CHAPTER 2 – BICYCLING BENEFITS

This chapter describes some of the many benefits that bicycling has to offer. Bicycling can alleviate congestion, lower air pollution, reduce obesity, and increase physical fitness. Bicycles don't emit climate-disrupting carbon dioxide and are priced within reach for the billions of people who cannot afford an automobile (Brown, 2006). The following sections describe the many benefits of bicycling.

ENHANCE VISITOR EXPERIENCE

Providing safe places to ride bicycles allows for leisurely ways to experience Federal lands. Many visitors travel through Federal lands at high speeds, impatient to "get there" not realizing that they "are there." Lower speeds encourage observation and more intimate interactions encouraging visitors to look, listen and experience the landscape.

- A 2006 survey revealed that visitors in Yosemite National Park were more likely to be walking or riding bicycles when their most significant or memorable experience of the park occurred (White, 2006).

Figure 1: Yosemite National Park by Bicycle. (Photo courtesy Daniel Woodrum.)

Yosemite's bike-ability is probably one of the national park's best kept secrets. Paved trails take you places roads made for automobiles can't. In many places, the paths take you alongside or across the picturesque Merced River, which flows through the center of the valley. Compared to the roads, the bicycle trails aren't crowded. Best of all, you can stop, get off and on again, and turn around, whenever you want. In all, the park offers 12 miles of paved trails, designed especially for bicycles (Woodrum, 2005).

- Ecologists led by Harvard University biologist E.O. Wilson have formulated the "biophilia hypothesis," which argues that those who are deprived of contact with nature suffer psychologically and that this deprivation leads to a measurable decline in well-being (Brown, 2006).
- Rangers at the National Mall and Memorial Parks in Washington, D.C., lead interpretive bicycle tours providing a ride through history for visitors. Bicycling allows rangers to lead visitors to the lesser known monuments that may otherwise be missed.

- Historic routes through public lands can create a very memorable biking/hiking experience. In the Black Hills of South Dakota, old USFS and timber access roads provide exceptional mountain biking areas rich in history. The following description relates an experience of one Minnesota bicyclist in the Black Hills.

> *One of the most interesting things I did was to trace Gen. George Custer's 1870s expedition through the Black Hills. I researched the record of his expedition, located maps, engineers' statements/descriptions and photographs and used them to plot the detailed route. I then took my mountain bike and followed the route, some of which is covered by good roads, and some of which was accessible only on unimproved surfaces. It was possible to identify the expedition camp sites though photographs and there were historic markers at other more accessible campsites. Just rambling around on a mountain bike has been fun for my sons and me* (Sandell, 2007).

REDUCE POLLUTION

Decreasing automobile use and increasing bicycle use is good for the environment. It can improve air quality and reduce greenhouse gas emissions linked to climate change. Bicycling does not contribute to the environmental damage inherent in extracting, transporting, processing and burning petroleum or other fossil fuels. One hundred calories can power a cyclist for three miles, but can only power a car for 280 feet (CDC, 2007).

- According to the U.S. Environmental Protection Agency (EPA), driving a car is the single most polluting action undertaken by the average citizen. Bicycling reduces fuel use and greenhouse gas emissions by replacing the automobile on short trips.
- In 2000, Zion National Park banned virtually all vehicles from peak-season travel on the six-mile stretch of road that connects Zion's most popular attractions. From April through October, quiet propane-powered buses carry visitors, eliminating 4,000 vehicle trips a day. Bicycling is popular, in part due to reduced traffic. The buses, in combination with bicycling, resulted in improved air quality and reduced noise and congestion (National Geographic, 2006).
- In Lyon, France, a low-cost bike rental program reduces traffic and pollution. The city's 3,000 rental bikes logged about 10 million miles in the program's first two years, preventing an estimated 3,000 tons of carbon dioxide from being released into the air (Washington Post, 2007).

RELIEVE TRAFFIC CONGESTION AND PARKING SHORTAGES

Bicycling can help minimize impacts of heavy vehicle use on sensitive places. Forty percent of all car trips taken in the United States are two miles or shorter, according to Penn State University ecology professor Christopher Uhl. Nearly half of all trips are less than three miles (FHWA, 2006). Given that three to five miles is considered a reasonable distance for bicycle commuting, 40–50 percent of all trips are within walking or biking distance (Bowman-Melton Associates, undated).

Figure 2: Cars, Buses, Bicycles and Pedestrian Space Requirements. (Photo courtesy Thomas Jefferson Planning District Commission, Charlottesville, VA.)

The four photographs in Figure 2 demonstrate visually how shifting a lane to transit could increase capacity without widening the roadway. Six bicycles can typically fit into the road space used by one car and twenty bicycles can fit into the space required to park one car.

Non-motorized networks in combination with transit systems can not only reduce congestion, they can also improve air quality, minimize environmental damage caused by large numbers of vehicles, minimize parking requirements and reduce noise. In comparison, building wider roadways and more parking lots may improve traffic flow and reduce visitor delays, but offers few other benefits.

Communities that invest in bicycling and pedestrian facilities have seen tremendous growth in the share of biking and walking trips. Replacing cars with bicycles for short trips on Federal lands can reduce congestion and parking needs. Longer trips can be taken using transit fitted with bike racks, providing flexibility for bicyclists to tailor the length of their trips to meet their needs.

