



NATIONAL CENTER FOR BICYCLING AND WALKING

FORUM



ISSUE NO.
51

Above: Afribike is working to better integrate the bicycle within the culture of South Africa and neighboring countries. To find out what they're up to, check out Paul Steely White's article on p.8.

FEATURES

- My Ride with the Director.....4
Chris Morfas
- Tips for Trail Advocates.....6
Rails to Trails Conservancy
- South Africans Swept off their Feet8
Paul Steely White
- Tracking Pedestrians12
ITS Institute Sensor
- Bicycles in the Millennium MUTCD.....14
Richard Moer, Mark Horowitz, Dwight Kingsbury, P.M. Summer
- Book Review16
Paul Cartwright

DEPARTMENTS

- Readers' Forum.....2
- Teletype2
- HPT.COM Update17
- Forum Library18



Formerly published as "Bicycle Forum"

Published May , 2001

3rd class postage paid at Missoula MT. Copyright 2001, National Center for Bicycling & Walking. All rights reserved. ISSN: 0193-81

Readers' Forum

Some Thoughts on the Forum

■ This is a response to your query in BF #50 regarding how BF serves the bicycle planning & bicycle advocacy community and how it might serve better. Even with the advent of CenterLines and other online newsletters and Web sites, BF plays a very valuable role to me.

I find it very helpful to be able to carry a copy of BF to a meeting to show an article to someone. Frankly, the ease of publishing on the Web makes me increasingly cautious about the quality of information that one finds there.

When I print a page from a Web site and hand it to someone unfamiliar with the given source, they have only my assurance of its reliability. Any given issue of BF, given its 10+ year history

and the qualifications of its authors and the evident care of its editing, speaks with great credibility.

Print remains the best medium for detailed explanations, especially those to which one might like to refer repeatedly. While e-mail newsletters are wonderful for propagating news, and Web pages with hyperlinks provide excellent ways to explore a field of interrelated information, a print quarterly provides probably the best way to delve into a complex topic.

BF has published pieces, e.g., reviewing the (then) proposed revision of AASHTO bicycle facilities standards, giving test results on the sensitivity of inductive loop traffic detectors, and presenting an analysis of the share of roadway expenses borne by different classes of

users, that have been very important in my work (first as a citizen advocate and now as a local government staffer). I prefer to continue receiving this sort of information in print.

In light of these comments, I would suggest some minor changes to BF.

With a quarterly production schedule, you probably have time to solicit articles and develop each issue around a specific theme. Maintain the technical sophistication of the articles at the level that you have established over the years.

Devote most of the remaining space to responses to the articles, rather than to Q&A or to news briefs (both of which are handled better electronically). Responses can come from readers and be published in subsequent issues of BF or, in some

cases, be solicited in advance by the editor and published concurrently with the article in question.

Take a look at a few consecutive months of *Atlantic Monthly*, for example, to see a lively exchange between authors and readers. Please maintain your excellent "Library" section and inside back page listing interesting and useful Web sites. Thank you for your excellent and steadfast work.

Ah, yes, one last request. I would love to see an issue devoted to the question, "What really works to increase bicycling (recreational & utilitarian) in a community?" with real live use stats and cost/benefit estimates.

I recognize that this may be asking for the moon & the stars, but surely some of your readers

NCBW FORUM 51

Editor John Williams

Publisher Bill Wilkinson

About NCBW Forum

NCBW Forum is a publication of the National Center for Bicycling & Walking. If you'd like to write for *NCBW Forum*, drop the editor a note. Domestic 4-issue subscriptions cost \$30; 8-issue subscriptions are \$55. In Canada or Mexico, the price is \$33 (US) for 4 issues and \$60 for 8 issues; overseas subscriptions cost \$35 for 4 issues and \$65 for 8. Some back issues are available at \$5.00 each, postpaid.

Editorial inquiries:

NCBW Forum

PO Box 8311, Missoula MT 59807

(406) 543-8113

email: john@montana.com

Subscription inquiries:

NCBW

1506 21st St NW, Suite 200,

Washington DC 20036-1008

(202) 463-6622

Teletype Feature headlines from our

#16: 4/13/2001 Features

- *More Cash for UK Footpaths*
- *This Year's Walk to School Day*
- *Walk Boston's Walks to School*
- *LAB's National Bike Summit*
- *Oregon to Study Aging, Driving*
- *May: Bike Month*
- *La Route Verte 4000km of Paths/Roads*

#15: 3/30/2001 Features

- *National Bicycle Summit Convened in DC*
- *Progress in Maine Legislative Battles*
- *Americans and their Highways*
- *Guns Vs Cars: What Threatens Kids Most?*
- *Minnesota Gov. Ventura on Auto Industry*
- *Long Beach Bikestation Celebrates 5th Anniversary*
- *Car-Free Day Coming April 19th*

#14: 3/16/2001 Features

- *Connecticut Bike Coalition Gets Grant*
- *The Trans Canada Trail*
- *North Carolina Cities To Get "Red Light Cameras"*

#13: 3/2/2001 Features

- *Legislative News In Maine, Montana*
- *Bad Texas Sidewalk Bill*
- *Urban Sprawl -> Waistline Sprawl*
- *New York Backs New Planning*
- *Pottstown: A Place To Walk*
- *New Rails-To-Trails President*

#12: 2/16/2001 Features

- *2nd Generation Traffic Calming Project*
- *Minnesota Traffic Calming Study*
- *Yarmouth Supports Walking, Biking*
- *Philly Creates Sign System for Pedestrians*

#11: 2/2/2001 Features

- *Advocacy Groups and City Staff*
- *Biking to Work is Healthy*
- *The Season of Wacky Bills*
- *And One Positive Bill*
- *Mustn't Ride Wheels to School*

#10: 1/19/2001 Features

- *New Report on Accessible Public R-O-W*
- *Campaign Targets N'hood Speeding*
- *Cycling on UK Canal Towpaths*

#9: 1/5/2001 Features

- *Bush Picks Mineta for Transportation*
- *Santa Barbara Bike Coalition 10 years old*
- *Seattle Biking is up*
- *California Freeway Study in Works*
- *Washington Spends \$5 Million for Traffic Safety*
- *2001 Earth Car-Free Day Scheduled*

& writers actually have some of this information.

Barry Zalph, Air Pollution Technical Coordinator, Jefferson County Air Pollution Control District, 850 Barret Avenue, Louisville, KY 40204-1745 USA (502)574-7252 <bzalp@co.jefferson.ky.us>

Barry—

Lots of good ideas (not to mention kind words!). After 17 issues of our e-newsletter CenterLines, we're still grappling with the relationship between our online work and our journal. I like the idea of more interaction between authors and readers and you're right that news items are better handled through CenterLines. And we'll see what we can do about what really works! —JW.

Got something to say? Contact:

John Williams
PO Box 8311
Missoula MT 59807
<email: john@montana.com>

A Letter from the Publisher...

Welcome to the start of a new era for the *Forum*. This seems fitting and timely. Our long-time editor, John Williams, just turned 50 and the *Forum* issue numbers have just exceeded his age! So, what can you expect to see in this "new era?"

First, after nearly a quarter of a century (Issue No. 1 of *Bicycle Forum* was dated Spring 1978), we have changed the name to the *National Center for Bicycling & Walking Forum* (NCBW *Forum*, for short). As many of you know, the Bicycle Federation of America now operates as the National Center for Bicycling & Walking to better acknowledge our commitment to and involvement with both modes. So, we decided to adjust the title of our journal to reflect this broader scope.

Second, we will do our best to maintain a quarterly publication schedule. Four factors contribute to this development: (a) John is back on the staff of the NCBW (he edited the journal as a "consultant" for the past several years) which gives us access to more of his time; (b) his other, primary task is editing our bi-weekly e-Newsletter, *CenterLines* and this activity has brought him back into the loop on all the various things going on in our world; (c) by coordinating the content of

CenterLines and *Forum*, we can concentrate on using *Forum* to publish longer articles and speed up the production process; and (d) by expanding our coverage to include issues related to pedestrians and walking there is more material begging to be shared.

Finally, with the help of Mary Alice Rath of Graphic Solutions, we have begun redesigning the "look" of the *Forum*. You can see some changes in this issue; more are coming.

To those of you who have been with us for many of these past 23 years (and you constitute a substantial percentage of our subscriber base!) thanks for your patience and support. To our more recent subscribers, welcome! And, to all of you, let us know what you think of the new look and direction. Better yet, let John know about your ideas for future articles and departments. We want to make the "new" *Forum* an even more valuable asset in our efforts to make America bicycle-friendly and walkable.

Bill Wilkinson

electronic newsletter, CenterLines.

