Green Guide for Businesses
Strategy: Transportation

Use and Encourage Non-Motorized Transport (NMT)

Fast Facts-

- Motorized transport is expensive and inefficient over short distances and is a major contributor to carbon emissions? (Balsas, 2002).
- NMT is the most flexible and affordable form of transportation (Woodinville, 2005).
- NMT preserves open green spaces, wildlife habitats, and cultural resources such as historic buildings (Woodinville, 2005).
- NMT reduces costs associated with car purchases, driving delays and parking (SACOG, 2005).
- Creating accessible, well-connected non-motorized facilities where public activities are encouraged improves safety, neighborhood interaction, and community cohesion (SACOG, 2005).
- NMT may attract businesses and new skills to an area, including tourism, due to improved environmental quality (Woodinville, 2005).
- Greenways provides access to green spaces and opportunities to expand recreational opportunities for walking, jogging, biking, and skating (NYCGOVPARKS, 2008).
- In medium-sized cities in Japan, Germany and the Netherlands, 40-60 percent of all trips are made by walking and cycling (Guitink et al. 1994).
- Roadway intersections pose the greatest danger to cyclists (SACOG, 2005).
- Traffic control measures should be implemented to warn both drivers and bicyclists of the oncoming intersection for safe crossing of the intersection (SACOG, 2005).
- Public schools in Marin County, CA, that participated in the Safe Routes to Schools program saw increases in walking, carpooling and biking to school of from 64% to 114%, respectively (Staunton et al. 2003).

Actions for Businesses:
Provide programs for citizens to buy, rent, swap or share bicycles.
Develop bicycle and walking routes to common regional destinations, public parks and natural areas.
Conduct public awareness campaigns to popularize NMT
Provide safe and convenient parking for bicycles.
Encourage use of bicycles through public awareness and safety campaigns.
Address barriers to using bicycles by:
Provide safe and convenient parking for bicycles.
Provide information for bike users, including:
Road safety information, such as use of road signs and hand signals.
Safety tips for bike users such as on use of helmets.
Basic tips on bike repairs and maintenance.
Address safety issues for bicycle riders and walkers by:
In partnership with manufacturers, provide bike guarantees to customers and after-sales services.
Sell bike accessories such as horns, bells, reflectors, pumps and carriers.
Form community groups to develop NMT routes in your area,

Resources:

Greenways-
Greenways, Inc. - http://www.greenways.com/
Knoxville, Tennessee. http://www.ci.knoxville.tn.us/greenways/
Greenways Initiative, southeastern Michigan - http://greenways.cfsem.org/
Bicycling and Greenways, New York City - http://www.nycgovparks.org/facilities/bikeways

General information on non-motorized transport-
City of Woodville, WA, Non-Motorized Transit Plan - http://www.ci.woodinville.wa.us/Live/NonMotorizedTransportation.asp (
The World Bank - http://www.worldbank.org/html/fpd/transport/publicat/td-ut4.htm
Rideshare Program that Works - http://www.worldchanging.com/archives/009168.html

Bicycle safety-
National Highway Traffic Safety Administration - http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.810acaee50c651189ca8e410dba046a0/
How not to get hit by cars - http://bicyclesafe.com/
Ohio Bicycle Federation - http://www.ohiobike.org/resources.htm
Bike Miami Valley - http://www.bikemiamivalley.org/safety.htm
Cincinnati Children's Hospital - http://www.cincinnatichildrens.org/svc/alpha/r/bike-helmet/community/ed.htm

Regional planning for NMT - OKI
Tri-State Bicycle Facilities - http://www.oki.org/transportation/bike/tristate_bike.html
Regional Pedestrian Plan - http://www.oki.org/transportation/pedestrianplan.html

Transportation (automobiles)

Fast Facts-

- Transportation consumes 70% of the nation's oil and generates 1/3 of the nation's carbon emissions (Lovins 2005).
- In 2004, U.S. cars and light trucks emitted 314 million metric tons of carbon dioxide (DiCicco and Fung, 2006).
- The United States has 5% of the world's population and 30% of the world's automobiles, but it contributes 45% of the world's automotive CO_2 emissions (DiCicco and Fung, 2006).
- Total vehicle miles traveled by U.S. cars and light trucks in 2004 amounted to 2.6 trillion miles (DiCicco and Fung, 2006 automobile).
- The fuel economy of the U.S. stock averaged 19.6 mpg in 2004, implying an average fuel use rate of 51 gallons per 1,000 miles of driving (DiCicco and Fung, 2006).
- Each gallon of gasoline saved keeps 5.3 pounds of carbon from being emitted into the atmosphere (DiCicco and Fung, 2006).
- Using biodiesel blends can reduce carbon emissions from 7% to 44 % and particulate matter from 19% to 68% (Schumacher, 1995).
- Emissions of CO_2 for one person traveling 40 miles by car to work, round trip travel per is 0.9207 tons per month (Sustainable Travel International, 2008).
- The average 2005 passenger car cost 31 cents per miles in fuel, maintenance, and depreciation to drive (Environmental Defense Fund, 2008).

