

ENERGY CONSERVATION PLAN

■ TODAY'S CONDITIONS

Energy conservation is important to the future of Allegheny County. As energy costs continue to rise, more efficient use of energy will be essential for the continued economic health of the region. Energy conservation practices are also essential for improving and protecting the quality of the County's air and water, and so the health of its citizens. Energy conservation is, in many ways, the key to a truly sustainable future for the County.

Energy conservation can be achieved through a number of measures including:

- Energy efficient technologies
- Waste reduction and recycling
- Recovering energy from waste
- Sustainable building design, including green building
- Deep energy reductions in existing homes
- Energy efficient development
- Reduced reliance on the automobile
- Transportation Congestion Management and multimodal solutions
- Alternative energy sources

Through these and other conservation practices, not only will public health and the environment be better protected, but consumers, businesses and local governments will save money.

MORE ENERGY EFFICIENT BUILDING SYSTEMS

In recent years, Allegheny County has installed energy efficient lights, upgraded HVAC, energy management and control systems, and reduced water use in dozens of County facilities. These relatively simple improvements have been projected to save the County over \$740,000 annually.

By lowering its use of resources through energy-efficient technologies, the County is also reducing the overall demand for electricity. Electricity generated by burning coal or natural gas releases carbon dioxide, sulfur oxide and nitrogen oxides into the air. These pollutants contribute to smog, acid rain and global warming. The County's building systems upgrades should reduce carbon dioxide emissions by 30 million tons of carbon dioxide per year.

GREEN BUILDING

Green building, as defined by the U.S. Environmental Protection Agency, is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle (from siting to design, construction, operation, maintenance, renovation and deconstruction). Green buildings are designed to reduce the long-term impact of the built environment on human health and the natural environment by:

- Incorporating sustainable materials in their construction
- Reducing waste, pollution and environmental degradation
- Efficiently using energy, water and other resources
- Creating healthy indoor environments

It has been shown that worker productivity increases in green buildings – another contribution to the bottom line. Green building is also known as a sustainable or high performance building.

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction and operation of high performance green buildings. Pittsburgh has become one of the top five cities in the world in green building, with 17 structures LEED Certified by the U.S. Green Building Council.



Photo credit: Kevin Smay

PNC Financial Services built the LEED Certified PNC Firstside Center in 2000. The Pittsburgh Convention Center, constructed in 2003, is the first green convention center and the world's largest green building. The center has a LEED Gold rating. Carnegie Mellon University built the country's



first green dorm room in 2003. River Quest has a \$4 million, 90-foot certified green boat in its fleet of classroom vessels. UPMC's new Children's Hospital, due to open in 2009, will also be a green building. Hospital officials expect the energy cost savings reaped from the green design to reach 30%.

The Green Building Alliance keeps a listing of the certified green buildings in the region on its website (www.gbapgh.org/casestudies_main.asp). Additional resources are available at www.epa.gov/greenbuilding/ and www.usgbc.org.

URBAN FORESTRY

Trees can conserve energy by reducing utility demands (air conditioning in summer, heating in winter). Urban tree plantings help to cool cities, creating a more pleasant pedestrian environment. The evaporation from a single large tree can produce the cooling effect of ten room-sized air conditioners operating 20 hours a day, according to the U.S. Department of Agriculture. Trees can also reduce the effects of global warming by converting carbon dioxide, the dominant greenhouse gas, into oxygen.

The City of Pittsburgh's Shade Tree Commission works to preserve and maintain as many trees within the City as possible. Newly planted street trees are generally Bradford Pears.

Other municipalities in the County also have shade tree commissions.

RECYCLING

The Allegheny County Health Department has a Recycling Coordinator to carry out the requirements of Act 101, the State Municipal Waste Planning, Recycling, and Waste Reduction Act. Act 101 mandates recycling in Pennsylvania's larger municipalities, requires counties to develop municipal waste management plans and provides for grants to offset expenses. The goals of the Act are to:

- Reduce municipal waste generation;
- Recycle at least 25% of waste generated;
- Procure and use recycled and recyclable materials in state governmental agencies; and
- Educate the public as to the benefits of recycling and waste reduction.

Of our 130 municipalities, 81 have a curbside collection program and 16 have a drop-off program. Communities not included in the Act's mandate are those that have a population of 5,000 or less. Allegheny County had a recycling rate of 20% in 2001, much less than Pennsylvania's 36% recycling rate.

