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BICYCLE PROGRAMS

Description:

Over the past century, people have depended on personal automobiles at an increasing rate, fostering an environment with fewer transit options and more automobile-centered transportation and land-use policies. This mutually reinforcing cycle of increasing dependence on automobile use in communities throughout the United States has raised issues of urban sprawl, air quality, public health, and aesthetic appeal.

In response, the Federal government, national organizations, and numerous cities in the United States are taking actions to reduce auto travel in favor of biking. The Wall Street Journal reported that over 80 percent of American cities surveyed in 2004 indicated plans to construct new bikeways.[1] Promoting this trend, the League of American Bicyclists awards platinum, gold, silver, and bronze distinctions twice every year to communities "that have made impressive, measurable efforts to integrate bicyclists into the community."

The U.S. Department of Transportation and the Centers for Disease Prevention and Control promote "active transport" through cycling, an effort that looks to combat the obesity epidemic. The Federal Highway Administration (FHA) has provided $25M each to Columbia, Missouri; Marin County, California; Minneapolis-St. Paul, Minnesota; and Sheboygan County, Wisconsin, to exhibit the degree to which biking and walking can make up a large part of the transportation load. For example, the "GetAbout Columbia" program in Missouri, which was devised to increase options for safe and enjoyable downtown travel, is in the midst of constructing 125 miles of new bikeways and sidewalks and seeks to add 66 more miles of streets with striped bike lanes, 23 miles of streets with marked bike routes, 19 miles of paths and trails, and 900 new bicycle parking spots in the downtown area. The FHA hopes that by promoting bicycling in these cities, it will prove that bikes are a critical part of the transportation solution.

Community leaders note that the growing trend to limit reliance on automobiles in favor of bicycles has implications for the environment, health, and transportation-efficiency; and most bicycle programs highlight similar advantages gained when biking is acknowledged as a major part of a transportation system:

- Livability (quality of life) of neighborhoods, including both health and social aspects
- Economic benefits for both families and communities
- Energy savings
- Less pollution
- A cultural shift to reduced loyalties to the automobile

Portland, Oregon, continues to come out on top in “bike-friendly” community rankings—receiving the League of American Bicyclists' designation as a Platinum city, and intending to make cycling an essential, "main pillar" of the city's transportation system and sustainable green economy by 2030. Seeking to make biking available as an alternative to driving for *all* members of the community, Portland's bicycle network has grown from 60 to 260 miles since the early 1990s—connecting all parts of the city. Its “create-a-commuter” program provides low-income adults with commuter bicycles donated by people in the community, as well as with amenities and tools for safe and comfortable riding year-round. Portland’s goal is to have over a quarter of all trips made on bicycles.

The measurement of bicycle-use provides evidence of the growing attention to the use of biking as a major transit alternative. For example, statistics released in 2007 by the United States Census Bureau reveal that cycling in Portland accounts for a 3.5 per cent of the transportation populace, 2.4 per cent in Minneapolis, 1.9 per cent in San Francisco, 1.7 per cent in Washington, DC, and .7 per cent in Chicago. Though New York City has a current biking share of 0.5 percent, the City plans to substantially increase cycling amenities and bike parking, as well as developing cycling training, traffic safety, and promotional programs.

Boulder, Colorado, which received a League of American Bicyclists designation, has a public program that strives to make cycling a major means of transportation—making bike maps available on the web, promoting bicycle transportation through education, and emphasizing bike safety. Approximately 95 percent of the main roads in Boulder have bike trails or painted bike lanes, and the City also holds a “Bike to Work Day.”[2]

A smaller League-designated city is Davis, California, which has a network of bike lanes, bike paths, and grade-separated bicycle crossings, and where approximately 17 per cent of its residents commute to work on bicycles.[3] Davis has more bikes than cars and has built several bike-only tunnels under major roads so that cyclists can make safe trips, avoiding traffic. The University of California, Davis, has also taken part in the community bicycle effort, banning almost all car traffic.

Bicycle Programs are found throughout the world. Countries and cities that support infrastructure giving preference to bicycle uses (such as bike lanes, wide-ranging services, and bike racks) are more developed in Asian and European countries than in North America. Denmark, The Netherlands, and Germany have strong bicycle cultures—for example, approximately 33 per cent of citizens in Copenhagen and 40 per cent in Amsterdam use bicycles as transportation.[4]

Amsterdam is perhaps the most active cycling city in the world. Biking is at the core of its transportation infrastructure and is aimed at a healthier and more fit way of life. It has created a widespread network of safe routes and has developed a plan to build a 10,000-bike parking garage. People in Amsterdam also have the option of renting public bicycles and parking in underground sheds and outdoor racks. China has been working toward a more distinctive mode of biking. Cities in

China were once crowded with bicycles but have since become much more dependent on the automobile. However, the Chinese government made electric bicycles (e-bikes) a major goal in 1991 due to traffic congestion, and a trend toward the use of e-bikes has grown to be increasingly popular with Chinese citizens, especially in Beijing and Shanghai. In 2008, China's residents purchased 21 million e-bikes, and the country now has extensive bicycle lanes that help citizens avoid rush-hour traffic.

