

trails. The fastest, most geared-up bicyclists are emerging as a separate mode from their more leisurely brethren. Both of these issues—the cost-time question and the mode conflict—are driving bicycle planning discussions and decisions nationwide.

Parallel systems

“Our bike plan specifically calls for total accommodation,” says Bob Byers, a senior transportation engineer with Hennepin County, which includes Minneapolis and its western suburbs. Byers was the lead planner, in 1997, for the county’s original bicycle transportation plan, which called for approximately 800 miles of bicycle facilities. According to Byers, about half of those are built. By “total accommodation” he means making sure the increasing diversity of bikers can all feel comfortable biking regularly.

It is generally understood that there are three types of bicyclists. Type A is the most skilled and will ride anywhere, in most weather, and will find the fastest, most direct route even if that means mingling with vehicular traffic. Type B is less comfortable among automobiles and may select a longer route if it appears safer. These bikers may commute, but they have a lower distance and inconvenience threshold. Type Cs are novice bikers, children, for instance, who will hardly ever (some say should never) ride with vehicles, and who bicycle primarily for recreation.

Hennepin County’s system is corridor based. The plan identifies key transportation routes ripe for bicycle improvements, but the county only builds the facilities when those roadways are improved. There are recommended cross sections for accommodating both off-street trails and on-street facilities, such as striped lanes or wide shoulders. But, Byers admits, final design decisions are driven by available space and community desires. The county, because it deals primarily with its own county roads, relies on what it calls “secondary systems” to expand the network. Such systems include the 65-mile network of off-road trails built by the Three Rivers Park District.

“I always like to think of the regional [off-road] trails as the primary arteries of the overall bicycle system,” says Jonathan Vlaming, senior manager of planning at the park district. He works closely with Byers at the county to make sure their systems interconnect. And although the park district’s off-road trails, which often run on old rail corridors and connect regional parks, may have been historically seen as recreational facilities, they are increasingly used for commuting.

Two of these trails, which feed into Minne-

Where Connections Count

It’s almost two miles north from Navy Pier to Lincoln Park along Chicago’s Lakefront Trail. The trail is an unbroken, unmitigated expanse of concrete squeezed between Lake Shore Drive and Lake Michigan: concrete seawall, concrete path, concrete steps. And yet in good weather the trail is crowded most of the time with walkers, skaters, joggers, bicyclists, and even folks just sitting on the steps along the lake, people-watching.

Just south of East LaSalle Drive, the bicyclists and others begin to disperse throughout the park. Some stop at the park’s chess pavilion, which is crammed with people on the weekend (people wait for chessboards to open up). Some go off to the beach, or to the restaurants or food kiosks. Others continue to the basketball or tennis courts or other sports facilities. And many others continue through Lincoln Park, cross over Lake Shore Drive, and venture into the surrounding neighborhoods, where there are many more restaurants, attractions, and residences.

South of downtown Chicago, the Lakefront Trail is a different story. There are few walkers, joggers, or skaters—just bicyclists. South of Grant Park, the trail ducks behind the Field Museum and Soldier Field and few people follow it as it winds its way past McCormick Place convention center. Some families use traditional park facilities—and the trail—close to the parking provided at Moe Drive, but farther south the trail is virtually deserted. The Lakefront Trail, so crowded near Navy Pier and Lincoln Park only three miles away, lies unused. For every three people who use the trail north of Navy Pier, there’s only one to the south.

What’s needed

The story of the Lakefront Trail is repeated at multiuse trails all over the country. These trails are intended to accommodate walkers, bicyclists, and others, not just for recreation but for commuting and other purposes as well. They were often built, at least partly, with federal transportation money. But they are heavily used mostly where there is connectivity—where the trails provide easy access not just to recreational areas but also to neighborhoods, shops, restaurants, and a wide range of places people want to go.

This is the main conclusion of an extensive four-year study conducted by a multidisciplinary team of researchers at the University of Southern California. Led by Kim Reynolds, an

associate professor at the Institute for Preventive Medicine, and Jennifer Wolch, a professor and director of the USC Center for Sustainable Cities, the USC team examined three 20-mile trails: Chicago’s Lakefront Trail, the Los Angeles River Trail from L.A. to Long Beach, and the White Rock Trail in the northern part of Dallas.

The trails were chosen from more than a thousand candidates based on length, the variety of development districts traversed, and the demographic profile of residents in adjacent neighborhoods. We were also part of the research team. The study was funded by the Robert Wood Johnson Foundation’s Active Living Research Program.

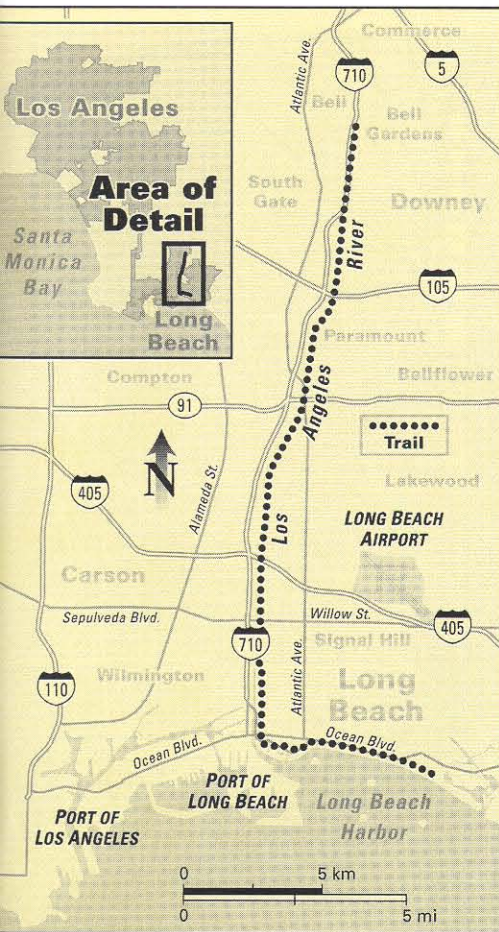
The physical characteristics of the trails and their use patterns were documented, while surrounding areas and development were



mapped. Residents of adjacent neighborhoods were recruited to answer survey questions, keep individual activity diaries, and wear “accelerometer” devices to measure the level of their physical activity over the period of time covered by their diaries.