Under current permit and loading conditions, the average estimated remaining life of County landfills is 12 years. Greater use of recycling throughout the County will extend the life of existing landfills, averting the development of new facilities.

METHANE RECOVERY

Methane is the major component of natural gas and a potent greenhouse gas that contributes to global warming.

Landfill Methane

Methane can be generated by the fermentation of organic matter, including municipal solid waste. Municipal solid waste landfills are the largest human-generated source of methane emissions in the United States. Methane that is generated by landfills can be captured, however, and used as a source of energy. The capture and use of landfill methane has substantial economic and environmental benefits, including:

- Reducing the use of fossil fuels such as coal and natural gas
- Reducing methane emissions and therefore global warming
- Reducing local air pollution
- Creating jobs, revenues and cost savings

Generating energy from landfill gas emitted from decomposing garbage can directly reduce greenhouse gas emissions – the gas is captured rather than released into the atmosphere. There is a methane recovery facility at the Mazzaro Landfill site in Findlay Township and the Monroeville Landfill in Monroeville Borough. The BFI – Imperial Landfill in Findlay Township has a pending methane recovery project, while the Kelly Run Landfill in Forward Township is listed as a candidate site for methane recovery by the Pennsylvania Department of Environmental Protection.

Coalbed Methane

Coalbed methane (CBM) has become a valuable part of the nation's energy portfolio, accounting for about a twelfth of U.S. natural gas production. As America's natural gas demand grows substantially over the next two decades, CBM will become increasingly important for ensuring adequate and secure natural gas supplies for the nation.

Interest in commercial development of CBM is growing throughout the Commonwealth. Pennsylvania has many coal resources that are too thin or too deep to be of commercial value for mining and therefore provide opportunities for methane production. Currently, there are 75 CBM wells in commercial production in Pennsylvania. To date, there are no CBM facilities operating in Allegheny County. Known CBM facilities in the region are in Cambria, Fayette, Green, Indiana, Washington and Westmoreland Counties.

The Pittsburgh coal of the Monongahela Formation has all the qualities desirable for producing coalbed methane, including high methane emission rates, according to the Pennsylvania Department of Natural Resources.

PATTERNS OF DEVELOPMENT

Over the last few decades, the predominant development pattern in Allegheny County has been suburban sprawl. 'Sprawl' is a term used to describe a pattern of land development that results in the conversion of farmland, forests and other open space lands into new development that is typically low density, single-use and automobile dependant. Sprawl often results in land being consumed at rates that exceed population growth.

A 1998 study for the Natural Resources Defense Council showed that low density sprawl is costly, inefficient and inequitable. Sprawl uses more resources, such as fuel, than traditional city and town development, and requires costly extensions of infrastructure, such as public water and sewer service.

Inequitable Development

In Allegheny County, sprawl has certainly been inequitable. Sprawl has resulted in the hollowing out of the urban core and decay in older, urbanized communities. The loss of tax ratables in these areas has led to higher tax rates to raise the revenues needed to pay for existing services. Some of

the most impoverished communities in the County have the highest property tax rates.

In the past, public transportation served workers commuting into the urban core where the majority of jobs were located. But today, economic development has spread to suburban areas and so is more disperse. Many of the new jobs aren't accessible to low-income residents since public transit does not serve those workplaces. Public transit is a more energy-efficient form of transportation than the use of privately-owned automobiles. Longer distances between low-income neighborhoods and new job opportunities means longer and more costly commutes for those who can least afford it.

The transportation sector is the largest consumer of petroleum in the United States, accounting for 67% of America's petroleum consumption and 28% of its greenhouse gas emissions.

INCREASING USE OF CARS

Figure 4I.1 (Chapter 4, Section I, Transportation Plan) shows that in four out of the past five years, average vehicle miles traveled in the County have been increasing. As development patterns change, people are driving more frequently and driving longer distances to get to their destinations. While the general trend is increasing, fluctuations do occur and are a response to shifts in the economy. The number of trips is also increasing due to changes in household patterns and locations of activities.

Annual vehicle miles traveled in Allegheny County are expected to continue to increase over the next several years unless changes in development patterns occur. Even if the fuel efficiency of vehicles improves, driving more miles will lead to greater fuel consumption. A reduction in annual vehicle miles traveled is needed to conserve fuel reserves and can result from increased transit use.