#8: 12/22/2000 Features

- CDC Physical Activity Initiatives Get Boost
- More California Safe Routes To School
- Heads Up On Millennium MUTCD
- TRB: Ped Accessibility Guidelines

#7: 12/8/2000 Features

- Walkable Schools Replaced by Mega-Schools
- White House Youth Physical Activity Report
- Making the Public Health Connection: Conference Report
- Melbourne Bike Trail Faces the Chop
- Trails Increase Walking in Rural Missouri
- New ITE Bike Design Catalog in the Works
- Colorado Study Questions Wide Res. Streets

#6: 11/24/2000 Features

- Bogota — World's First Car Free City
- Bicycling 2nd To Driving - BTS

#5: 11/10/2000 Features

- Spotlight: On-Line Pedestrian Guide
- Hong Kong Pedestrian Dreams
- TRB Annual Meeting Program Available
- Exercise, Exercise, Exercise

#4: 10/27/2000 Features

- Walk and Learn
- New Trip Report
- Bogota Car Ban Referendum

#3: 10/13/2000 Features

- The National Bicycle Party
- CDC Establishes State Pgms
- Oberstar's Safe Routes to School
- Obesity Climbs in 1999

#2: 9/29/2000 Features

- PB/PW: Making the Public Health Connection
- Walk Children to School Day
- A Velo-City 2001 Teaser
- Coordinators Step Down
- Pedestrian Take-Over Set for NYC's Times Square
- San Francisco Tests Countdown Ped Signals
- World Car-Free Day...

#1: 9/15/2000 Features

- ProBike/ProWalk 2000... Outstanding!
- NHTSA tests methods to reduce speed
- Dan Burden takes honors at APBP PB/PW luncheon
- Santa Barbara going to video controllers
- Columbus OH spends \$5 million on school routes
- WA State funding for traffic safety near schools

CenterLines Archives

To view any of the issues listed here, point your browser at:

<http://www.bikefed.org>

For a free subscription to *CenterLines*, send a blank email to:

CenterLines-subscribe@topica.com

MY RIDE WITH THE DIRECTOR



by Chris Morfas

Above: Chris Morfas (middle) shares that post-ride feeling with Caltrans Director Jeff Morales (left) and Chief Deputy Director Tony Harris (right).

We took turns pulling one another. I could hardly believe it. Me, bicycle agitator, taking turns at the front of the pack with the head of Caltrans!

Br-r-r-r-r-r-r. The blood of this native Midwesterner has long since thinned out, and the thick, clammy tule fog settling over the Central Valley was sending chills through my lycra. Still, the occasion was special enough to warm even the most hardened cynic's heart. Caltrans was going for a bike ride.

Since taking over as director of the California Department of Transportation (CalTrans) less than a year ago, Jeff Morales has brought a new attitude to the bureaucracy once known as the Department of Highways. The era of highway building is over, he has declared, and now the challenge facing the department is improving the efficiency of the existing system. He also stresses the multimodal dimensions of the department's mission.

Walking the walk, he makes a point of having his

core Sacramento staff travel by various modes to the regular meetings that bring together the district directors from around the state. To Marysville, due north of Sacramento, they had van-pooled. To Oakland they had ridden the Amtrak Capitol line.

Today it was bicycling's turn. After filling ourselves with muffins, bananas and hot coffee, about fifteen of us set out to ride 40 miles from Laguna, just south of Sacramento, to Stockton. The group featured experienced riders like Ted Oberstar, Barton Newton and Ken McGuire, along with some hearty novices. Just three months removed from major knee surgery, this was to be my longest ride since the operation. Larry Robinson of Sacramento's Rest Stop accessory store was there to provide SAG support.

On the Director's Wheel

After about eight miles, the group split up, with most of us opting for the longer route and a smaller group choosing a more direct route. Already, my glasses were completely covered with water, and I could barely see beyond my wheel. That made paceline riding a little hairy! This was no time to stop, though, as the "ride that was not a race" morphed into a semi-competitive endurance test.

Soon Director Morales was leading our little peloton, wearing sneakers and pedaling a Nishiki hybrid circa 1990, no less. My Bianchi warhorse and I were impressed. We took turns pulling one another. I could hardly believe it. Me, bicycle agitator, taking turns at the front of the pack with the head of Caltrans! Is this real,

or are my moisture-covered glasses producing a foggy illusion?

This was the least comfortable portion of the ride, as Twin Cities Road featured very little pavement to the right of the fog line. As assorted high-speed trucks and cars passed us in both directions, I was hoping that the importance of having rideable pavement a few feet to the right of the edge stripe would sink in. Caltrans' current policy does call for shoulders on state highways, but all local and regional transportation agencies must get the message that roads need to be built so that bicyclists can use them in reasonable safety and comfort.

Lessons From the Road

Nature called, and I fell back a little. Charging back towards the front, I soon came upon none other than Chief Deputy Director Tony Harris. Harris is an amiable gent who hasn't ridden much in recent years and isn't comfortable making vehicular style left turns. He keeps a very steady pace, however. We helped each other along for a bit, and as our friend Mr. Sun made his much-anticipated debut that morning, we marveled at the harvest colors brightening the local farms.

Stopped at one intersection, we prepared ourselves for a green light when, alas, our bicycles were not detected by the loop detector, and we had to wait through another cycle. Harris gave a look that transmitted "U-r-r-r-gh" and proceeded to cycle across the twenty-foot wide right-turn only lane and push the pedestrian crossing button. After that mild indignity, I couldn't help but tell the story of the 1998 bill CBC had

pushed all the way to then-Governor Wilson's desk which, if not for his veto ("U-r-r-r-r-gh") would have required new or replaced traffic detection devices to be bicycle-sensitive. Maybe it's time to try that one again.

This southbound section along Lower Sacramento Road from north of Galt to Stockton was a lesson in road maintenance. Various sections were alternately comfortable and bone-jarring. I hope Chief Deputy Director Harris believed me when I said that "No user group is more appreciative of smooth pavement than bicyclists."

That why Director Morales' emphasis on making the existing roadway system more efficient is so important to us. Bicyclists will benefit if money for new roads is instead invested repairing existing roads. Done properly, basic road maintenance is one of the very best investments for bicycling. You've probably heard the expression, "For motorists a pothole is an inconvenience, but for bicyclists a pothole is a killer." You better believe it.

A New Spirit at Caltrans HQ

The gang successfully rendezvoused at the Stockton Radisson Hotel, where congratulatory greetings and camaraderie filled the air. Indeed, the times they are a changin' at Caltrans. There I was with Jeff Morales, Tony Harris, Deputy Director for Project Development Brent Felker, Deputy Director for Administration Marisela Montes, another dozen or so leaders of the state transportation department, and we were all sharing that wonderful feeling that comes from having gotten yourself somewhere under your own power.

It was more than just endorphins-induced euphoria that caused my optimism. Director Morales has assembled a talented and committed team that takes bicycling issues seriously. He and I chatted about getting him out for our California Bike Commute Ride Around the Capital this coming May and about having the state produce a Blueprint for Bicycling and Walking that could get public and private sector partners in sync on increasing bicycling throughout the state. He agreed to meet with CBC to discuss a variety of issues.

A reader whose cycling life is made difficult by a dangerous state highway or inaccessible toll bridge might reasonably object to this apparent giddiness. No, this new spirit has not yet trickled down to all of the Caltrans district offices, much less the regional agencies. Across the state, roads and interchanges are being designed and built in ways that are hazardous or inconvenient for bicyclists.

Still, for the first time ever, Caltrans has at its head a competent, bicycle-friendly director who commands the respect of his staff and the governor. Be assured that CBC will work very hard to maximize this opportunity.

*Director Morales
has assembled
a talented and
committed team
that takes
bicycling issues
seriously.*

Author Chris Morfas is the Executive Director of the California Bicycle Coalition, a 3,000-member, nonprofit organization that promotes transportation and recreational bicycling. CBC co-sponsored the Safe Routes to School Bill and annually organizes the California Bike Commute.

To join the California Bicycle Coalition, please send \$25 or whatever you can afford to: CBC, 909 12th Street, Suite 114, Sacramento, CA 95814. Businesses and clubs: Please inquire by phone (916) 446-7558.

*Reprinted with permission from the CBC website: www.calbike.org
Copyright California Bicycle Coalition © 2000
All Rights Reserved.*

Tips for Trail Advocates:

TOP 10 WAYS...

TO WORK WITH THE OPPOSITION

Advice from the Rails-to-Trails Conservancy

You can take various approaches when working with people who may oppose your rail-trail project. In general, you should always stress the benefits of rail-trails and keep adjacent landowners involved in the process. Here are 10 techniques you may find helpful.

1 Reach out to adjacent residents.

Do not wait for nearby residents to learn about the proposal by reading about it in the newspaper. Talk to them directly, either by traveling door-to-door, circulating an open letter or giving a presentation at a community gathering.