Multiuse trails do serve both recreational and transportation purposes, but often these are combined. Rarely do the trails serve a transportation purpose only. Of the 500 users we surveyed in the adjacent neighborhoods, 58 percent said they use the nearby trail for recreational purposes only, while only four percent said they use it for transportation purposes only. But 38 percent—a substantial portion—said they use the trail for both recreation and transportation purposes.

While trail audits found bicycling to be the most frequent mode of travel on each of the trails (60 percent in Chicago and L.A.; 79 percent in Dallas), most neighborhood survey respondents said they were walkers (56 percent). In Chicago, about 18 percent were joggers, twice the



Courtesy of Kim Reynolds

On longer trails such as the Los Angeles River Trail, the most heavily used portions are those close to densely developed neighborhoods.

percentage in L.A. and Dallas. In other words, bicyclists tend to use the trails for long-distance recreation, while people in adjacent neighborhoods tend to use the trails for walking—and are apparently more likely to use the trail to actually get somewhere. Men were more likely to use the trail for transportation purposes than were women.

In looking at the active living benefits of having a trail nearby, the study also found that those using the trails for recreation had higher levels of average weekly physical activity than those who used them solely for transportation. This was measured in terms of Metabolic Equivalent (MET) hours—a measurement of the average person's metabolic rate that was determined by using accelerometers. Recreational users recorded more than twice the number of MET hours (8.82) than those who used the trail for transportation (3.10). Those who cited exercise as their main reason for using the trail (regardless of purpose) also reported better overall health than those who cited other reasons, such as health or social interaction.

Lessons learned

For planners who are designing trails, the results of our study boil down to a few important lessons.

- Make sure there are frequent and convenient connections between the trail, city streets, and transit stops.

It's important to remember that the vast majority of trips taken on trails are likely to be relatively short. The users are walkers traveling at two to four miles per hour or bicyclists traveling 10 to 20 miles per hour. So don't require people to go far out of their way to reach the trail or their destinations.

In Los Angeles, as in Chicago, the most heavily used portions of the trails were those adjacent to densely developed neighborhoods with convenient connections to city streets and access to trailside amenities. For every person on the lonely northern stretch, there were five people using the southern parts near Long Beach with better connections and destination amenities.

Although the suburban setting of the White Rock Lake Trail in Dallas is markedly different than that of the other two trails studied, the overall use pattern proved consistent. The trail segments closest to developed areas and having the best connections to local streets were about 2.5 times more heavily used—the same ratio as we found for the much more urban Chicago trail.

- Make sure the trail alignment leads to places people want and need to go.

Over and over again, we found that easy access to restaurants, shops, parks, community centers, libraries, and the like promotes trail use as a transportation alternative because it alleviates the need to deal with traffic and find parking. In particular, how well a trail serves a transportation function is clearly related to its location and its integration with other transportation facilities. Curiously, the presence of schools does not seem to promote increased trail use, perhaps reflecting the nationwide trend of fewer children walking or bicycling to school.

- Design the trail to be an integral part of urban life, not an escape from it. This is especially important in encouraging women to use trails.

Planners and designers should always bear in mind that trails are not just transportation and recreational venues. They are social venues as well. Both the survey and the audit indicate most users, regardless of whether they use a trail for recreation or transportation, prefer at

least some company and steer clear of isolated stretches.

No matter how scenic the view, only cyclists gravitate in any number to the long lonely stretches, and they are predominately male. Women tend to use trail sections perceived as safe and those with visual amenities. In Los Angeles, men outnumbered women by six to one in the isolated stretches, compared with only two to one in the better-connected areas. It is also important to note that older users tend to avoid not only areas with limited access points, but heavily crowded sections as well.

One way to combat trail isolation is to offer trailside amenities or easy access to them. The busiest segments in our study had restrooms, drinking fountains, and snack bars provided either by the municipality or as a concession service. Other attractive features included nearby bicycle rental, repair, and parking facilities.

Anecdotal observation and statistical analysis from individual trails throughout the nation have led to similar conclusions. But the inclusion of three long trails from different parts of the country—along with the multidisciplinary approach—provides these findings with authority.

Some of these principles may seem self-evident, but they have often been overlooked in the practice of trail design. These basic principles may often taken a back seat to the practical considerations involved in getting something done: the requirements of funding programs, the difficulty of acquiring certain alignments, the need to accommodate the concerns of various (and often vocal) user groups.

Yet the inescapable conclusion of our research is that these lessons must be followed if trails are going to be used. Trail alignment plays a big part in determining how the trail will be used and by whom. Trails in remote locations are likely to serve almost exclusively as recreation destinations. And urban trails that are well integrated into their community's road and transit systems do serve as alternative transportation corridors. The use of transportation funding can be justified on that basis.

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