ALTERNATIVE ENERGY SOURCES

The Pennsylvania legislature passed the Alternative Energy Bill in November 2004. The Bill requires a total of 18% of Pennsylvania's electricity to be generated by alternative energy sources by the year 2020. The Bill also requires eight percent of Pennsylvania's electricity to be generated by so-called 'Tier I' renewable sources of energy by 2020. Tier I energy resources include solar, wind, geothermal



and biomass. In addition, the Bill requires 10% of the State's electricity to come from a second category of resources that includes waste coal, integrated combined coal gasification technology, municipal solid waste, large-scale hydro, demand-side management and distributed generation systems.

The Bill has increased interest in implementing alternative energy production systems statewide and in the County.

■ ISSUES AND ANALYSIS

This section examines what can be done to reduce the amount of energy used in the County.

KEY CHALLENGES

In developing the Energy Conservation Plan, the Environmental Quality Resource Panel helped to identify these key challenges:

- Inefficient use of energy
- High reliance on automobiles

The following provides an understanding of these issues.

INEFFICIENT USE OF ENERGY AND ITS RELATION TO GLOBAL WARMING

Energy conservation is an important topic in terms of quality of life for present and future residents of Allegheny County. The consumption of carbon-based fuels produces carbon emissions, or greenhouse gases, that contribute to global warming. The rising concentration of greenhouse gases poses a multitude of risks to Allegheny County and to our planet as a whole. Many scientists believe it's the most challenging environmental issue of our time. Recent studies show that the increase in greenhouse gases into our atmosphere will have a lasting effect on our climate for many generations to come.

Allegheny County currently experiences nine to ten days a year of temperatures exceeding 90°. Over the next century, the County can expect 65 days over 90° Fahrenheit if nothing is done to reduce greenhouse gas emissions, according to recently published research by the Union of Concerned

Scientists on climate changes in the Northeast United States. The climate change will have dramatic effects on human health, air quality, water quality, economic development and winter recreation. The impact on the poor and disadvantaged is likely to be disproportionately severe.

According to the 2007 *Climate Change Roadmap for Pennsylvania* produced by the Pennsylvania Environmental Council, Pennsylvania is responsible for about 1% of the worldwide emissions of greenhouse gases. This level of emissions ranks third among U.S. states and puts Pennsylvania in the league of the top 25 nations.

■ Reducing Emissions

Currently, Pennsylvania has no climate change strategy. But there are a number of climate policy proposals currently before the U.S. Congress that would require severe emissions reductions. Many solutions are already available, including greater energy efficiency, increased use of renewable energy and reductions in deforestation. These changes can be encouraged by a wide range of market-based and complementary policies, including international cooperation on emissions reductions, renewable electricity standards, efficiency standards for electricity and vehicles, and incentives for cleaner technologies.

Recognizing the problem, investment in the clean technology industry has been increasing dramatically over the last couple of years. According to a May 2006 Cleantech Capital Group Report, venture capitalists invested \$1.6 billion in North American clean technology companies in 2005, an increase of 43% from 2004. Because the County has a number of firms producing pollution control equipment, clean technology can drive dynamic economic growth in Allegheny County while also improving the environment.

■ Sustainable Building Design

The May/June 2007 issue of *Progressive Investor* explores the reasons why the real estate industry is embracing sustainable business practices and clean technologies. Some of the significant drivers of this trend are the clear benefits of green design:

- Developers and building owners are feeling the crunch of high energy and water costs, which, according to the Building Owners and Managers Association, constitute 28% of operating costs for downtown office properties

and 30% for suburban properties. They see the quick payback and cost savings energy efficiency and other green building upgrades offer.

- Building green no longer costs more. Turner Construction's 2005 Green Building Market Barometer shows it costs a mere 0.8% more for basic LEED Certification, which is easily recouped through lower operating costs.
- Increasingly, clients and tenants show a preference for green buildings, which have been proven to increase productivity and employee retention, and lower absenteeism. The combination of reduced operating costs and more satisfied occupants translates into 3.5% higher occupancy rates, 3% higher rents and a 7.5% increase in building value, according to the McGraw-Hill 2006 SmartMarket Report.
- A recent United Nations study concluded that green buildings can do more to fight global warming than all of the curbs on greenhouse gases agreed to under the Kyoto Protocol, while saving billions of dollars.

