held up by the U.S. EPA). In addition, the State’s Air Resources Board is looking at changing what we put in our gas tanks. However, figures show that these strategies will not be successful on their own. Even if the most stringent fuel-efficiency proposals under consideration are enacted, vehicle emissions will still be 40% above 1990 levels in 2020, entirely off-track from the State’s goal.

Taming the Elephant By Growing Smarter: In a comprehensive review of dozens of studies released by the Urban Land Institute this month, University of Maryland Professor Reid Ewing and others have concluded that urban development is both a key contributor to climate change and one of the best ways to combat it.

According to Ewing, lead author of the new report, "The research shows that one of the best ways to reduce vehicle travel is to build places where people can accomplish more with less driving. Depending on several factors — from a mix of land uses to pedestrian-friendly design — compact development can reduce driving from 20 to 40 percent and more in some instances."

Recent studies reveal that Americans living in compact urban neighborhoods where cars are not the only transportation option are typically driving a third fewer miles than those who live in auto-oriented suburbs where there is no other choice than to travel by car.

Residents of Metro Square, pictured here, are four times as likely to accomplish daily tasks by walking and are taking only half as many driving trips as residents of neighboring conventional suburban developments. Metro Square is an infill development located in midtown Sacramento, near employment, restaurants, retail, and other services. Streets and sidewalks are safe and pedestrian-friendly. With higher fuel prices and more traffic congestion predicted for the future, the incentives for walking and transit will be even greater. It is probable that those who happen to be lucky enough to live in a place where they can walk or take transit will be even more likely to choose that option in the future.

The authors of the report feel it is realistic to assume a 30 percent reduction in VMT with Smart Growth. (The new Chair of the California Air Resources Board, Mary Nichols, is not too far off that figure. She has unofficially estimated a 25% reduction in VMT and greenhouse gas emissions per capita through Smart Growth.)

The opportunity for implementing Smart Growth on a large scale is real. The Ewing report cites real estate projections showing that two-thirds of the development expected to be on the ground in 2050 is not yet built, meaning that the potential for reducing emissions through land use changes is "profound."

However, while demand for smart-growth development is growing, government regulations, government spending, and transportation policies still favor sprawling, automobile-dependent development. The authors of the report recommend making changes in all three of these areas in order to make green neighborhoods more available and more affordable. They also call for including smart-growth strategies as a fundamental tenet in upcoming climate change legislation.

Urban Land Institute Senior Resident Fellow William H. Hudnut III, former Mayor of Indianapolis, concludes, "Being able to spend less time behind the wheel will benefit our health, our pocket books, and the environment." Providing transportation choices through compact, walkable, transit-oriented development will reduce VMT and associated greenhouse gas pollution, but that is not the only asset. It will also reduce urban sprawl and help to preserve the forests and agricultural lands that serve to absorb CO2 emissions.

**Measuring Global Warming Emissions From Current and Future Land Use Patterns:** The State of California has shown national and international leadership in committing to reduce its global warming emissions to 2000 levels by 2010 (11% below business as usual), 1990 levels by 2020 (25% below business as usual) and 80% below 1990 levels by 2050. Attorney General Jerry Brown has made it clear that emission targets should be addressed by local governments through environmental review documents.

Marin and Sonoma County planning departments have figured out how to calculate historic transportation-related emissions and have traced them back as far as 1990. According to Alex Hinds, Director of Community Development for Marin County, all it took to accomplish this task was employing a very bright student intern.

However there is confusion about how to predict the greenhouse gas pollution coming from future land use patterns. Most transportation models fail to consider the impact of community design on walking, biking, and transit use.

Recent research has identified what makes a specific neighborhood development walkable or bikeable. The secret is summarized as the "4Ds": 1) Density, 2) Diversity (the mix of housing, retail, offices, schools, etc.), 3) Distance (how far the neighborhood is from a town center or transit), and 4) Design (sidewalks, street widths, safety, and aesthetics.)

Some Metropolitan Planning Organizations (MPOs) have recognized the need to more accurately account for smart growth land use options. They now apply a 4Ds "post processor" to refine the output of their travel model so that it more accurately reflects the VMT effects of land use choices, particularly those associated with smart growth. According to Michael McKeever, Director of the Sacramento Area Council of Governments, SACOG has augmented the PLACES model with the 4Ds so that it is capable of factoring in walking, bicycling, and transit use when predicting VMT and associated Greenhouse Gas Pollution from a proposed development.

The URBEMIS model, developed by the California Air Resources Board reportedly is also capable of including walkability and bikeability in a transportation analysis. Several consulting firms and air pollution control districts are now using the URBEMIS tool. It can be downloaded free of charge at www.urbemis.com/.

**The Critical Role of Local Governments:** Demand for smart growth development is growing. Market research shows a majority of future housing demand lies in smaller homes and lots, townhouses, and condominiums in neighborhoods where jobs and activities are close at hand. Researchers note that demographic changes, shrinking households, rising gas prices, lengthening commutes and cultural shifts all will play a role in that demand.

A number of builders and developers are responding to the market research, but they often run into roadblocks. When they reach the desk at the planning department, they discover that creating a walkable neighborhood is illegal. At a recent conference of the California Chapter of the American Planning Association, almost every planner in the room raised a hand when asked if they were working to implement smart growth. The same number also raised a hand when asked, "Are you struggling with out-of-date codes?"

The sad truth is that government regulations, in addition to government spending and transportation policies, still favor sprawling, automobile-dependent development. A recent issue of the magazine of the California Chapter of American Planning Association has observed: "Possibly no other level of government has a greater responsibility to respond to global warming than cities and, to a lesser extent, counties."

**Register Now For the 2008 New Partners for Smart Growth Conference:** Online registration is now available for this premier Smart Growth event that will take place in our nation's capital, February 7-9, 2008.

This year's event is our largest ever, with over 100 sessions, over 300 speakers, and 15 exciting tours of local model projects. The conference will also include some interesting optional special events, and plenty of networking opportunities for our multidisciplinary audience of over 1,500 people! Strategies for reducing greenhouse gas pollution will be a key theme addressed throughout the conference. For more details on the conference program and to register, visit www.NewPartners.org.

**LGC Website is Tops!:** The Planning Commissioner's Journal has ranked the LGC website as one of the best in the nation for citizen planners. In case you haven't visited us lately, we invite you to check out www.lgc.org.