2 Listen to what they are saying.

Take time to understand why adjacent landowners are opposed to the trail. Many of their concerns stem from fear

of the unknown. Listen carefully, address specific concerns and try to arrive at solutions that benefit as many people as possible.

3 Find allies among adjacent residents.

Within the group of people who live adjacent to the proposed rail-trail, you may find bicyclists, walkers, runners, horseback riders, families with active children or individuals with disabilities all of whom will be likely trail supporters. Seek out these individuals, explain the trail's benefits and urge them to work for the conversion.

4 Give adjacent residents a role in the rail-trail project.

Establish a trail advisory committee and ask adjacent residents to serve along with advocates and user groups. Often, when given a chance

to participate in the process, a group of adjacent landowners may be willing to work toward solutions.

5 Invite former rail-trail opponents to speak to your future trail neighbors.

If your group has some travel money, invite an articulate landowner who was once opposed to a rail-trail to come speak in your community. Hearing the story of how an opponent became a trail advocate can help allay the concerns of future trail neighbors.

6 Bring in a third party to help build consensus.

If you have difficulty forming a trail advisory committee, enlisting a third party may help identify the concerns of trail opponents and trail supporters. Bring in someone

who is respected and trusted by both sides. You might contact the National Park Service's Rivers, Trails, and Conservation Assistance Program for help (202565-1200).

7 Act in a positive, constructive way.

Although it may be difficult at times, do not react in anger to claims made by trail opponents. No matter how unpleasant a discussion becomes, always treat everyone with fairness and sincerity. Be firm, factual and reasonable.

8 Work with as many landowners and opponents as possible.

While you are likely to encounter one or two people adamantly opposed to your trail, do not let them sidetrack you, unless they could truly stall your project. Identify milder opponents of the project and those individuals who are still undecided. Work hard to address the fears of this group and mobilize them in

favor of the trail they can add to your majority.

9 Reframe the discussion from "railroad corridor" to "trail."

A completed rail-trail is quite different from an abandoned railroad corridor. People who are unhappy with a littered, overgrown, unmanaged corridor should be made aware that a developed rail-trail is managed and maintained, and has permitted uses and trail rules.

10 Work hard for favorable reviews in the media.

Favorable coverage in the media helps defuse the opposition and generate support for your cause. Give your project the best opportunity for positive exposure by supplying TV, radio and newspaper reporters and editors with interesting and accurate factual information.

While trail opposition is one of the more difficult hurdles to cross during rail-trail

conversion, it need not stall your project. If you take the initiative from the outset to inform potential opponents about the trail project, listen to their concerns and keep them involved in the planning process, you will have a much easier time building strong support and creating a trail for your community.

This information was excerpted from Rails-to-Trails Conservancy's Secrets of Successful Rail-Trails: An Acquisition and Organizing Manual for Converting Rails into Trails. To order Secrets of Successful Rail-Trails, send \$19.95 (or \$16.95 for RTC members) plus \$4.00 for shipping the first book and \$1.00 for shipping each additional book to Rails-to-Trails Conservancy, 1100 Seventeenth Street, NW., 10th Floor, Washington, DC, 20036, or (for Visa and Mastercard orders only) call 18008887747 (ext.11).

As a non-profit public organization, Rails-to-Trails Conservancy is wholly supported by its membership. Help make our vision a reality by joining today at one of the following membership levels: regular (\$18); supporting (\$25); patron (\$50); benefactor (\$100); advocate (\$500); or Trailblazer Society (\$1,000).



A completed rail-trail is quite different from an abandoned railroad corridor.



SOUTH AFRICANS *...swept off their feet*

an Afribike update by Paul Steely White

Since December 1998, the Afribike project of the Institute for Transportation and Development Policy (ITDP) has mobilized over 1,000 Southern Africans with bicycles and training. What's more, Afribike has successfully communicated the experiences of its beneficiaries to decision makers, marshaling new and unprecedented support for pro-bicycle projects from national, provincial, and local African governments, and from industry and international lending institutions.

In January 2000, Afribike established itself as an independent non-profit organization based in Johannesburg, South Africa. ITDP continues to provide support and technical assistance to Afribike as it undertakes advocacy and project work throughout Southern and Western Africa. Funding for Afribike was made possible by the support of the International Foundation, Alternative Gifts International, the Marcia Brady Tucker Foundation, the Roy A. Hunt Foundation, and the Members of ITDP.

Mobilizing South Africa's Stranded Students

Because their only option is to walk, most primary and secondary school children in South Africa arrive to school late and tired. Many do not arrive at all.

In some areas it is common for children to walk 10km each way. In the KwaZulu-Natal province, 37% of secondary school students walk further than 5.5 kilometers each way. That is over six miles per day of walking, a significant time and calorie expenditure that, according to school principals in the province, fatigues 70% of the

students so much that learning is significantly compromised.

According to the KwaZulu-Natal Rural Mobility Study, "The most economic form of intervention would be in the form of supplying bicycles to assist scholars [students] in traveling to school." For most families, sending their children to school by public transport or mini-bus taxis, at 1,000 Rand (US\$147) per year (or about 10% of average annual household income for one student), is prohibitively expensive.

As a result, 89% of secondary students and 98% of primary students walk. While

trip distances within the urban and peri-urban townships are shorter than in rural locales, student attendance and performance in these areas is similarly hampered.

In partnership with V3, an engineering firm, and local and provincial governments, Afribike is currently implementing several projects that will mobilize a total of 2,000 students by providing subsidized bicycles. The projects will simultaneously

- 1) train the students in riding, maintenance, and repair;
- 2) implement concurrent infrastructure improvements to improve the safety of the new cyclists; and
- 3) establish a local bicycle economy, creating sustainable local jobs in bicycle sales, repair, and related services.

Two of these student bicycle projects are based in Ugu and Uthekela, rural regions in KwaZulu-Natal. Another is in Ivory Park, an urban township located about 25km north of downtown Johannesburg and near South Africa's fastest growing suburb, Midrand, the site of ITDP's 1997 Workbike Demonstration Project. (See "Making Bikes Work For South Africa", Sustainable Transport #8)

The Pioneering Mzobe Brothers

The relative efficiency of bicycles vs. public transport and walking begs the question: Why aren't students cycling to school already? A few already are. Despite hilly terrain, brothers Richard and Lindo Mzobe, two teenage secondary school students in rural KwaZulu-Natal, ride their bicycles to school every day.

Richard, 18, began cycling to school in February of 1999 after he purchased a used mountain bike. After witnessing his big brother's success, Lindo bought a used BMX bicycle. Today, Richard and Lindo each save about 1.5 hours per day that they used to spend walking. That leaves more time and energy for studies. Both are set on going to college.

Richard and Lindo overcame many obstacles. They saved up for several months, then took an expensive mini-bus taxi trip to Port Shepston (46km away) where the nearest bike shop is located. After purchasing their used bicycles (about US\$50) they then had to pay extra to fasten their bicycles to the top of the mini-bus taxi for the return trip. Richard and Lindo share one set of 3mm, 4mm and 6mm Allen wrenches, tools that are rare in their community.

In addition to enabling them to perform many of their own repairs, the wrenches double as a makeshift bike lock: each day they use their tools to lock their handlebars into an unrideable position, effectively deterring thieves. The busy highway that cuts through their community is the only route to school.

The author, who rides daily from Brooklyn to Manhattan, was aghast at the lack of a shoulder, high traffic speeds, and blind curves as he rode with them. Richard and Lindo hugged the edge of the road and pushed on as the author sweated.

Issues like affordability; access to bicycles, tools, and spare parts; security, and unsafe routes must be addressed to enable more students to ride to school. Some past efforts to mobilize students with bicycles have



Above: Afribike dealerships being delivered.
Below: An Afribike dealership—a converted shipping container.



yielded limited success because only bicycles were provided.

In time, the bicycles fell into disrepair. Simply injecting bicycles into the community is not sustainable. Seeking to improve on past efforts, Afribike is providing skills training, establishing local dealerships, and improving safety.

The Afribike Skills Course

Students are selected for the program based on the distance they travel to school and on their household's income. Those eligible to receive subsidized bicycles will first complete the Afribike Training Course. The course, led by Afribike Master Mechanic, Sam Soni, teaches

Students are selected for the program based on the distance they travel to school and on their household's income. Those eligible to receive subsidized bicycles will first complete the Afribike Training Course.



Above: Carrying a load by bicycle in Ghana.

Promoting cycling goes beyond the sustainable provision of bicycles and related skills. Safe and comfortable "cycling habitats", especially in urban areas, are vital.