- On a typical summer day on the South Rim of Grand Canyon National Park, nearly 6,000 vehicles compete for 2,400 parking spaces.
- Bicycles in combination with transit can significantly reduce congestion and improve air quality. Zion National Park provides a great example, as described above.
- The City of Portland, OR, has built more than 100 miles of trails and bike lanes since 2001. This, and earlier investments in infrastructure and programming, have resulted in a quintupling of miles traveled by Portland bicyclists over the last 15 years (City of Portland, 2005).
- People typically drive 5–15 percent fewer vehicle miles in communities with good walking and cycling conditions than they do in more automobile-dependent areas (Litman, 2007).
- Roughly 30 percent of all urban trips in the Netherlands are on bicycle (Brown, 2006).

IMPROVE VISITOR MOBILITY

Figure 3: People Enjoy a Bicycle Taxi Ride. (Photo courtesy Trever Brandt.)

Mobility refers to the movement of people of all ages and physical abilities, including those without access to a private automobile. This could include seasonal employees who do not own a vehicle, people under age 16 who have not yet earned their driver's license, people with disabilities who are unable to drive, or those who cannot afford to or choose not to drive. Figures 3 and 4 illustrate the appeal bicycles have on a broad range of people of various ages and abilities. Bicycle-friendly facilities such as paved greenways or multi-use pathways can improve mobility for many people.

In 2002, a newly constructed greenway trail in the Grand Canyon won the NPS National Accessibility Leadership Award. At that time, this 4.5-mile-long trail was the longest such trail in the National Park system conforming to the accessibility standards of the Americans with Disabilities Act (ADA) (Olson, 2007).

One paper presented at the 2004 Transportation Research Board annual conference examines urban and rural park settings and conventional mass transportation (buses, trains) and emerging

Figure 4: Hand cycling Along Banks-Vernonia Trail in Oregon. (Photo courtesy Oregon Handcycle Alliance.)

"small" technologies such as bicycles, 4-wheel cycles, motor-scooters, and others. Parks and public lands create different transportation needs for visitors than urban areas and there is significant merit to promoting "smaller, quieter means to experience our public lands to enhance visitor experience" (Gimmler, 2004).

STIMULATE AND DIVERSIFY ECONOMIES IN GATEWAY COMMUNITIES

Bike routes, trails and pathways bring tourists who stimulate recreation-related spending. Local trail users and visitors provide direct economic benefits to bicycle shops, retail stores, restaurants and lodging establishments. Proximity to trails is a valued asset that can increase property values.

- U.S. cyclists have a mean income of $60,000 (Bikes Belong, 2006).
- Bicycle tourism generates (Bikes Belong, 2006):

  $66.8 million annually in Maine (Maine Department of Transportation)

  $193 million annually in Colorado (Colorado Department of Transportation)

  $278 million annually in Wisconsin (Bicycle Federation of Wisconsin)
- The Western Canada Mountain Bike Tourism Association calculated Canada's Sea to Sky corridor generated $9.2 million in visitor spending in the summer of 2006. The region extends from Vancouver's North Shore to Whistler in British Columbia, including the cities of Pemberton and Squamish. The economic impact increases to $32 million when the Whistler Bike Park and Crankworx Mountain Bike Festival are included (Bike Magazine, 2007).
- Tourism dollars from mountain biking help to keep locals working in towns like Moab, UT; Durango, CO; and Downieville, CA, which have become mountain biking destinations. The Slickrock Mountain Bike Trail generates $1.3 million in annual receipts for the City of Moab, a town of fewer than 5,000 people (Lerneris and Poole, 1999). It is only one of many trails in the area.
- A 90-mile-long, single-track trail named Maah Daah Hey, a Native American term meaning "an area that will be around for a long time," runs through the Little Missouri National Grasslands and the Theodore Roosevelt National Park near Medora, ND. Medora attracts an increasing number of cyclists and tourism dollars from this trail. National magazines have published dramatic photos and exciting stories about Medora and the Maah Daah Hey.
- A 1998 study of property values along the Mountain Bay Trail in Brown County, WI, shows that lots adjacent to the trail sold faster and for an average of 9 percent more than similar property away from the trail (Teton Valley Trails and Pathways, 2007).

IMPROVE HEALTH

Regular exercise such as bicycling improves health and provides a sense of well being. Federal lands can encourage active transportation and recreation by creating more places that are safe for bicyclists and pedestrians.

Figure 5: Bicycles Connect Kids with Nature. (Photo courtesy IMBA/Bob Allen Photography, 2005.)

- An NPS study found that people who exercise regularly spend 30 percent fewer days in the hospital than people who do not (NPS, 2003).
- In a recent survey by the Outdoor Industry Foundation, over three-fourths of respondents reported that participating in outdoor activities gives them a feeling of accomplishment and escape from life's pressures (Outdoor Industry Foundation's Exploring the Active Lifestyle survey, 2004).
- Sixty-one percent of U.S. adults are overweight or obese. There is compelling evidence that today's transportation decisions are exacerbating healthcare costs. There is a $76.6 billion potential annual healthcare savings if Americans were more active (U.S. Dept of Health and Human Services, 2006).
- Bicycles can get people out of an enclosed vehicle and into the natural world. A widening circle of researchers believes that the loss of natural habitat, or the disconnection from nature even when it is available, has enormous implications for human health and child development (Louv, 2005).
- The most effective action that local governments say they could take to combat health problems related to obesity is to develop a cohesive system of parks and trails (Active Living Approaches, 2007).