Progressive development firms are increasingly focused on urban infill buildings, rather than suburban greenfields, and incorporating advanced energy efficiency measures as well as recycled building materials, gray water systems, rainwater capture and green roofs into construction.

HIGH RELIANCE ON AUTOMOBILES

In Allegheny County, suburban development has increased considerably in previously rural areas over the last 20 years. The County's population has shifted away from older, denser urban core areas to newer, less dense development in the outlying municipalities. Such sprawl requires people to drive longer distances and make more trips by car.

In the late 1940s, about 70% of the County's population was close to urban population centers accessible by trolley lines. After 1950, most of the core communities experienced substantial population losses, while newer municipalities in outlying areas gained residents. Public transit ridership dropped dramatically. Unlike historical forms of development in Allegheny County, the typical suburban land use pattern does not have the density to support transit use.

Suburban sprawl is a major contributor to global warming.

Suburban sprawl has the potential to accelerate as the transportation system expands, allowing people to live ever farther distances from where they work. It has been a problem throughout the state. Pennsylvanian residents are driving more than ever before, fueling increases in vehicle emissions, one of the leading sources of global warming pollution. Annual vehicle miles traveled by all Pennsylvanians increased 51% from 1980 to 2005, and only a small part of that increase was caused by population growth.

Sprawling development patterns are a key contributor to global warming and an essential factor in combating it, according to the report released in September 2007 by the Urban Land Institute, Smart Growth America and other organizations. The report warns that if sprawling development continues, the total miles that people drive will increase nearly 60% between 2005 and 2030, and carbon emissions from this increased driving will overwhelm expected gains from vehicle efficiency and low-carbon fuels.

Even with technological improvements, vehicle emissions of carbon dioxide would be over 40% above today's levels, well over the goal of reducing CO₂ emissions to 1990 levels by 2050, according to *Growing Cooler: The Evidence on Urban Development and Climate Change*.

■ Curbing Sprawl

Pennsylvania is working to address the problem of sprawl. Executive Order 1999-1 established eight policies to guide state agencies when making decisions that impact land use, including ensuring that infrastructure plans are consistent with sound land use practices. Building on these policies, an interagency land use team released Keystone Principles for growth, investment and resource conservation in 2005. Three Keystone Principles promote energy efficient development:

- Redevelop first
- Provide efficient infrastructure
- Concentrate development

Compact communities with a mix of land uses and a highly connected street network promoted by *Allegheny Places* are associated with fewer vehicle miles and trips, and



more bicycling and walking per capita. They have also been linked to lower per capita levels of ozone and carbon dioxide emissions.

■ Equity Considerations

Reinforcing and revitalizing existing centers and creating new tightly-knit, mixed-use, walkable and transit-supportive centers not only conserves energy, but supports the equity principles of *Allegheny Places*. For economic reasons, many families and individuals do not have the use of automobiles for commuting to jobs, school, shopping or entertainment. Other individuals who are disabled, elderly, young or not licensed to drive may rely on walking and transit to reach their destinations. Mixed-use developments (especially those near transit stops) provide the opportunity for people to more easily travel to and within these communities without the use of a car.

■ RECOMMENDATIONS

GOAL OF THE PLAN

Development and redevelopment in the County occurs in a manner that supports sustainable and cost effective energy utilization.

OBJECTIVES OF THE PLAN

The objectives of the Energy Conservation Plan are to:

- A.** Protect and enhance the environment and public health by promoting energy conservation and continuing to improve the County's air quality.
- B.** Establish compact mixed-use centers that provide a dense population of potential transit users, both for trips within and between centers.
- C.** Make transportation corridors multi-modal, by providing vehicular, transit, pedestrian and bicycling options.
- D.** Provide incentives to develop certified green buildings and use alternative fuels and renewable energy.

The following provides an understanding of the objectives.

A. Protect and Enhance the Environment and Public Health

Our way of life is powered by energy. Energy drives the economy and has a significant impact on the environment.

Improving Air Quality

Since the Pittsburgh region is in non-attainment for a criteria pollutant, Allegheny County is required to develop and implement a plan to reduce ozone and particulate matter (PM_{2.5}) pollutant levels. The County's maintenance status for carbon monoxide (CO) indicates that it is nearing the goal of attainment, but will continue existing activities and pursue new opportunities to reduce CO levels.