Actions for Businesses:
Consider 4-day work week to reduce worker transportation
Shut automobiles off when stopped to reduce idling time.
Reduce use of air conditioning and other features that increase fuel use.
Keep tires inflated to proper pressure to reduce fuel consumption.
Reduce the weight of things transported in vehicle; don't carry unnecessary items.
When replacing an automobile, replace with a hybrid, fuel-efficient, alternative fuel, or at least smaller vehicle.
Purchase E-85 fuel instead of regular gasoline and biodiesel fuel blends instead of petrodiesel.
Increase telecommuting, satellite offices and teleconferences.
Reduce number of trips; combine errands, shopping and work travel.
Encourage and use carpooling.

Resources:
Cool Counties Implementation Guide-
http://coolcities.us/resources/bestPracticeGuides/CoolCounties_ImplementationGuide.pdf
Biodiesel emissions data-http://web.missouri.edu/~schumacherl/Biodiesel_Emissions_Data_60_DDC.pdf
Biofuels reported to cut emissions by 94% in UK-http://www.biofuelreview.com/content/view/992/
Benefits of Carpooling
http://www.erideshare.com/?gclid=CMyD2cnRs5cCFQNHFQodyQtajACarSharing.net-
CarShare programs-
http://www.carsharing.net/aboutus.html
Carpooling in Cincinnati - http://www.erideshare.com/carpool.php?city=Cincinnati
Rideshare – regional - http://www.oki.org/commuter/rideshare.html
http://www.enquirer.com/editions/1999/07/01/loc_sharing_van_ride_now.html
Electric vehicles- EV World- http://www.evworld.com/
Green Car Congress- http://www.greencarcongress.com/about3.html

Mass Transit

Fast Facts-

- Public transportation reduces pollution and helps promote cleaner air.
- Energy-related CO_2 emissions represent 82% of total US human-made greenhouse emissions. Public transportation produces about half as much CO_2 per passenger mile as private vehicles. (Public Transportation: Wherever Life Takes You, 2008).
- Transit services benefits include:
    - Reducing road congestion,
    - Preserving communities because encourages members to stay near to transit instead of moving out and away from the community,
    - Improving the environment through less vehicles on the road and because it has the possibility to run on electricity which can come from alternative fuel sources,
    - Enhancing economy by creating jobs (GoRailGo, 2008).

Actions for Businesses:
Create attractive hubs and stations; possible amenities include indoor seating, bike racks, coffee shops, newsstands, and free wi-fi internet.
Encourage low-emission transport to and from transit hubs:
Increase parking availability at hubs.
Promote bicycle usage by providing lockers at hubs and ability to carry bikes on buses.
Promote bicycle rent/lease/share programs at hubs.
Promote benefits of mass transit with education and incentives, such as discounted fares for events and/or groups.

Resources:
General Sites
History and future plans of Cincinnati's transportation - http://www.cincinnati-transit.net/
Transportation-related issues in the Tristate - http://oki.org
Ohio public transportation systems -http://www.apta.com/links/state_local/oh.cfm

APTA – Does transit work? http://www.apta.com/research/info/online/weyrich2new.cfm

Smart Growth / Smart Energy Toolkit (Case studies – Transit Oriented Development [TOD])
http://www.mass.gov/envir/smart_growth_toolkit/index.html

Business benefits of mass transit for employees - http://www.transitcenter.com/.

Examples of successful public transit systems:

King County, Washington - http://transit.motrokc.gov/
Boston, Massachusetts - http://www.mbta.com

Cincinnati area mass transit-

GoMetro maps, timetables and info - http://www.go-metro.com/
Transit authority of northern Kentucky (TANK) maps, timetables and info http://www.tankbus.org/

Cincinnati Rideshare

http://www.erideshare.com/carpool.php?city=Cincinnati
http://www.rideshareohio.com/

Airports and Air Travel

Fast Facts

- Travel by air emits about ten times more carbon than travel by train.
  (The Independent, 2008)
- Traveling by air produces three times the carbon emissions as travelling by bus.
- Flying to Europe business class produces 1.5 times more CO_2 per person than flying by coach.
  (Stockholm Environment Institute, 2008)
- Emissions of CO_2 on a one-way flight (for 1 passenger) from Cincinnati to the following cities are:
  - To New York (JFK) (924 Km) 136.12 Kg of CO_2
  - To Chicago, IL (ORD) (824 Km) 81.44 Kg of CO_2
  - To Miami, FL (MIA) (1,534 Km 200.42 Kg of CO_2
  - To Nassau, Bahamas (1,698 Km) 210.81 Kg of CO_2

  (International Civil Aviation Organization, 2008)
- US airlines reduced 2.5 billion metric tons of CO_2 from 1978 to 2007; that's the equivalent of taking 18.7 million cars off the road over 29 years.
  (Environmental Leader, 2008)
- Air freight uses more fuel to transport the same amount of cargo as a ship or train.
- 200 liters (52.8 gallons) of fuel can transport a standard shipping container 3,300 miles by ship, 850 miles by train, 300 miles by truck, and only 32 miles by air freight.
  (Berkin, Samuel. 2003)

Actions for Businesses:
Use video conferences, email and phones.
Take the train or bus.
Use the most direct route as possible.
Fly economy instead of business class.
Buy carbon offset.
Encourage staff to use reusable coffee mugs in airport lounges.
Require more energy efficient planes
Retrofit planes to make them more energy efficient.
Adopt Green Airport Initiative. (Clean Airports Partnership)
Seek federal funding to help reduce CO_2 emissions at local airports. (eg. VALE)
Purchase energy efficient (green) vehicles for ground transportation to and from airports.