



**Community
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Center**

Understanding Barriers to Bicycling Transportation Literature Review

A Project of the Community Cycling Center

Funded by Metro
With support from Alta Planning + Design

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Literature Review: Transportation Studies Related to Communities of Color

Introduction and Goals

The purpose of this literature review is to build upon existing research done by the Community Cycling Center in order to inform strategies for the *Understanding Barriers to Bicycling* project. Through an investigation of academic research, government studies and reports of community programs, this review identifies challenges to women, low-income, minority and immigrant communities in obtaining safe, healthy, affordable and convenient transportation options. Where possible, successful strategies to overcoming these challenges have also been identified. Some of these areas are well-studied, while others are just beginning to be explored. This report will establish a base of information to design a successful *Understanding Barriers to Bicycling* program and also highlight in what ways the program may be among the first of its kind. This is not a complete documentation of all information currently available. Instead, it provides a reasonable sample of what types of resources are available and which others may be difficult to obtain.

Methodology

Several different sources were used to collect the information presented in this literature review:

- Direct contact with persons and programs known to Alta Planning + Design to have previously done work or research in the field of promoting bicycle use among women, low-income, minority and immigrant communities
- Email solicitation of information from professional planners via the Association of Pedestrians and Bicycle Professionals listserv
- A basic internet search for related terms
- A search of bicycle and transportation research libraries, including BicyclingInfo.org and the Transportation Research Board's Transportation Research Information Services search tool (TRIS)
- A search of electronic journals and databases for related fields including transportation, social services, urban studies and planning and public health

When collecting information, a preference was given to published, peer-reviewed or state-commissioned studies and papers available at no cost.

Summary of Studies

Sunday Parkways: Helping Minority Communities Connect to Bicycling and Walking

- Link (write-up): <http://www.bicyclinginfo.org/library/details.cfm?id=4349>
- Link (program website): http://www.biketraffic.org/content.php?id=1550_0_8_0

Profiles a 2008 pilot program in Chicago targeted at increasing bicycling, walking and physical activity in African-American and Latino communities. Includes documentation of strategies used to

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overcome barriers to bicycling and walking including language and perceptions of health and safety. Contact information is available for the program, which will continue in 2009.

Final Detailed Findings Report for Marketing Plan and Outreach Materials that Promote Pedestrian and Bicyclist Safety to Different Hispanic Populations in the United States [literature review]

Promoting Pedestrian and Bicyclist Safety to Hispanic Audiences [final report]

- Link (literature review): http://safety.fhwa.dot.gov/ped_bike/docs/sa06ba030/index.htm
- Link (final report): http://safety.fhwa.dot.gov/ped_bike/toc.htm

In response to the disproportionate rate of traffic injuries and fatalities to Hispanics compared to the general population, the Federal Highway Administration (FHWA) commissioned these reports in 2005. The literature review addresses bicycle and pedestrian safety through the lens of documenting programs and information campaigns that discouraged dangerous driving behaviors. The final marketing guide includes sample outreach materials developed with feedback from focus groups.

The main focus of both papers is to discourage dangerous behaviors such as walking/bicycling/driving under the influence of alcohol, and to promote awareness of general traffic laws such as yielding to pedestrians. Bicycling encouragement programs, bicycle-specific traffic laws and similar topics are not addressed. However, detailed, culturally-specific strategies on how to organize media campaigns and compose outreach materials are included, and could be invaluable when designing a promotion for the Hispanic community.

Socioeconomics of Urban Travel

- Link: <http://nhts.ornl.gov/2001/articles/socioeconomicsOfUrbanTravel.pdf>

An analysis of travel patterns derived from the 2001 National Household Travel Survey (NHTS). It shows how travel patterns differ between sexes, racial/ethnic groups and income levels, and lays out theories on what factors may be underlying these differences. Bicycle and pedestrian transportation are mentioned, but are generally grouped with transit.

Mobility Needs of Low Income and Minority Households Research Study

- Link: <http://www.dot.state.co.us/publications/PDFFiles/lowincome.pdf>

A study commissioned by the Colorado Department of Transportation in 2006, it includes a literature review that documents mobility issues facing mothers and working women. The study conducted several focus groups, findings from which may reveal transportation obstacles specifically facing low-income and non-English speaking people in the US, though findings regarding pedestrian and bicycle use may be location-specific and focus on infrastructure rather than education or encouragement programs.

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Is it Safe to Walk? Neighborhood Safety and Security Considerations and Their Effects on Walking

- Link (abstract only): <http://jpl.sagepub.com/cgi/content/abstract/20/3/219>

This paper discusses findings on how the perception of risk and danger affects women's patterns of physical activity in their neighborhoods. It may be useful in understanding how to mitigate these factors as a barrier to bicycling, in addition to the factors of bicycle infrastructure and perceptions of traffic safety that are more commonly associated with bicycling.

Research on Women's Issues in Transportation

- Link: <http://onlinepubs.trb.org/onlinepubs/conf/CP35v2.pdf>

This is a collection of studies from a conference held by the Transportation Research Board, many of which may be helpful in understanding barriers to women bicycling. One paper documents the difference between men and women in trip-chaining behavior, which may reveal how bicycling could be adapted to better serve the needs of women who need to transport children or make multiple stops on a trip. Another discusses the difference in preference for different types of bicycle facilities for men and women. Another analyzes the fear of crime as an obstacle to women walking, which may also be a barrier to bicycling. Other studies document the difference in travel needs depending on whether men or women work, and what role they serve in their household. This represents the largest single body of information on factors that may influence women's ability or inclination to bicycle.