Afribike's Containerized Dealerships

Afribike dealerships are franchised bicycle retail outlets that are owned and managed by local entrepreneurs selected and trained by Afribike. Dealership entrepreneurs are trained by professional bicycle mechanics and bicycle shop owners and operators like Archie Sipoyo of Archie's Bike Tech in Soweto. (Mr. Sipoyo also serves on Afribike's Board of Directors.) Afribike dealerships, which include workshop and retail space, are housed in converted 20 foot shipping containers.

In addition to investing and keeping more project dollars within the community, the dealerships solve many problems encountered with previous bicycle hardware promotion projects. First, from a project point of view the dealerships provide a recognizable and locally controlled framework for project promotion, training, implementation and monitoring.

Second, the dealership provides a sustainable mechanism to deliver ongoing service and spare parts, vital to keep new cyclists on the road. Third, the dealership provides a financially sustainable mechanism to meet future demand.

Fourth, the dealership addresses the issue of job creation in areas where unemployment approaches 50%. Fifth, the dealership establishes an invested and sustainable local constituency and an organizational capacity for cyclists' rights, safety, and infrastructure advocacy.

Lastly, the dealerships give the cycling industry a real incentive to participate in the project by providing outlets to sell their products.

In short, the dealerships represent a departure from previous bicycle promotion projects that have ignored these issues and simply provided free, subsidized or micro financed bicycles in isolation from private sector stakeholders. In 2000, Afribike plans to roll out three containerized dealerships, with 15 more planned for 2001.

Improving Safety with "Shova Lula"

Promoting cycling goes beyond the sustainable provision of bicycles and related skills. Safe and comfortable "cycling habitats", especially in urban areas, are vital. In Ivory Park, where urban traffic conditions are unsafe for cyclists, this includes the construction of dedicated cycle paths. "Shova Lula", which means "Push Easy" in the Tswana language is colloquial for cycling and the name of this planned bicycle infrastructure component.

Maikel Lieuw Kie Song, Afribike's Projects Director, designed these cycle paths under the auspices of the Research Centre for Employment Creation in Construction of Wits University and the Interface for Cycling Expertise (Jeroen Buis) from the Netherlands. These lanes are designed to offer cyclists a safe riding environment and access to the most important destinations in Ivory Park, such as schools, clinics, the main taxi station, municipal offices, and the soccer stadium.

Getting the network built has proven difficult, as politicians and even some community members are skittish about embarking on an unproven concept. To overcome these obstacles, Afribike and ITDP are pursu-

ing several strategies. An alliance with Slagment, a local producer of low-energy cement, has agreed to provide half of the cement required for the network.

The first draft of the cycle path design calls for approximately 4.6 km of bicycle paths, and it includes accommodations for future expansions into surrounding areas like Tembisa Township. The recommended design is for a 3m wide, concrete, two-way dedicated cycle lane with raised crossings at important intersections. Local contractors will use employment-intensive methods and low-energy cement to construct the lanes. The estimated cost of the project is 1.4 million Rand, approximately US\$200,000.

In rural KwaZulu Natal, Afribike has partnered up with V3 Consulting Engineers, who will assess the current infrastructure in the region and provide recommendations to improve accessibility and safety. Dedicated bicycle infrastructure is not yet in the cards for KwaZulu Natal; the current goals are to improve accessibility and safety at crossings of streams and major roads, and increase the visibility and awareness of cyclists with reflective material and signage.

Afribiking to Save the Black Rhino

South Africa's game reserves are home to several endangered and rare species including the black and white rhino, the rare mammal species of suni, samango monkey, the pangolin and the shy red duiker. In order to protect these species from poachers and monitor important biological indicators dedicated field rangers patrol the parks boundaries and sensi-

tive habitat sites. Most rangers, bereft of transportation, walk several kilometers per day executing their daily duties.

Bicycles were identified as a crucial component in the fight to save endangered species, as they could provide rangers and wardens with a much-improved ability to patrol the park perimeter, as well as enable timely access to "problem areas" where poachers typically enter the reserves. Bicycling is better than walking because bicycle-equipped rangers are three to four times faster and provide a more active presence along reserve boundaries.

From June 18-21, 2000 Afribike provided 25 bicycles to 25 game rangers of the Ndumo game reserve, home to the endangered Black Rhino. The bikes were donated by Royal Mail, the United Kingdom's Post Office, which is donating its old stock to Afribike via Re-Cycle, a bicycle recycling NGO based in the UK. Sam Soni, Afribike's Master Mechanic and apprentice Kehn Hlagala trained the rangers in riding and bicycle maintenance while Marko Ludeking and Erik Rouwette, two Dutch exchange students at the University of the Witwatersrand, helped out.

Mobilizing the first 25 rangers in the Ndumo is the first stage of a larger program in which Afribike hopes to equip 200 rangers in Ndumo and Umfolozi game reserves, both located in South Africa's KwaZulu Natal province. The larger program will also entail an outreach component in the local communities surrounding the reserves, where bicycles could enable access to markets, services and schools.

Afribike Senegal, Guinea and Ghana

Afribike is currently expanding the geographical focus of its work to the West African countries of Senegal, Guinea, and Ghana. Prior to project implementation, Afribike undertook a one-week Afribike Training Course (for local project partners), and a one-week scouting mission to meet with local stakeholders, gather information, and devise strategies to increase cycling. (The reports of these missions are available on ITDP's website.)

In July 2000, Afribike will begin to implement projects in Senegal and Guinea with local NGO partners. The Ghana project will start in 2001. The projects include a number of innovative aspects including the sourcing of new bicycles based on technical input from local users, significant involvement of private-sector bicycle companies, widespread micro financing of bicycles via local NGOs and credit institutions, and in the case of Senegal, concurrent labor-based bicycle infrastructure construction. The projects in Senegal, Guinea and Ghana are being financed by respective national governments through loan agreements with the World Bank.

The bicycle is a crucial component in the fight to save endangered species, as it can provide rangers and wardens with a much-improved ability to patrol the park perimeter.

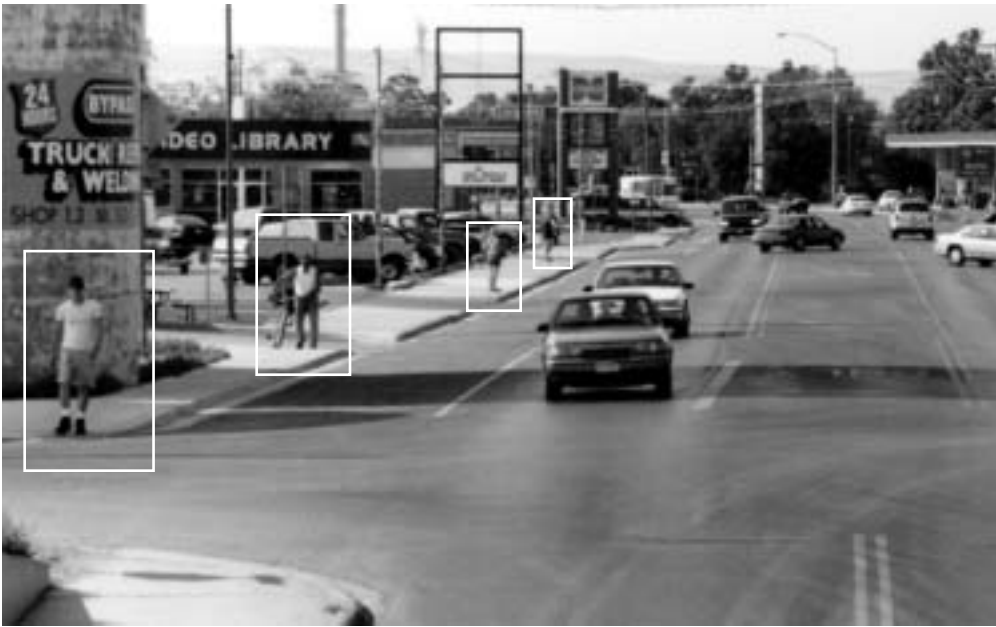
Paul S. White is the Africa Program Director for the ITDP. Paul received his Master's degree in Environmental Science from the University of Montana in Missoula. Paul commutes by bicycle from his home in Prospect Heights, Brooklyn to ITDP's midtown Manhattan office, a trip that will get much easier with the opening of the Manhattan Bridge bicycle lane next month.

Paul also volunteers for Transportation Alternatives, the NYC advocates for cyclists and pedestrians.

Reprinted with permission from *Sustainable Transport #11*, a publication of the Institute for Transportation & Development Policy.

For more information on Afribike, visit the organization's homepage: <http://www.afribike.org/>





based on individual pedestrian needs.

Ries says that the time allowed for a pedestrian crossing is typically based on a walking speed of four feet per second. Many pedestrians easily cross the street in this amount of time, which means traffic is stopped longer than is necessary when no one is in the crosswalk. But other pedestrians, particularly the elderly and the disabled, need more time to cross.