An analysis of data from the U.S. Census Bureau[5] reveals that bicycle users in the United States are typically young, low-income commuters who do not own an automobile and older (forty five and older), more wealthy commuters who own a car but elect to cycle to work. Males make up about 80 per cent of all bicycle commuters, and females use a bicycle to commute less often as they age. Latinos, American Indians, and Asians are more likely than Whites and Blacks to commute by bicycle.

References:

[1] *Wall Street Journal* (2004), "To Encourage Biking, Cities Add Paths, Racks and Lockers; To Shower or Not to Shower?" http://online.wsj.com/article/SB114730873238949725.html.

[2] Boulder, Colorado ranks as one of the best cities for cycling: http://www.bouldercolorado.gov/index.php?option=com_content&task=view&id=8839&Itemid=3278;
Boulder B-Cycle: bike share program: http://boulder.bcycle.com/;
http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=8843&Itemid=3251;
GoBikeBoulder.net:
http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=8840&Itemid=3245;
http://www.bouldercolorado.gov/index.php?option=com_content&task=view&id=3413&Itemid=1781.

[3] City of Davis Public Works Department and City of Davis Bicycle Advisory Commission (2006), "City of Davis Comprehensive Bicycle Plan." http://cityofdavis.org/pw/pdfs/2006_BikePlan_withMaps.pdf.

[4] *Wall Street Journal* (2007), "Building a Better Bike Lane: Bike-friendly cities in Europe are launching a new attack on car culture. Can the U.S. catch up?" http://marinbike.org/News/Articles/BuildingaBetterBikeLane.pdf.

[5] Steven G. Goodridge (2001), "Land-Use, Climatic, Demographic, and Cultural Issues Affecting Utilitarian Bicycle Travel in the Triangle." http://www.humantransport.org/bicycledriving/cyclinguse.htm.

Benefits:

- *Economy*

- Bicycle transportation has a positive impact on real estate values and adjacent businesses.
- Bike trails tend to increase revenue by way of higher property values. For example, according to the Wisconsin Department of Transportation: houses by a nearby bike trail in Wisconsin sold for nine per cent more than similar properties farther away; and businesses close to the Fox River bike trail revealed a 39 per cent increase in business. In a 2002 survey of new home buyers by the National Association of Realtors and the National Association of Homebuilders, trails were the second most important feature on a list of eighteen choices.
- Bicycles play a huge role in tourism; for example:
  - Across the country, over 27 million travelers have taken biking vacations in the last five years.
  - The total annual economic impact of bicycle tourism is $66.8M in Maine and $193M in Colorado.
  - The Outer Banks of North Carolina found that 17 percent of annual visitors to the area (680,000 people) reported bicycling while there. The study estimated that over $60M per year was spent by those bicyclists and that 1,400 jobs were created.

- *Cost savings*
  - Using a bicycle as significant mode of transportation cuts cost on gasoline and auto repairs. It costs an individual approximately $4,000 per year to own an automobile compared to $400 per year to own a bicycle.
  - A car commuter could save four hundred gallons of gas every year by giving up a car for a bicycle.
  - Bicycle commuting promotes improved heart and lung function which, in turn, can result in less sick time and fewer days missed at work.

- *Environment*
  - Biking, as a transit alternative, saves the use of fossil fuels and reduces air pollution:
    - According to the United States Environmental Protection Agency, the average passenger vehicle creates 5.20 metric tons of carbon dioxide every year.
    - The U. S. Department of Energy notes that about 50 per cent of all air pollutants and 80 per cent of air pollution in urban areas are due to cars and trucks.
    - Americans use 2.3 billion gallons of gasoline every year idling in traffic.
    - In the San Francisco Bay area alone, automobiles are responsible for 75 per cent of smog and 50 per cent of all greenhouse gasses.
    - The National Highway Traffic Safety Administration notes that if ten commuter cars were replaced by bikes or walking, 25.4 million tons of carbon dioxide emissions could be reduced every year.
    - It is estimated that about 90 per cent of emissions are created in seven-mile journeys—before the motor engine heats up.

- Around 40 per cent of the trips taken in the United States are two miles or less and more than 25 per cent of all trips are under a mile.
- The WorldWatch Institute reports that a four mile round-trip bicycle ride prevents about fifteen pounds of pollutants from entering the air.