Professional Assessment of Minority Barriers

We contacted several professionals with experience on what barriers low-income, women and minority communities face regarding bicycle use. They shared some of their research findings, as well as impressions accumulated during community involvement meetings and their own work. In conducting a literature review for the Bike Walk Ambassador Program, David Peterson with the City of Minneapolis Department of Public Works encountered many of the same findings revealed in this paper. He shared that neighborhood conditions, like having many unattended dogs, can contribute to negative perceptions of safety that discourage people from biking and walking. He also said that some neighborhoods may lack nearby destinations, which is an obstacle because biking and walking are targeted at replacing shorter trips. Some low-income people may simply lack the funds to own a bicycle. People who must work more than one job might be too tired to exercise or ride a bicycle, and those who work at night may have concerns about riding in the dark or finding a secure parking location for their bicycle.

Eric Anderson, Bicycle Coordinator for Berkeley, California with 10 years of experience in the bicycle and pedestrian field shared some of his conclusions on minority barriers to bicycling. Mr. Anderson pointed to language as a barrier to bicycling, as some informational resources commonly available in English often aren't distributed in other languages. Translating materials on basic traffic laws applying to bicycles, helmet safety, simple maintenance tasks, and bicycle maps may help disseminate the baseline information people need before attempting to bicycle. He also mentioned

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financial obstacles, such as the cost of keeping a bicycle in repair, owning a good lock and the purchase of a helmet and lights in order to ride safely.

Michelle Kunec, a City Planner with the Portland Bureau of Planning and Sustainability, offered some resources specific to Portland. A member of the Portland Bicycle Master Plan update Technical Advisory Committee on Equity, she mentioned that the city is turning more attention to the importance of providing more opportunities for bicycling to the low-income, women and minority communities. She recommended contacting Stephanie Stephens or Cassie Cohen with the Vision into Action program in the Bureau of Planning and Sustainability for advice and local contacts that may be good entry points for marketing to minority communities specific to Portland.

Limitations of Existing Research

In conducting this literature review, we found that little to no research exists on how to market bicycle transportation to low-income, women or minority communities. Several programs are just beginning to take on this task, including the Sunday Parkways program by the Active Transportation Alliance in Chicago, and the Walk Bike Ambassador program in Minneapolis. If other organizations have already attempted similar projects, they are not widely documented.

We found published studies or program findings in the following areas to be lacking:

- Marketing and promotional strategies for bicycling, other than safety issues
- Results of programs promoting bicycle use to adults
- Transportation issues facing African-Americans, outside of transit policy
 - Transportation issues facing Asian-Americans, if any
 - How or if language may be a barrier to transportation

There exists a body of research on related topics that, taken as a whole, may contribute to a deeper understanding of barriers that prevent more minorities, low-income people or women from riding bicycles.

Information is readily available on the following topics:

- Bicycle helmet use, especially in children
- Risk and safety behaviors in children regarding walking and bicycling
- Safe Routes to School
- Mobility issues for the elderly, especially regarding walking and driving
- Barriers to bicycling in terms of the availability of bicycle facilities
- Transportation affordability for low-income people, especially in regard to automobile use
- Transit policy, and how it affects transportation issues facing low-income people

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- Promoting bicycling to women as an economic development tool in Africa
- Perceptions of safety and security for women and the elderly regarding walking
- The effects of walking and bicycling on public health

Conclusions

The information collected in this review did not reveal specific, proven strategies in marketing bicycle transportation to low-income, women and minority communities. However, several barriers stand out as relevant issues facing the ability of these communities to obtain affordable, convenient transportation.

Low-income people make fewer trips per day compared to people with higher incomes, and don't travel as far every day. This is likely due to a combination of factors. Higher unemployment means fewer work commutes. Trip distances in central cities are shorter, resulting in fewer miles traveled on comparable trips, though this factor may change as low-income communities are priced out of central city neighborhoods. Low-income people also travel at different times of day, and constitute a larger portion of trips taken during off-peak hours (a factor which frequently makes transit use challenging or unavailable). Low-income households that don't own cars are still likely to make a large portion of their trips by automobile. This indicates that low-income people carpool often, or are reliant on the use of vehicles borrowed from friends. A lack of transportation options also restricts employment opportunities, as some jobs may be prohibitively far away or otherwise inconvenient to travel to on transit or on foot.

Bicycling may present an affordable means of transportation that could overcome some of these barriers. Bicycling is best suited to replace shorter trips, so for low-income people living in areas with a dense, mixed-use land-use pattern, it may be a more convenient option than carpooling or transit, both of which may have restricted schedules. Since low-income people make more trips during off-peak hours or on weekends when transit service is provided at a lower frequency, bicycling may be faster and/or more flexible than transit for those trips.

Although low-income people are likely to travel shorter distances and make fewer trips, working women on average make more trips and travel farther than working men. These women trip-chain more often, combining trips to different destinations. For these kinds of trips, bicycling may be more convenient than transit. Because it is not fixed route, bicycling may be quicker, eliminating transfer times between transit lines. However, because women are more likely to be transporting children or items from one destination to the next, they may need racks, seats, trailers or other accessories to help them carry things on their bicycle. In the case of women transporting children, other factors such as the child's age and own bicycling ability may affect the type and cost of bicycle accessories required, as well as convenience and safety concerns.

Safety and security issues may be an obstacle to helping women make more trips by bicycle. Women may prefer to travel different routes than men when using a bicycle, so the availability of

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different types of bicycle facilities in their neighborhoods may determine their comfort when bicycling. In addition to overcoming possible concerns about the safety of bicycling in traffic, fear of crime and social stigma may be an obstacle to bicycling for some women. Social perceptions of bicycling and walking are generally unstudied among other groups. For all groups, concerns about bicycle theft and the lack of secure parking facilities may create security concerns in addition to personal safety.

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