This system, says Ries, will not only improve safety for the pedestrian, but will also improve the efficiency and flow of vehicular traffic at intersections.

TRACKING PEDESTRIANS

From Volume 1, Issue 2 of the ITS Institute Sensor, University of Minnesota.

You're crossing the street at a busy intersection when, half way to the other side, the signal changes from "Walk" to "Don't walk." Perhaps you started out late, or were walking slower than usual. Whatever the case, you're now in the path of oncoming cars.

A new system developed by researchers at the University of Minnesota may solve that problem by automatically detecting pedestrians in a crosswalk and extending the walk signal (and stopping traffic) until they've safely cleared it.

"We believe we can help prevent accidents," says associate professor Nikolaos Papanikolopoulos of the Department of Computer Science and Engineering, who, with graduate student Osama Masoud, created the system. The idea, Papanikolopoulos says, came from Gary Ries, traffic signal engineer at the Minnesota Department of Transportation (Mn/DOT), who was familiar with Papanikolopoulos' previous

research on video-based detection of cars. Ries proposed developing a similar method for pedestrians that improved upon the drawbacks of current devices.

"I thought something better might be possible," he says. Ries explains that most traffic signals respond to vehicles and adjust accordingly. However pedestrians, unlike cars, are not automatically detected, nor does pedestrian signal timing vary

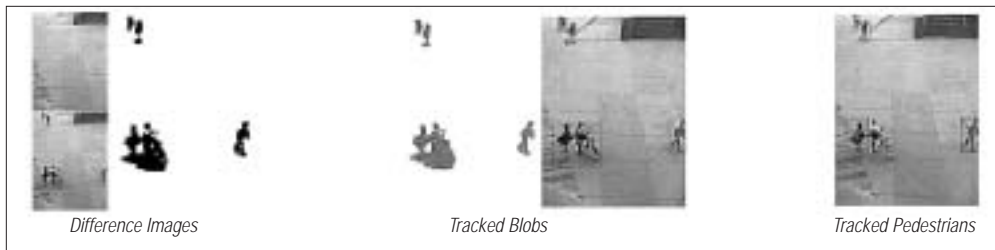
How it works

Although detecting pedestrians in a crosswalk is easy for the human eye, performing the same task with a computer requires a complex program that can detect moving objects. For this, the researchers use a regular video camera to collect data and a Pentium-based PC with a Matrox Genesis board to process it.

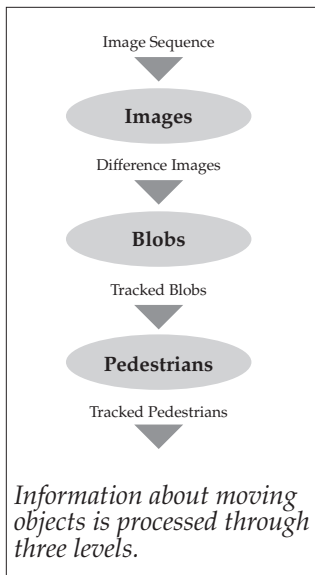
The camera, mounted in an arbitrary position, captures an image of the background,

Pedestrians, unlike cars, are not automatically detected, nor does pedestrian signal timing vary based on individual needs.





Above: How moving objects are tracked.
Below: Pedestrian tracking in the crosswalk.



in this case the crosswalk scene, without movement. This background image is processed and stored in the system, then updated throughout the day according to changing light and weather conditions.

The process considers images as groups of either figure pixels, belonging to a pedestrian, or ground pixels, belonging to the background. The researchers assume that uninteresting objects, such as the crosswalk, are displayed by pixels whose intensities are constant or change very slowly over time.

But an interesting object, such as a pedestrian, would be located where pixel intensities have recently changed. Thus, by identifying and analyzing figure pixels in each image of a sequence over time, the system receives information about the existence of pedestrians.

This takes place on the first, or image, level of processing. From the sequence of raw images, the system produces a sequence of difference images by separating the figure pixels from the fixed background image.

These difference images are then passed on to the second level, where they are segmented to obtain "blobs." In this level, the system tracks blobs, without regard to what or whom they represent, then passes them on to the final level—the pedestrian level.

In the pedestrian level, relations between pedestrians and tracked blobs, represented by an undirected bipartite graph, as well as information about pedestrians, is inferred from previous information. By using Kalman filtering, the system can predict and estimate pedestrian attributes.

These include the spatio-temporal coordinates (location, velocity, etc.) of each pedestrian while the pedestrian is visible—which constitute the output of the system as a whole.

The system can operate in diverse weather conditions, including rain and snow, but sunny days present the biggest challenge. "Shadows are a tricky issue," Papanikolopoulos says, because the system may be confused by shadows cast by an adjacent building or passing vehicle. He says the most effective way to deal with the problem is to know the geometry and the surroundings of the area being monitored.

The research project culminated in a field test of the system last fall at an intersection on campus, which allowed researchers to learn how it handled various simple and complex pedestrian scenarios, including different walking speeds, partial and full obstructions, and pedestrians meeting and passing each other. Papanikolopoulos was pleased with how the system performed, citing the 90 percent accuracy it achieved in detecting humans and triggering the signal to allow pedestrians time to cross.

For this experiment, the system activated a flashing signal rather than a red light at the crosswalk. Papanikolopoulos explains that stopping vehicles or otherwise interfering with traffic brings with it safety and liability risks that no one is yet willing to

take on, making it an issue "more complicated than the research itself."

One possible solution, he says, is for the team to find an industrial partner, (e.g., a consulting company with traffic control experience) to evaluate and test the system and to eventually commercialize it.

Because of its cost, and its failure to work well in highly crowded situations, the system's implementation in the field will most likely be limited to specially selected sites, Ries says. Sites may be chosen based on the age mix of pedestrians, volume of pedestrians, and width and complexity of the crossing.

Meanwhile, the researchers will continue to refine the system and expand its potential for other applications. The system has already evolved for use for more complicated tasks, such as counting people and detecting specific activities like walking or running. Another potential safety application is its use for detecting children near a school bus, Papanikolopoulos says. Most commercial interest so far has come from those wanting to collect data—for example, to determine how many people in a shopping center use a particular area. "All of these are basically the same thing—detecting and tracking humans," he says.

Copyright © 2000 Reprinted with permission from the ITS Institute, University of Minnesota (www.its.umn.edu).

Bicycles in the

Millennium Manual on Uniform Traffic Control Devices



by Richard C. Moeur, P.E.

Every first week of January, the National Committee on Uniform Traffic Control Devices (NCUTCD) meets in Arlington, Virginia to make recommendations to the Federal Highway Administration (FHWA) on traffic control standards for the US. These standards are published in the Manual on Uniform Traffic

Control Devices (MUTCD), which is the "bible" for traffic engineers in the US.

The League of American Bicyclists (LAB) is a sponsoring member of NCUTCD, giving it a vote on the full National Committee. I serve as LAB's voting representative, and Sue McNamara of Philadelphia serves as LAB's

alternate voting member.

The actual work of developing the traffic control recommendations is done by technical committees, comprised mainly of highly experienced traffic experts from across the United States (and elsewhere). LAB members such as myself are active in the Bicycle Technical Committee (BTC), which focuses its efforts on Part 9 (Bicycle Facilities) of the MUTCD and other areas of the Manual that affect bicycle travel.

On December 18, 2000, the FHWA published the new 2000 edition of the MUTCD. This edition is a complete top-to-bottom revision and rewrite of the Manual, improving the structure and technical guidance of this document based on considerable input from NCUTCD and others.

Another change that NA has instituted is to ensure that the electronic version of the MUTCD, published in PDF format at <http://mutcd.fhwa.dot.gov/> is the official version for use. FHWA will make changes and revisions much easier for NCUTCD, since all they will need to do is simply update the official electronic copy. So, FHWA has stated that they intend to revise the MUTCD on an annual basis, issuing notices of proposed rulemaking in late spring of each year, and final rules and updates near the end of each year. This will be a significant change from the past, when the MUTCD was only fully updated every 7-10 years.

The work of the NCUTCD Bicycle Technical Committee at this January meeting consisted of reviewing the final MUTCD as published by FHWA.

The BTC noted that the final Part 9 (Bicycle Facilities) adopted many recommended changes made by the BTC in earlier submittals to FHWA. These include:

- *Bike lane markings that now use a bicycle symbol, and not the old diamond symbol*
- *Improved figures showing bike lane striping applications at intersections*
- *Substantial revisions in wording that clarifies the use of bicycle-specific traffic control devices in many different applications*

However, there were some areas in which the final MUTCD differed greatly from the committee's recommendations:

Guidance missing on bike lanes at interchanges.