The use of reformulated gasoline can help to reduce CO levels in the County. Reformulated gasoline is designed to reduce ozone-forming volatile organic compounds and air toxics emissions by increasing the oxygen content to promote more complete fuel combustion.

The County will work with the Pennsylvania Department of Environmental Protection (PADEP) and the U.S. Environmental Protection Agency (EPA) to develop and distribute educational materials to promote practices that reduce emissions. Such practices include using public transit, combining trips in the car, the use of hybrid vehicles and using products that do not contain volatile organic compounds. The County will also work with PADEP and EPA to develop and implement measures to encourage and assist local businesses and industries in reducing emission sources. Priority will be given to reducing toxic emissions.

Local governments will be encouraged to implement and enforce measures to reduce emissions within their municipalities.

Reducing Greenhouse Gases

Pennsylvania – and to a lesser extent Allegheny County – is already a recognized leader in many of the technologies, policies and practices needed to reduce greenhouse gas emissions:

- Green buildings
- Windpower
- Recovery of landfill methane
- Sustainable management of forests
- Commitments to cleaner vehicles and fuels

Pennsylvania joined 16 other states in endorsing a renewable energy goal of 25% of our energy from renewable resources like wind, solar and biofuels by the year 2025. Known as “25 x 25”, the U.S. Senate unanimously adopted this goal in June 2007. Increasing America's renewable energy use will:

- Bring new technologies to market and save consumers money
- Reduce our dependence on oil from the Middle East
- Create new jobs in rural America
- Clean up the air and reduce urban smog and help slow increases in global warming

In February 2007, Pennsylvania's Governor unveiled an Energy Independence Strategy that is expected to avoid higher consumer utility bills, reduce reliance on foreign sources of fuel, add 13,000 new jobs and attract \$3.5 billion in new investments to the state's economy. By funding renewable energy and reducing energy consumption, the state's greenhouse gas emissions will be reduced.

Locally, individuals, businesses, organizations and government agencies can take actions that include:

- Purchasing renewable energy
- Reducing fuel use (including driving less)
- Reducing waste
- Recycling more

These and other measures will reduce the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide (known as a ‘carbon footprint’).

A carbon footprint can also be reduced through the purchase of ‘carbon offsets’. Carbon offsets

are typically used to fund activities by nonprofit organizations dedicated to reducing greenhouse emissions in this country or globally. There are a number of organizations set up to receive the purchase of carbon offsets on the internet.

Alternative Energy Sources

Working with PADEP and EPA, the County will develop programs to promote and attract sources of green renewable energy and encourage residents and businesses to purchase power from these sources. There is little practical opportunity for wind power generation within Allegheny County, according to the Pennsylvania Wind Resource Map published by the U.S. Department of Energy's Wind Program and the National Renewable Energy Laboratory. However, the potential for application of other technologies does exist.

A number of alternative fuel options exist for motor vehicles, but supplies and availability are limited.

Reducing Traffic Congestion

Numerous Federal Highway Administration (FHWA) studies have shown how a dedicated traffic signal coordination program can yield consistent benefits in terms of reduced travel time and increased fuel savings. On average the retiming of one signalized intersection can result in an annual fuel saving of 4,000 gallons of fuel. At current fuel prices, this translates into a savings of \$12,000 per year assuming \$3.00 per gallon. Signalized intersections across the County should be systematically upgraded, along with an ongoing retiming and coordination program.

Because most emissions are from motorized vehicles in congested areas, the County will continue to work with and encourage PennDOT to develop plans to reduce congestion on State roadways.

The federal Congestion Mitigation and Air Quality Improvement (CMAQ) Program funds transportation projects or programs that will contribute to attainment or maintenance of the national ambient air quality standards (NAAQS) for ozone, carbon monoxide, and particulate matter. The CMAQ program supports two important goals of the County: improving air quality



and relieving congestion. Because CMAQ funds are intended to improve air quality, funds must be spent in non-attainment or maintenance areas, which Allegheny County is.

Demand Management Strategies (see Table 4L.1) can also result in a more energy-efficient use of the County's transportation system and resources.

The Transportation Plan describes several possible CMAQ eligible project categories and Demand Management Strategies that the County will employ to reduce congestion and fuel consumption.

