CITIZEN PARTICIPATION IN BICYCLE PLANNING FROM THE PUBLIC AGENCY'S VIEWPOINT: WHY AND IS IT WORTH THE EFFORT?

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Citizen participation is critical to the development of a sound traffic system plan that serves all segments of the public. Cyclists are a segment with unmet needs who can greatly assist in developing and consequently supporting such a plan. This paper examines the reasons that many highway departments lack good bicycle-related knowledge. The characteristics of today's bicyclists and their needs are presented, along with a discussion and evaluation of bikeway design criteria. The following courses of action are recommended to attract broad public support and increase traffic safety: (a) initiate a program to reduce the serious hit and run problem, (b) enforce regulations controlling motor vehicle emissions, (c) make pedestrian and bicyclist access part of new traffic system improvements, (d) provide safe, attractive bicycle paths, and (e) assign agency personnel and resources to the bicycle field and include them in decision making. The circumstances of Chief Justice Warren E. Burger's bicycle accident are examined, and it is revealed that the causal factors were the responsibility of public agencies. The methods for eliminating these factors have been well-documented.

•IS CITIZEN PARTICIPATION worth the effort? Are state highway departments biased against bicycles? Who are today's bicyclists, and what do they desire? What positive actions can state and local governments initiate quickly and ensure broad support? Those are the questions that seem especially relevant to the topic of citizen participation.

ARE STATE HIGHWAY DEPARTMENTS BIASED AGAINST BICYCLES?

Are state highway or transportation departments biased against bicycles? Yes, of course. First, look at training. Although there is a very large body of knowledge on bicycle planning in Europe and a rapidly emerging one in the United States, traffic engineers and allied professionals receive almost no training in this area. For example, Paquette, Ashford, and Wright's 760-page text, Transportation Engineering, devotes one paragraph to bicycling, and that paragraph merely points out that the bicycle craze of the latter nineteenth century contributed to pressure for improved road construction. Matson, Smith, and Hurd's 647-page Traffic Engineering notes that "2 percent of automobile fatalities involve bicycle collision," and spends about a page documenting the problem of children on bicycles. The Highway Capacity Manual and Pignataro's Traffic Engineering do not discuss bicycles at all. This is entirely consistent with the short shrift given buses and pedestrians and is only partly attributable to the recentness of America's bicycle boom. The effect of ignorance is to make the traffic planner wary of bicycle-related facilities.

Next, look at the personal transportation modes of highway department employees. Typically, most ride cars and few ride bicycles. This is unfortunate because of the well-documented correlation between lack of exercise and coronary heart disease (19, 20).

Naturally, the personal experiences, frustrations, and thinking are from the nonbiker standpoint. Despite traffic laws that give bicycles equal rights, the automobile-commuting traffic planner is tempted to view the bicycle as an obstacle rather than as a vehicle with which to share the roadway.

Another point is that decision makers in a highway department are older than the general population and live farther away from work than the general population. Although bicycle commuting is prevalent among all age groups, its incidence is higher among people in their twenties and thirties than among those in their forties or fifties. The question of distance to work is an important one. For planning purposes, I use a radius of comfort of 5 miles (8 km), varying with terrain, weather, and physical ability. Of course, many bikers commute longer distances. The office of the Mayor of the District of Columbia has estimated that 30,000 automobiles are used for commuting distances of less than 3.5 miles (5.6 km). Conversion to bicycles has the obvious potential for reducing traffic congestion. In 1974, the decision makers in the D.C. Department of Highways and Traffic, however, lived in the far suburbs: the director in Potomac, Maryland; the head of traffic engineering in Lanham, Maryland; and the head of planning in Beltsville, Maryland.

The circumstances of the Maryland Department of Transportation are different, and even less representative of the state population. The Maryland DOT is located at Baltimore-Washington International Airport and is accessible by bicycle only from airline departure stations and hangars. All surface approach is via a limited-access superhighway. No wonder no state transportation employee bikes to work; it is impossible. How can Maryland DOT personnel possibly appreciate the commuting experiences of the people they serve when over half of all Marylanders live in a single metropolitan area far away from the airport?