I think there is a vast improvement in the bicycle section over previous years. It is more user friendly and provides better direction and guidance in areas previously addressed. It was good to see some direction in marking multi-purpose trails addressed. The one thing that I looked for and didn't see was some guidance on bike lane striping at interchanges. This is one where we will see either nothing done to assist bicyclists and motorists through the area together or the designs are inconvenient or dangerous and less likely to be used.

All in all I think the committee did a good job in putting this section together. Hopefully this will reduce some of the bizarre and confusing designs that we see on bicycle facilities around the country.

On the pedestrian side I still think the warrants for installing a pedestrian signal are too high.

—Mark Horowitz

- *Bike lane signs - the signs adopted by FHWA were not the ones recommended by NCUTCD, and some of the signs shown (specifically the R3-17a) could be very misleading to road users*
- *Many figures were changed to make optional items mandatory, or incorrectly showed typical applications*
- *Many sections used different wording than that recommended by NCUTCD, which in some cases greatly changed their meaning and application*
- *Traffic signal timing on bikeways only needs to "consider" bicyclists, whereas NCUTCD requested that it should "accommodate" bicyclists*

Other items requested by NCUTCD were completely left out of the MUTCD, including:

- *Bicycle Wrong Way signs*
- *Signing and markings for signal detection by bicycles*
- *Prohibition of raised devices for marking bike lanes*

FHWA stated that although they did not disagree with many of the recommendations made by NCUTCD, rule-making requirements prevented them from adopting new items that were not in the original notice. FHWA invited NCUTCD to resubmit the items listed above that were previously rejected on procedural grounds for possible inclusion in this year's rulemaking on the MUTCD. These have been resubmitted to FHWA, and we anticipate seeing these published in the Federal Register as proposed amendments to the MUTCD in late spring of this year.

Including definitions helps prove bicycles are vehicles.

The MUTCD's new formats (3-ring binder, CD-ROM, and on the Web) will make it easier to amend and update, as FHWA has advertised. With the old MUTCD, people were stuffing copies of amendments into files and losing track of them.

Section 9B.03's guidance on assignment of priority at a shared-use path/roadway intersection should be extremely helpful. Although the principles had been published in the old Traffic Control Devices handbook, now out of print, few designers seemed to be aware of them, and the use of STOP signs to control shared-use path traffic at all roadway intersections (even at slow-moving trailhead parking lot intersections) had become so reflexive, it was practically viewed as a no-brainer (as it indeed was).

The new list of definitions in Part 1 eliminates the need to refer to the UVC to prove that a bicycle is a vehicle. Section 2B.07, taking no chances, explicitly provides that bicycles on an intersection's minor street approach (which could also be a path) be counted toward satisfying the minimum traffic volume criterion for a multi-way stop application.

The new Euro-style yield line markings described in Section 3B.16 can be used where YIELD signs would be acceptable on the shared-use path approach of a roadway intersection. Unfortunately, although Fig. 3B-14 specifically mentions such possible use on shared-use paths, the markings aren't mentioned or shown in Part 9.

—Dwight Kingsbury

The Manual is basically a Catch 22 for cyclists.

The very best thing I can say about the MUTCD 2000/Traffic Controls for Bicycle Facilities comes on the first page of Chapter 9. Under the subhead Scope under the heading General, the MUTCD states this:

Standard: None of the bikeway designations in this Manual shall be construed to preclude permitted bicycle travel on roadways that do not have bikeway designation.

This Manual is basically a Catch 22 for cyclists. Even the very best efforts at better bicycle signage often results in the reinforcement of the motorist's (and engineer's, and planner's) idea that bicycles don't belong on the public roadway.

I believe that one of the most serious problems with the MUTCD's approach to bike route signage continues to be that it is based upon the 1970's concept of recreational, non-destination oriented bike routes.

But on the positive side, the Millennium MUTCD does a much better job of dealing with Shared-Use Path crossings of streets than I have seen in the past, although there seems to be much work left to be done. Roundabouts and Speed Humps also are better addressed than in past editions.

—P.M. Summer

Richard C. Moeur is a traffic engineer with the Arizona Department of Transportation and a Voting Member of the National Committee on Uniform Traffic Control Devices (NCUTCD), representing the League of American Bicyclists.

Mark Horowitz is the Broward County, Florida, Bicycle Coordinator.

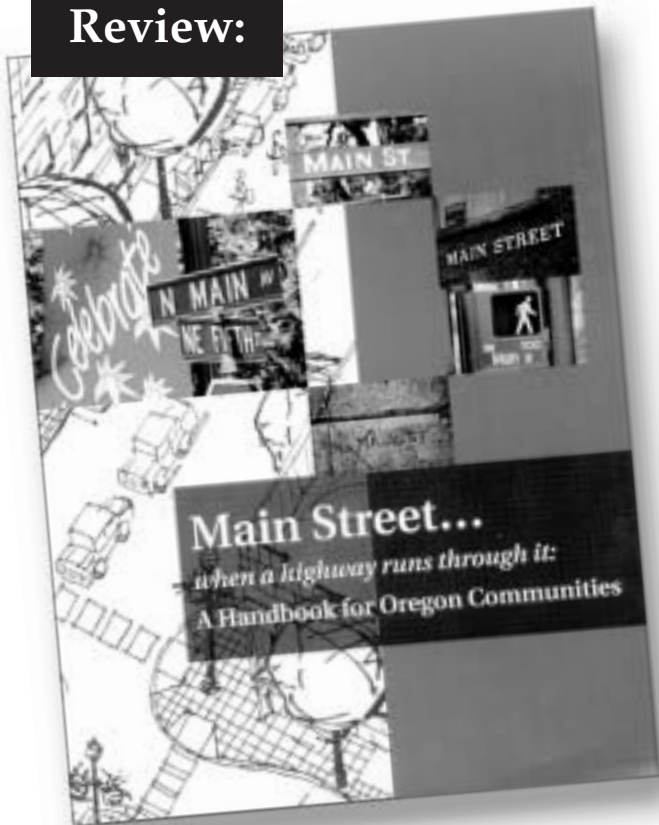
Dwight Kingsbury is the Assistant Pedestrian/Bicycle Coordinator with the Florida Department of Transportation.

P.M. Summer is the Transportation Alternatives Coordinator for the City of Dallas, Texas.

Where can you get the MUTCD?

Go to the FHWA's Millennium MUTCD website and download chapters at:
<http://mutcd.fhwa.dot.gov/kno-millennium.htm>

Review:



OREGON'S MAIN STREET HANDBOOK

by Paul Cartwright

There's a new (sort of) book about reclaiming main street, which deserves wider circulation. Late last year, the Oregon Downtown Development Association published the Main Street Handbook.

The handbook, through graphics, case studies and straightforward descriptions, illustrates what towns can do if their main street is also a state highway. It appears to be aimed at smaller towns but the handbook applies to any traditional commercial district that sits on a major arterial. Think of it as a best design practices for street-scapes at the center of town.

The hook that makes this book stand out? The Oregon Department of Transportation (ODOT) was heavily involved

in the project's steering committee. Yet the stated purpose of the handbook is improving the quality of life in the heart of the community by reclaiming main street.

The opening discussion even allows that in recent decades highway engineers have emphasized mobility to the detriment of access. Perhaps ODOT is a little different than the departments of transportation in other states.

The handbook has useful design hints about how to deal with the problem of balancing highway through-traffic and the commercial and pedestrian activities found along most "Main Streets."

You may be familiar with many of the ideas and graphics, but possibly not with them expressed so clearly in

lay terms.

And some of the illustrations may be new: The pictures illustrating the changes in how a driver focuses on the streetscape at different speeds were far more compelling than any set of AASHTO tables.

The handbook starts with process, how to design a plan for a main street. It moves quickly to the elements of a streetscape and how to identify what the real problems are. The heart of the handbook then covers different design approaches to the elements that make up a streetscape—roadway, sidewalk and buildings—and how they can be combined to make a main street that works. That's followed by a discussion of how to pay for it, useful mostly if you're in Oregon. The handbook concludes with three real world projects and three scenarios of typical main street problems and their solutions.

The handbook does deal realistically with the need to accommodate ODOT's responsibilities. It never forgets that main streets often are major regional arterials. The handbook is more a set of illustrations than a set of design guidelines. Those guidelines are in the ODOT Highway Design Manual.

The rewrite of the state's Design Manual, now slated for completion by the end of next year, will incorporate a much more thorough section on urban design, including greater sensitivity to the land use environment through which a highway passes.

The Main Street Handbook should help a community — and engineers — appreciate the wide range of design solutions that are consistent with ODOT's mission.

The opening discussion even allows that in recent decades highway engineers have emphasized mobility to the detriment of access.

Paul Cartwright works on Smart Growth and transportation issues in Montana.