B. Establish Compact Mixed-Use Centers

The Future Land Use Plan for Allegheny County directs land use to designated Places in the County in order to conserve energy. A compact arrangement of mixed land uses can conserve energy by:

- Reducing travel distances
- Reducing the need to drive
- Providing public transit
- Supporting walking and bicycling
- Minimizing the size of infrastructure systems

The 'shape' of the future County, as reflected in the Future Land Use Plan, fundamentally supports the conservation of energy.

Most Places designated on the Future Land Use map will be closely-knit, mixed-use centers of housing, shopping, employment, community facilities and open space. Jobs and retail opportunities will be within walking distance (or a short bicycle or drive) from residences. All uses are to be easily accessible to one another and potentially reduce the need for automobile trips. Even when required, vehicle trips will be shorter and thus consume less fuel.

Allegheny Places encourages efficient development density close to existing infrastructure and community resources to minimize the need for the development of new infrastructure.

The Future Land Use Plan promotes the redevelopment of existing centers and brownfields, which also acts as a check on suburban sprawl by reducing development pressures on greenfields. Furthermore, it acts as a check on water and sewer extensions and roadway expansions that are often needed to support development in greenfields.



Source: McCormick Taylor

Transit-Friendly Development

The Future Land Use Plan is intended to maximize the use of the existing transportation network, target investments for maximum return and provide all people equal access to growth opportunities, especially those associated with Places designated on the Future Land Use map.

The Future Land Use Plan focuses development in designated Places. Most Places are along existing transportation corridors and all are highly accessible to each other, as well as to the region. The biggest impediment to transit use is low-density, spread-out development. Therefore, one of the key benefits of concentrating development, investment and activities in Places is that transportation alternatives can be developed that provide choices and options for movement between Places. Increased mobility will help ensure that more people have greater access to jobs, shopping, schools and other destinations.

Land is a limited resource that should be used wisely and, when possible, recycled and reused.

Most Places designated on the Future Land Use map will be more supportive of transit use. Potential transit services range from circulator vehicles within a Place, such as Oakland, to transit that connects one Place to another, such as Oakland to the Airport. In any case, the intent is for transit to reduce private automobile trips, reducing energy consumption as a result.

Transit-Oriented Development (TOD) is a key element in the County’s planned economic growth, as explained further in the Economic Development, Future Land Use and Transportation plans. TOD offers a mix of uses including office, retail and housing. Since TODs are accessible by multiple modes of transportation, they can reduce the number of vehicles on the road.

TABLE 4L.1 – Demand Management Strategies

Address Security Concerns	Strategies for improving personal security on public transit
Alternative Work Schedules	Flextime, Compressed Work Week (CWW), and staggered shifts
Bike/Transit Integration	Ways to integrate bicycling and public transit
Bus Rapid Transit	Bus Rapid Transit (BRT) systems provide high quality bus service on busy urban corridors
Carsharing	Vehicle rental services that substitute for private vehicle ownership
Cycling Improvements	Strategies for improving bicycle transport
Flextime	Flexible daily work schedules
Guaranteed Ride Home	An occasional subsidized ride home for commuters who use alternative modes
Individual Actions for Efficient Transport	Actions that individuals can take to increase transport system efficiency
Nonmotorized Facility Management	Best practices for managing nonmotorized facilities such as walkways, sidewalks and paths
Nonmotorized Planning	Planning for walking, cycling, and their variants
Park & Ride	Providing convenient parking at transit and rideshare stations
Pedestrian Improvements	Strategies for improving walking conditions
Ridesharing	Encouraging carpooling and vanpooling
Shuttle Services	Shuttle buses, jitneys and free transit zones
Taxi Service Improvements	Strategies for improving taxi services
Telework (Telecommuting, Distance-Learning, etc.)	Use of telecommunications as a substitute for physical travel
Traffic Calming	Roadway designs that reduce vehicle traffic speeds and volumes

Source: Victoria Transport Institute



C. Make Transportation Corridors Multi-Modal

Transportation and land use strategies to reduce the need to drive are a cornerstone of the County's energy conservation and emissions reduction plans. Although improvements in fuel and vehicle technology can help, land use and transportation planning that reduces vehicle demand is crucial and can be accomplished at the local level. Reducing vehicle miles traveled is a part of the County's strategy to address climate change. Transportation funds will be allocated based on consistency with the Future Land Use Plan.