WHO ARE TODAY'S BICYCLISTS, AND WHAT DO THEY DESIRE?

In general, bicycle commuters are not much different from the working population as a whole, except that they tend to be healthier, to some extent, because of their bike riding.

In 1971 the Metropolitan Washington Council of Governments (COG) did a survey of bicycle ridership. Of biking respondents, 61 percent were male and 39 percent were female. The percentage of persons who ride bicycles for transportation purposes (defined as work, shop, or school) is as follows:

Age	Percentage	Age	Percentage
<21	21	31 to 35	16
21 to 25	26	36 to 40	10
26 to 30	21	>40	6

The City Council of the District of Columbia also did a preliminary survey from which it estimated that 6,000 persons commuted by bicycle.

In Washington, people with higher incomes are more apt to ride bicycles than people with lower incomes. I think, however, that it is possible to carry the categorization of bicycle riders too far. A survey in Prince George's County, Maryland, for example, found desire for better biking facilities in all occupational groups. During a research trip in Europe in 1973 (15, 16), I found that biking is not the province of any particular group. Local statistics in the United States may change as biking becomes more broadly based.

What do bikers want? According to COG, "Traffic conflicts, bike storage at destination, and theft were the three overwhelming obstacles facing the respondents in using their bicycles.... Somebody must provide a place to store his bike at the destination,

Table 1. Problem areas identified by bikers.

Problem Area	Percentage of Comments
Necessity of bike paths	32
Need for bike racks	16
Heavy traffic	12
Inconsiderate automobile drivers	11
Inconsiderate bus drivers	5
Smoke and exhaust fumes	7
Hazardous road (bumps and storm drains)	7
Need for education of motorists	6
Other	4
Total	100

Table 2. Reasons for choice of streets for bicycling.

Reason	Percentage of Responses			Weighted Average
	1	2	3	
Least motor vehicle conflict	66.4	19.6	14.0	2.52
Most direct route	59.8	29.2	11.0	2.49
Best road surface	22.1	58.4	19.5	2.03
Least cross traffic	32.1	38.1	29.8	2.02
Most scenic route	30.2	34.9	34.9	1.95
Fewest stop signs	13.5	45.6	40.9	1.73
Least hilly route	13.0	30.2	56.8	1.56

and there must be provided for the cyclist a right-of-way or other means of recognizing bikeways for his use."

According to the D.C. City Council survey, the problem areas most frequently cited by bicyclists are those given in Table 1.

Other similar American surveys have shown similar results, except that the need for bike racks is really a need for a storage area secure from theft. Bike racks are secure only under certain circumstances.

These results do not contain the type of data needed to develop locational criteria for bikeways. To help fill that gap, the Washington Area Bicycle Association conducted a survey in 1973 that asked Washington area bicyclists their reasons for bicycling where they indicated they did. Seven possible reasons were listed, and bicyclists were asked to rank them from 3 (very important) to 1 (not important). The results are given in Table 2.

The rationale ranking highest was least motor vehicle conflict, suggesting that streets with low traffic volumes are chosen where practicable. A very close second, however, was most direct route, which is often an arterial with high traffic volume. Bicycles are attracted to arterials for numerous reasons including direct routes, smooth grades, few stops, presence of commercial areas, and high likelihood that the origin or destination is on or near an arterial. Cars are attracted to arterials for similar reasons. With respect to bikeway location, those alternative criteria may counter or reinforce each other, depending on local traffic networks and topography. As a result, bikers choosing arterials for one or more of the reasons enumerated above will necessarily be increasing the chance of motor vehicle conflict. One method of serving all those needs at once would be to use lower volume side streets near and parallel to arterials as biking streets. That would require a level, parallel grid network, which is lacking in many areas because the side streets do not parallel the arterials or are not continuous. Some level side streets could be made good biking streets by the addition of appropriate linkages such as bridges or connecting paths. Even so, however, they would frequently fail to fulfill the functions for which experienced bicyclists prefer arterials. Research sponsored by the Federal Highway Administration (11) shows, for instance, that bikeways at the sides of arterials would increase bicycle traffic more than bikeways at the sides of collector streets. Respondents were asked whether providing bikeways at the sides of arterials or collectors would increase their use of bicycles. The responses in percentages were as follows:

Street	Yes	No
Major arterial	87.9	12.1
Residential (collector)	67.7	32.3

In other words, the utility of bikeways on arterial streets (as distinguished from collector streets) reflects a preference for the advantages arterials offer all traffic, and the need of bikers is not so much for an alternative to arterials as for a safe means of sharing their use.

IS CITIZEN PARTICIPATION WORTH THE EFFORT?

Citizen participation today bears the relationship to planning that motherhood and apple pie used to bear to politics. Everyone is willing to be quoted in favor. Not only is it impolitic to be against citizen participation, but also seeking public views is a legal or administrative requirement in many projects.

Nevertheless, agencies frequently deter citizen participation through their actions or inactions: failure to connect the public with responsible agency representatives or slow response. Even the public hearing process suffers when notice is little or late, hearings are held in the daytime when most working people cannot attend, and follow-up with participants after the hearing is nonexistent.

Some administrators are perhaps unwilling to become involved in citizen participation because they are unaware of its potential benefits and, instead, view it only as a cumbersome if not abrasive give and take. It is, therefore, necessary, despite the rhetoric in favor of citizen participation, to review its value to transportation agencies and not simply its obvious value to the public.

First, direct contact with and utilization of citizens is far cheaper than use of private consulting services, and is more productive than blind efforts of agency personnel without citizen participation. The typical consultant's proposal for work in the bicycle field involves two elements—(a) a survey or polling of local bicycle riders, and (b) a background information search. Effectively, you are paying the consultant to obtain from citizens information that they have and are willing to transmit directly. Usually, the citizens know firsthand and in specific detail what they desire and are willing, if not eager, to engage in direct communication with representatives of public agencies. Unfortunately, citizens and citizen organizations do not have the financial resources to devote to major, lengthy, time-consuming efforts. However, what is often overlooked is that their financial requirements for such work are much less than the financial demands of traditional consulting organizations.

Many bicycle commuters have high professional qualifications but may be subject to unfair stereotyping by transportation department personnel. Lawyers, scientists, engineers, college professors, and economists are among those who commute to work by bicycle. For example, one avid bicycle commuter, who has a doctorate in nuclear engineering, was informed by a Maryland DOT official that he could not look at bikeway plans because he was technically unqualified to understand them. He has been recognized by his county with an appointment as a transportation advisor, but I do not know whether the Maryland DOT official's bias has been rectified.

Furthermore, active citizens have an enormous amount of the initiative and enthusiasm that are important ingredients in any undertaking. Coupled with that initiative is a desire to participate and communicate cooperatively. But it is the agencies that must establish the necessary channels.

Another very important function for citizen participation is to help ensure the political acceptability of results. On some occasions, bikers have testified against faulty bikeway proposals that might have been corrected had there been direct communication with potential users. In contrast, Arlington County, Virginia, established a working citizen advisory committee. The plans resulting from the effort were widely supported.

Highway departments today are increasingly under public scrutiny. There is much handwringing about the institutionalized, historic commitment to the private automobile and some of the unfortunate side effects in pollution, energy consumption, and traffic fatalities. Some departments appear to alienate the critics by denying the role of other transportation modes. Where it occurs, this is a tragic mistake.

Bikers are a constituency, composed of real people with real needs. As these needs are met, they become avid supporters of the agency that meets them. They are road users to be sure and, aside from their legitimate needs, have no a priori view on the transportation mode debate. Their antagonism or support (and recall that one of every three Americans has a bicycle) is dependent on whether they are thwarted or accommodated.