The handbook was funded primarily by the Transportation and Growth Management Program, a joint program of the ODOT and the Oregon Department of Land Conservation and Development. The handbook is available for \$25 from Oregon Downtown Development Association (PO Box 2912, Salem Oregon 97308, 503-587-0574, info@odda.org).

0. Looks like Dave Harkey, <david_harkey@unc.edu> will take over as editor of Update. Mac will be available to help the transition.
1. Items from Shoulder Rumble Strip (SRS) Panel Discussion, ProBike 2000, Philadelphia, 9/6/00:
- 1a. Richard Powers, <richard-powers@fhwa.dot.gov>, is heading development of FHWA SRS policy guidelines. Grouping shoulders into 3 categories by widths. 10 ft and wider, SRS OK. 4 ft to 10 ft wide, use SRS only when warranted. Less than 4 ft wide, do not use SRS. Hoping to place narrow rumbles within lane edge stripe on the narrower shoulders, (say shoulders 4ft to 8 ft wide), or as close as possible to edge stripe, to minimize amount of shoulder and clean surface lost to bikes. (See Item 4 for narrow strips in Ariz). Awaiting reports from Colorado and Calif testing (Items 2 & 3 this Update), before firming up guidelines. Comments from floor generally favorable to Powers' proposals.
- 1b. Title of completed PennDOT SRS study by Penn State, was changed from "Bike Friendly Rumble Strips" to "Bike Tolerable Rumble Strips." Explanation: bikes not intended to bike in rumble strips, just to bike across them. Comments from floor: RS are ground into existing bikeable shoulders, reducing remaining width and placing cyclist into debris covered area of shoulder, often requiring cyclist to move out of that remaining width. If traffic conditions don't permit cyclist to enter or remain in travel lane for lengths of time, cyclist is forced to remain in RS for more than crossing time. RS tolerable only for crossing don't address problem of lost shoulder space or lost clean space. RS need a min. amount of bike rideability.
- 1c. Other comments: Change name/goal from Bike "Friendly" to Bike "Compatible" RS. Cyclists seemed not to view any RS as Friendly to bikes.
- 1d. Elliott brought up problem of RS labeled as Safety benefit for cyclists, and promoted as good to have everywhere. Presented study concluding that on narrower shoulders, odds of rumble strip forcing cyclist to leave shoulder create a risk of cyclist being hit by overtaking motorist many times higher than risk of cyclist hit by dozing motorist on shoulder without RS. Narrower shoulders with rumble strips more hazardous for bikes than same shoulder without RS. Copy of study available from Elliott..
- 1e. Mike Ronkin, Oregon bike program director, said later: "Rather than spending more time on hypothetical outcomes of RS on crash avoidance get back to the reality that RS are ruining what were very good highways for bicycling, and try to get a handle on where we are putting them".
- 1f. John Williams also in later comment stated that, "Back in the 80s I suggested considering rumbles as counter-measures, rather than standard design features. I'm not convinced this is happening."
- 1g. Transp Engr from Netherlands was puzzled by controversy. If bikes needed certain widths in Holland, nobody would reduce widths, any more than they would reduce necessary m.v. lane widths. Felt we were going at things all wrong, trying to rationalize narrower widths as OK.
- 1h. Martha Roskowski, of Bicycle Colorado, <martha@bicyclecolo.org> and Panel Moderator Tim Young <tyoung@wyoming.com> both reported Colorado DOT testing milled-in patterns similar to rolled-in tractor tread designs with hopes that milling would solve quality control problems of rolled-in rumbles. See Item 2 below.
2. Colorado DOT tested milled in tractor tread RS grooves 2" wide in direction of travel, spaced at 5", 7", and 12" o.c. All quite bikeable. 1" deep half round grooves rolled into concrete at 3" o.c. very bikeable. Milled in divots at 12" o.c., 5" wide in direction of travel by 3/8" deep, (latest PennDOT recommendation), gave jolting bike ride. 1/4" and 1/8" deep milled in divots were progressively less harsh. Results not yet out on testing with motor vehicles. Full report expected first of year. Skip Outcalt, <skip.outcalt@dot.state.co.us> heads research team.
3. Report and Recommendations from CalTrans rumble strip testing due out by Dec 1. (June HPT Update Item 2), Contact Troy Bucko at <Troy_Bucko@dot.ca.gov>
4. Arizona DOT presently milling in divots 1/2" deep by 7" long in direction of travel, at 12" o.c wherever rumbles are used. Divots are 12" wide transverse to direction of travel on freeway shoulders. Divots are 8" wide for non freeway shoulders greater than 5 ft wide. Divots are 6" wide and placed within edge stripe at shoulders less than 5 ft wide. Normally no rumbles when shoulders less than 4 ft wide, but sometimes used when felt warranted by run-off-road crash data. (Can be problems for bikes there). 10 ft long gaps at 40 ft o.c..are optional at all non-freeway SRS.
5. Recently released Utah DOT study, "Application and Evaluation of Rumble Strips on Highways", assumes run-off-road angle of 30 degrees, (instead of say, 3 degrees), and concludes RS should be as wide as possible in order to be effective. A misleading conclusion. Rumble strips need not be wide to be effective. No rumble strip can affect a 30 degree departure. e.g. at 50 mph a vehicle would be across entire 8 ft wide shoulder in 0.2 sec, giving no time for reaction even if RS were full width of shoulder. 30 degree angles are used to test crash barriers, etc. They are not applicable to rumble strip issues.
- Mac Elliott

HPT.COM Webmaster's note: We all owe Mac a huge thank you for over 10 years of work as newsletter editor and the glue of the committee —THANKS MAC!

HPT COM is Mac Elliott's shorthand for the Human Power Transportation Committee of the American Society of Civil Engineers (ASCE). Mac has long edited the Committee's Update newsletter, available from the Committee's website: <http://ourworld.compuserve.com/homepages/kbarrett/asce-hpt.htm> Mac's compact style of writing means you'll get more information per 100 characters from the Update than from just about any other source on the planet! Thanks, Mac and David Loutzenheiser, the HPT committee chair!

Contact: Mac Elliott 2530 San Elijo Ave. Cardiff, CA 92007
email: <melliott@primenet.com>

Selected Listings from CenterLines, our e-newsletter...

Addressing Barriers to Blind Pedestrians at Signalized Intersections Results of a survey of Orientation and Mobility Specialists regarding the problems students with visual impairments experience at signalized intersections.

<http://www.ite.org/library/J1B00A32.pdf>

A Citizen's Guide to Transportation Decision-Making An FHWA/FTA guide for citizens to help them understand federal requirements in the transportation decision-making process.

<http://www.fhwa.dot.gov/planning/citizen/index.htm>

Community Design and Transportation Policies: New Ways to Promote Physical Activity An article in "The Physician and Sportsmedicine" (Vol 29, #2 February, 2001), by Rich Killingsworth of the CDC.

http://www.physsportsmed.com/issues/2001/02_01/killingsworth.htm

Competing in the Age of Talent: Environment, Amenities, and the New Economy Jan. 2000 study by Richard Florida of Carnegie-Melon University on the amenities that attract technology workers. Participants preferred regions "with easy access on foot, bicycle, or via public transportation."

<http://www.heinz.cmu.edu/~florida/talent.pdf>

The Computer Commuter: Neighborhood Transit for the 21st Century Presentation by Anton Nelessen on Neighborhood Transit, an alternative transportation concept that would "put service within walking distance of 100 percent of all origins and destinations, regardless of density..."

<http://www.bts.gov/tmip/papers/tmip/udes/nelessen.htm>

The Design of New Urbanist Streets 20-page report by C. "Rick" Chellman, P.E., for the Urban Land Institute. "New Urbanist projects include the design of streets that create an environment where drivers will realize that to drive too fast or too aggressively is inappropriate, anti-social and, perhaps most effectively, uncomfortable..."

<http://www.tndengineering.com/papers/ULI-4-2000.pdf>

A Different Route to Health: Implications of Transport Policies British Medical Journal article by Carlos Dora: "Estimates of the health impacts and costs of transport strategies do not include health effects of increased walking and cycling and savings associated with increased walking and cycling for a population..."

<http://www.bmj.org/cgi/reprint/318/7199/1686.pdf>

The Effects of Road Design on Speed Behaviour: A Literature Review A sub-task report of the MASTER project (see bottom of next column), "...an overview of the efficacy of various speed reducing measures. Measures that affect driving speed directly are discussed, but special attention is paid to factors that affect driving speed indirectly, i.e. by influencing the willingness to show the appropriate speed behaviour. Advantages, disadvantages of various measures are discussed..."

<http://www.vtt.fi/yki/yki6/master/rep231.pdf>

Electronic Toolbox For Making Intersections More Accessible For Pedestrians Who Are Blind Or Visually Impaired Information useful to creating intersections that are more accessible to pedestrians who are blind or visually impaired.