The needs of bicyclists and pedestrians can be met by incorporating bicycle lanes and sidewalks into both roadway and transit projects. Bicycle and pedestrian needs should be considered at the earliest stages of transportation project development to ensure the appropriate accommodation of those needs. Street systems for designated Places should incorporate development patterns that maximize connectivity, convenience, safety and efficiency for pedestrians and bicyclists.

Connections between all modes and systems are paramount to an efficient transportation system.

While conserving energy, Places also support equal access to jobs and services in a way that most contemporary development does not.

D. Provide Incentives to Develop Certified Green Buildings and Use Alternative Fuels and Renewable Energy

Educating the public, including public officials, about the benefits of green building, energy conservation and sustainable development is essential for Plan implementation.

Many people are still most familiar with traditional suburban development where zoning separates different land uses, and residential development is primarily single-family detached houses on large lots. If developers fear there will be no market for non-traditional development, choices for consumers will remain limited. Public officials, consumers and developers may have misconceptions that green building and sustainable development costs more than

traditional development. Local officials may be fearful they will discourage development in their communities if existing land use regulations are changed and different requirements added. Ultimately, education is the key to ensuring more widespread use and acceptance of sustainable development practices.

Saving Energy through Green Buildings

Allegheny Places promotes energy efficient, green building design. According to a May 2007 summary report by the Intergovernmental Panel on Climate Change, more energy efficient buildings could avert 30% of projected greenhouse gas emissions by 2030. Energy efficiency can be achieved through:

- Improved insulation
- Alternative refrigeration fluids
- More efficient appliances
- Solar technology
- Intelligent energy meters that provide feedback on use
- Green building
- Site design (landscaping and siting of buildings)

To be consistent with *Allegheny Places*, development that is funded wholly or partly with public funds must incorporate energy efficiency into building and site design.

One resource for information is Affordable Comfort, Inc., a southwestern Pennsylvania-based nonprofit organization dedicated to making homes more energy efficient. The organization's vision is that every family has a green home that is energy efficient, durable, comfortable, healthy and safe, and every community has access to and values skilled home performance services. Toward this end, they provide training to building and housing professionals to advance home performance (www.affordablecomfort.org).

Municipalities should update their zoning and subdivision ordinances to allow for site design that increases energy efficiency. Providing for solar access should also be addressed, as provided for by the Municipalities Planning Code. Improvements in solar technology are making its use more feasible in places like western Pennsylvania.

Sustainable Development

An even more holistic approach to energy savings can be achieved by applying LEED to neighborhood design. The LEED for Neighborhood Development Rating System, currently a pilot program, integrates the principles of smart growth, urbanism and green building into the first national standard for neighborhood design. LEED certification provides independent, third-party verification that a development's location and design meet accepted high standards for environmentally responsible, sustainable development.

Allegheny County is fortunate to have a number of organizations such as the Green Building Alliance, Sustainable Pittsburgh, and the Local Government Academy that provide information about and training in sustainable development practices. The County will continue to work with these groups and others to promote the importance of green building, energy conserving and sustainable development to area residents, business owners and developers.

Financing and Grants

There is funding available that fosters the use of renewable energy and reduces overall energy usage in Pennsylvania:

- **The Alternative Fuels Incentive Grant (AFIG) Program** – was established in 1992 under Act 166. Act 178 was passed in 2004, resulting in new programs designed to stimulate the production and use of biodiesel and ethanol in the state. Grants are available to school districts, municipal authorities, political subdivisions, nonprofit entities, corporations, limited liability companies or partnerships incorporated or registered in the Commonwealth for the deployment of fuel saving vehicles, fleets and technologies. The fuels supported by this program include mixtures of 85% ethanol 15% gasoline (E85); liquid or compressed natural gas, liquid propane, hydrogen, coal-derived liquid fuel; electricity and biodiesel/diesel blends as well as other potential R&D fuels.
- **The Pennsylvania Energy Development Authority (PEDA)** – is an independent public financing authority. The Authority's mission is to provide tax-free bond financing for projects that develop, promote and more efficiently use alternative energy resources indigenous to the state.
- **The Pennsylvania Energy Harvest Grant Program** – is a new state initiative to advance the deployment of clean energy technologies, lessen the nation's dependence on foreign fuels, and significantly reduce air and water pollution. Funded projects must simultaneously reduce or supplement the use of conventional energy sources and lead to improvements in air and water quality.