- *Livable Communities*
  - Bicycle initiatives advance the goal of creating livable communities—playing a role in furthering community design and its bearing on social, physical, and economic well-being. The Obama administration's urban policy agenda has made fostering livable communities an important goal.
  - A priority of the U.S. Transportation Department is to provide safer, more livable communities by promoting cycling in place of driving. Planners and engineers in communities around the country are being urged to keep all transit users (including bicyclists and walkers) in mind when designing and operating roads and streets.
  - Communities with a robust bicycle culture have strong communities where residents take an active interest in the well-being of their neighborhoods and citizens. For example, Portland's Community Cycling Center notes that "the bicycle is a tool for empowerment and a vehicle for change." Towns and cities can promote community-building and personal empowerment by creating a more personal and sociable environment where individuals can interact with one another and participate in efforts that benefit the community.
  - By encouraging bicycles, cities and towns can conserve roadway and constrained space, lending to a more efficient and safe community as well as an aesthetically pleasing one. Greater use of cycling also reduces the noise, speed, and stress of automobiles and eliminates some of the need to construct and repair cars and roadways.

- *Health and Quality of Life*
  - Bicycling has a positive impact in reducing the risk for coronary heart disease, stroke, and other diseases; therefore, a community with a strong bicycle culture will decrease its visits to healthcare facilities, lowering health care costs.
  - According to the Sacramento Transportation Management Association, bicycle commuters get to work on time more often and have less stress.

Barriers or impediments to development or implementation:

- *Safety*
  - Busy, bumpy, or unrepaired roads can prove dangerous for some riders, especially inexperienced cyclers or those with less agility.
  - While bicycle programs throughout the United States are promoting bicycle-friendly roads to create a safe riding experience, many cities in the United States still have a long way to go in implementing bicycling facilities that are meant to prevent accidents and injuries.

- *Weather*
  - A frequent concern of bicycling transportation is unexpected weather conditions, which can make riding inconvenient and problematic. The strongest bicycle programs are currently located in the mountain and western states where temperatures are consistently mild throughout the year. Riding in harsh winter conditions can put the rider at risk and poses an issue of discomfort when riding through frigid temperatures.

- *Hygiene*
  - Since bicycle-riding requires some physical effort, sweating and body odor are issues, especially for bicyclists commuting to work. Unavailability of facilities for changing clothes and showering can be problem; while some workplaces have showers on the premises, many do not. To combat this issue, cities such as Portland are implementing bike stations where cyclists can stop and shower before work. In addition, clothing designed for hygienic cycling is available.

Resource—laws:

- New York State:
  - *Planning and Policy Models for Pedestrian and Bicycle Friendly Communities in New York State*, a 2007 report published by the Initiative for Healthy Infrastructure at the University at Albany, State University of New York, provides a significant discussion on zoning codes that support bicycling, and proposes some recommendations. It also highlights a new model called "Transit Zoning," which builds upon a paradigm based on "non-automobile-dependent land-use patterns" put forth by Onondaga County, New York, in 2000: http://www.albany.edu/ihi/files/NY_Planning_And_Policy_Models_iHi.pdf.

- New York City:
  - The *Bicycle Access to Office Building Law*, which went into effect in 2009, was developed to increase bicycle commuting by giving bicyclists the "opportunity to park their bicycles in or close to their workplaces." The law states that commercial buildings are to provide the opportunity for bicycle commuters to bring their bicycles into a commercial building if the space is able to be provided by their employers: http://www.nyc.gov/html/dot/html/bicyclists/bikemain.shtml.
  - The *Bicycle Access to Garages Law* became effective in 2009 and requires certain owners of parking garages to provide parking spaces for bikers: http://www.nyc.gov/html/dob/html/sustainability/bicycle_access.shtml.

- United States Department of Transportation:
  - *Intermodal Surface Transportation Efficiency Act* (ISTEA), 1991, sought to increase attention on transportation planning and policy. By creating planning requirements and delegating power to metropolitan planning organizations, many cities were able to strengthen or implement bicycle programs: http://ntl.bts.gov/DOCS/ste.html.
  - *Transportation Equity Act* (TEA-21), 1998, provided over $200B to enhance the country's transportation infrastructure as a means of improving the economic climate and protecting the environment. The Act allows cities to revitalize its communities through development of transportation alternatives: http://www.fhwa.dot.gov/tea21/.
  - *Safe, Accountable, Flexible, Efficient Transportation Equity Act* (SAFETEA), 2005, expired on September 30, 2009; but is expected to be updated and replaced by Congress during its 2009 session. The bill guarantees funding for highways, highway safety, and public transportation at $286.4B over six years. The Act seeks to improve and sustain surface transportation infrastructure, including bicycling facilities: http://www.fhwa.dot.gov/safetealu/.