<http://www.ite.org/library/accessibleint.htm>

Entry Treatments UK Dept. of Environment, Transport and Regions Traffic Advisory Leaflet discusses designs "...developed for use at side roads so that drivers leaving a major road are in no doubt that they are entering a road of a different character. The treatments are a form of gateway..." Lots of photos!

http://www.roads.detr.gov.uk/roadnetwork/ditm/ta/traffic/02_94/index.htm

Influence Of Changing Travel Patterns On Child

Death Rates From Injury: Trend Analysis British Medical Journal article by DiGiuseppi, Roberts, and Li, points out that "Substantial decreases in deaths from road traffic accidents for pedestrians and cyclists were at the expense of walking and cycling activities. Car travel became safer for children, but the effect on mortality was largely nullified by large increases in the distances children travel by car..."

<http://www.bmj.org/cgi/content/full/314/7082/710>

Influence of Travel Patterns on Mortality from Injury among Teenagers in England and Wales, 1985-95: Trend Analysis "The 32% decline in mortality from unintentional injury among people aged 15-19 since 1985 is largely due to falling mortality among motorcyclists, pedestrians, and cyclists. These declines correspond to large decreases in motorcycling, walking and cycling..."

<http://www.bmj.com/cgi/content/full/316/7135/904>

Injury Patterns in Cyclists Attending an Accident and Emergency Department: A Comparison of Helmet Wearers and Non-Wearers 1994 article about helmet study published in the British Medical Journal, "The findings suggest an increased risk of sustaining head injury in a bicycle accident when a motor vehicle is involved and confirm protective effect of helmet wearing for any bicycle accident."

<http://www.bmj.com/cgi/content/full/308/6943/1537>

In-Roadway Flashing Lights at Crosswalks: an Informational Report ITE report on In-Roadway Flashing Light Crosswalk Warning System: history, devices, installation, activation methods. Pub. #. IR-105 (20p.). Members \$15.00, non-members \$20.00. ITE online bookstore.

<http://www.ite.org/>

Is It Safe? A Guide to Road Danger Reduction Traditionally, road safety professionals have sought to help people cope with danger. The Road Danger Reduction Forum seeks to reduce danger at its source.

<http://www.spokes.org.uk/isitsaf1.htm>

Managing Speeds of Traffic on European Roads "The aim of the project MASTER [acronym for above title] is to produce information that can be used in the preparation of national and EU decisions concerning speed management and speed control equipment standards. It is expected that by adequate speed management traffic safety can be improved without excessively degrading mobility and the overall effectiveness of road traffic can be improved. The project MASTER seeks for answers to three key questions: (1) What are the acceptable ranges of speeds?(2.) What are the key factors influencing drivers' choice of speed? and (3.) What are the best management tools and strategies?..."

http://www.vtt.fi/yki/yki6/master/master_finalreport.pdf

Our Built and Natural Environments *In this "Technical Review of the Interactions between Land Use, Transportation and Environmental Quality," EPA summarizes research on the relationship between the built and natural environments, as well as current understanding of the role of development patterns, urban design, and transportation in improving environmental quality.*
<http://smartgrowth.org/library/built.html>

Pedaling Health: Health Benefits Of A Modal Transport Shift *By Ian Roberts, et. al; presents medical research on benefits of cycling for transport.*
<http://www.sciweb.science.adelaide.edu.au/sundries/ph.nsf>

Pedestrian Control For Closure Of Sidewalks *Diagrams with notes on how the Florida Department of Transportation recommends dealing with work zones and pedestrian access.*
<http://www.dot.state.fl.us/rddesign/rd/rtds/00660s01.pdf>

Pittsburgh Streetscape Components Catalog - The Walkable City Project *Proposes a new set of pedestrian wayfinding signs that could be integrated with a modular system of street furniture. Also compiles and consolidates the set of Downtown Streetscape Construction Standards for curbs, sidewalks, lights, etc. developed by the City of Pittsburgh and other stakeholders over the last ten years.*
<http://www.city.pittsburgh.pa.us/downloads/documents/StScpCat.pdf>

Postings And Reviews Of Bicycle-Related Research *New section of John Allen's website devoted to discussing bicycle-related research.*
<http://www.bikexpert.com/research/index.htm>

Putting the Brakes on Sprawl: Innovative Transportation Solutions from the U.S. and Europe *Nov. 1999 report by the Tellus Institute and David Gurin examines innovative transportation practices in six cities — practices that can lessen sprawl's impact on neighborhoods and the environment.*
<http://www.tellus.org/energy/publications/brakesonsprawl.pdf>

Rails-With-Trails: Design, Management, and Operating Characteristics along 61 Active Rail Lines *The Rails to Trails Conservancy's Nov. 2000 report, produced in cooperation with the National Park Service Rivers, Trails and Conservation Assistance Program.*
http://www.trailsandgreenways.org/TAG_Documents/OnlineReferences/6-1.pdf

The Appendix is at:
http://www.trailsandgreenways.org/TAG_Documents/OnlineReferences/6-2.pdf

A Short History of Physical Speed Reduction Measures in European Urban Areas *Brief article by Nicole Muhrad of the National Research Institute for Transportation and Safety (INRETS), Arcueil, France "In Europe, 'traffic calming' is gradually becoming a regular part of urban traffic management, but this comes after a long evolution of opinions and attitudes towards car use and vulnerable road users. The evolution was faster in some countries, more progressive in others, but followed the same trend everywhere..."*
<http://www.ictct.org/workshops/00-Delhi/Muhrad.pdf>

State of the Practice: Rails-With-Trails *Revised draft of "State of the Practice," report on rails-with-trails; sponsored by U.S. Department of Transportation (Federal Railroad Administration, Federal Highway Administration, Federal Transit Administration, and National Highway Traffic Safety Administration).*
<http://www.altaplanning.com/fhwa/index.html>

Sustainable Transport and Development *Essay by David Mozer and Brenda Thickett of the International Bicycle Fund. "...Finding a sustainable system in transport will require bigger lifestyle changes than reducing water use with low-flow toilets, reusing beverage bottles and recycling paper..."*
<http://www.ibike.org/sus-tran.htm>

Three Lessons for a Better Cycling Future *According to Malcolm Wardlaw, author of this article from the British Medical Journal (23_Dec., 2000), "Cyclists were the only group of road users in Britain whose death rate increased sharply during the 1990s, yet cycling was in decline throughout the decade. How could this happen, when attention on casualties was the most intense in the history of the bicycle? Perhaps a vision of the near future will be instructive..."*
<http://www.bmj.org/cgi/content/full/321/7276/1582>

Village Traffic Calming *A new Traffic Advisory Leaflet from [Britain's] Transport Research Laboratory (TRL) to assess effect on accidents of traffic calming measures in a number of villages.*
<http://www.roads.detr.gov.uk/roadnetwork/ditm/tal/traffic/00-11/index.htm>

The VTPI Online TDM Encyclopedia *The "first comprehensive Internet tool for Transportation Demand Management planning." Free at the Victoria Transport Policy Institute website.*
<http://www.vtpi.org>

To get your publications listed in the NCBW Forum Library, send a copy along with ordering information to:

*NCBW Forum
PO Box 8311
Missoula MT 59807*

To subscribe to our FREE e-newsletter, CenterLines, send a blank email to <CenterLines-subscribe@topica.com>

Non-Profit Org.
 US POSTAGE
 PAID
 Missoula, MT
 59801
 Permit #569

**Forwarding & return
 postage guaranteed**

Name _____
 Street Address _____
 City _____ St _____ Zip _____

Subscribe to NCBW FORUM TODAY!

What do we cover?

Consider these recent topics...

- Tips for working with trail opposition...
- Video tracking and pedestrian signals...
- Effective bicycle advocacy in South Africa...
- Who's the new head of California DOT...
- Bicycles in the new MUTCD...
- Oregon's main street handbook...
- Highway rumble strips and bicycles...

...and there's a lot more coming!



Subscription Rates

Check category	4-issues	8-issues
Domestic	___ \$30.00	___ \$55.00
Canada and Mexico	___ 33.00us	___ 60.00us
Overseas	___ 35.00us	___ 65.00us

All prices in U.S. funds

Send to:

National Center for Bicycling & Walking
 1506 21st St., NW, Suite 200
 Washington DC 20036-1008

Yes, I would like to subscribe to **NCBW Forum**, the journal for walking and bicycling advocates and professionals! I understand that if I am ever dissatisfied, I may cancel my subscription and receive a full refund for all undelivered issues.

New subscriber Renewal #F _____

My payment of \$_____ is enclosed.
 (Please make checks payable to the National Center for Bicycling & Walking)

Name _____

Address _____

City _____ State _____ Zip _____