- Portland, Oregon:
  - *City of Portland, Title 16,* includes regulations for bicycles and riders in regards to traffic regulation, rules for operating bikes in the city, renting bicycles, and rules that allow the city to impound a bicycle: http://www.portlandonline.com/Transportation/index.cfm?a=71947&c=34814.

- Davis, California:
  - The City of Davis' Web site includes a list of laws and city codes regarding bicycles: http://cityofdavis.org/cmo/citycode/chapter.cfm?chapter=6.

- Boulder, Colorado:
  - *Bicycle Policy Statements:* http://www.bouldercolorado.gov/files/Transportation_Master_Plan/Chapter6_2.pdf.

- Google:
  - A search for "bicycle laws" in Google will provide many search results for laws and bicycle programs in the United States and other countries.

Resource—written and web:

- J. Harry Wray (2008), *Pedal Power: The Quiet Rise of the Bicycle in American Public Life.* Boulder, Colorado: Paradigm Publishers.

- *Urban Bikeway Design Guide,* Washington, DC: National Association of Transportation Officials. Provides state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for bicyclists. http://nacto.org/cities-for-cycling/design-guide/.

- *Bicycle Program,* Portland, Oregon:
  - The City of Portland's Office of Transportation provides extensive information about its active bicycle program, with links to bicycle maps, parking resources and organizations, bike laws, bike maintenance and safety, bikeway signing, and presentations regarding various issues related to cycling: http://www.portlandonline.com/transportation/index.cfm?c=34772.
  - This office also includes a link to its *Senior Cyclist Program*, a "three-wheeled" bicycle program that helps seniors who are considering bicycling for the first time or getting back into the habit. Bicycle classes are free and take place at the Willamette Greenway Trail in Southwest Portland. Contact: Kristine Canham, Senior Recreation Coordinator for Parks, 503-823-4328. http://www.portlandonline.com/transportation/index.cfm?a=155167&c=37401.

- Federal Highway Administration, U.S. Department of Transportation:
  - *Bicycle and Pedestrian Program,* which is an effort to promote safe and accessible bicycle-use as a means for transportation. Their Web site includes information on federal funding sources, legislation, and reports on bicycling: http://www.fhwa.dot.gov/environment/bikeped/.
  - *Non-motorized Transportation Pilot Program* (NTTP), which provides $25M each year to four communities. The current cities involved are: Columbia, MO; Marin County, CA; Minneapolis, MN; and Sheboygan County, WI. The goal of this program is to understand how instituting walking and "bicycling networks" can increase cycling and walking as viable means of transportation: http://www.fhwa.dot.gov/environment/bikeped/ntpp.htm.

- U.S. Department of Transportation: www.dot.gov/.

- Pedestrian and Bicycle Information Center (PBIC) provides information regarding health, safety, advocacy, education, and "mobility for pedestrians (including transit users) and bicyclists." The Center serves an advocacy and information source for people interested in bicycle issues, planners, engineers, educators, etc.: http://www.bicyclinginfo.org/.

- "A Case for Bicycle Commuting," published by "Do It Green! Minnesota," highlights the benefits of bicycle commuting for citizens and communities. This publication includes a cost-comparison of commuting options, with charts, purported

disadvantages of bicycle commuting, bicycle laws, and a bicycle resource list: http://www.doitgreen.org/article/transportation/bicycle.

- "Quantifying the Benefits of Non-motorized Transportation for Achieving Mobility Management Objectives," a paper published by the Victoria Transport Policy Institute, presents an extensive overview of non-motorized travel with an emphasis on cycling and its benefits in reducing congestion, road and facility cost-savings, consumer savings, and environmental and social advantages. The paper also discusses strategies that can encourage cycling and notes that the benefits of cycling can be furthered by implementing "cost- effective incentives": www.vtpi.org/nmt-tdm.pdf.

- William E. Moritz, Ph.D. (1997). "A Survey of North American Bicycle Commuters," *Bicycling Life.* This article discusses the results of a study that surveyed bicycle commuters in the United States and Canada. It outlines demographics, distance of trips, costs, bicycle type, facilities used, safety and crash experiences, and innovations for bicycle commuting: http://www.bicyclinglife.com/Library/Moritz1.htm.

- Austin Ramzy (June 14, 2009). "On the Streets of China, Electric Bikes Are Swarming," *Time Magazine.* Article on China's e-bike phenomenon: www.time.com/time/world/article/0,8599,1904334,00.html.

- Cherise Fond (April 2009). "City bike-sharing picks up speed," *Eco Solutions, CNN.com/technology*. This article provides an overview of public bike–sharing programs around the country and its trends: http://edition.cnn.com/2009/TECH/04/15/eco.bikeshare/index.html.