Among the results achieved by bike-riding citizens in Washington, D.C., are a legal decision to require the removal of abandoned trolley tracks, increased bikeway appropriations (the local budget process involves federal approval and passage), Zoning Commission decisions in favor of bike facilities (4, 5, 6), and a mandate from the Environmental Protection Agency. The EPA decision (1, 2, 3) includes a number of provisions concerning bikeway planning, including technical requirements, mileages, and dates of completion for bikeways.

WHAT POSITIVE ACTIONS CAN STATE AND LOCAL GOVERNMENTS INITIATE QUICKLY?

Initiate a Program to Reduce the Serious Hit-and-Run Problem

It is, of course, illegal to hit and run, but there are documented cases of bicycle riders being left unconscious by hit-and-run motorists. Unfortunately, concern with accident liability is sometimes stronger than moral responsibility on the road today.

The case of the Supreme Court Chief Justice Warren Burger is only an example. The Justice was riding after dark on a well-lighted bicycle. The average speed of motor traffic in the area in which he was riding is well above the speed limit, and enforcement of speed laws has not been effective. When headlights bore down on him quickly, Burger pedaled faster and veered toward the curb. There was no bicycle lane for the Justice to take shelter in. Instead, a sewer grating of the type that traps bicycle tires reduced his room for maneuver. The sewer grating problem is well-documented, and safe, hydraulically efficient alternatives are available (7), but corrective action had not been taken in his area. The Justice was suddenly slammed against the pavement and knocked temporarily unconscious. It happened so quickly that he thought he fell, and initial newspaper reports carried the story that way. X-rays and medical examination revealed that he had been hit twice, once on each side. According to the medical report, he was hit not only by the pavement but also by the automobile. The motorist never returned to the scene of the accident, despite the possibility that a man's life might be at stake.

What can we learn from this? Those who attempt to assign blame to either motorists or bicyclists as a class completely miss the boat. All road users stand to benefit from improvements that allow them to travel safely together, and a very small minority of motorists can be an enormous traffic hazard far beyond their numbers. This minority can be divided into two groups—the bad driver and the attitudinally misguided. The traffic threat posed by the bad driver can be reduced by better education and enforcement of existing traffic laws. Then there are drivers, and even police officers, who believe the bicycle does not belong on the road. Whether it is frustration in traffic, jealousy of the biker's good health and esteem, unthinking desire for amusement, or even desire to harass a woman on a bicycle, the result can be a traffic casualty. Virginia, where the Burger incident occurred, is like most states; the bicycle has equal rights to the road under law, but that fact does not appear on the motorist's licensing exam. For the motorist who does not instinctively believe it, there is no mechanism for him to learn it. Great Britain, by comparison, includes an extensive section on cycling in its official national driving manual (13).

The posting by the D.C. Department of Motor Vehicles of traffic signs reading BIKES HAVE EQUAL RIGHTS was an extremely important step toward increasing traffic safety in the District of Columbia. Another medium that reaches motorists is the radio. Public service safety announcements during evening rush hour (when fatigue, tension, and listenership are at a peak) would help in reestablishing courtesy for all road users.

Enforce Regulations Controlling Motor Vehicle Emissions

The pedestrian, the bicycle rider, the passerger waiting at a bus stop, the commercial (and taxi) driver, and to a much lesser extent the casual motorist are human victims of motor vehicle exhaust. Recent findings published in the Journal of the American Medical Association on levels of carbon monoxide in urban drivers' blood are extremely disturbing. All states should have laws such as the District of Columbia's to forbid exhaust that is visible and to forbid idling longer than 3 min. The exhaust problem can often be ameliorated by proper engine tuning. The law needs to be enforced through ticketing and vehicle inspection.

Make Pedestrian and Bicyclist Access Part of New Traffic System Plans

There once was a time when you could walk from the Pentagon and nearby areas of Arlington into the District of Columbia. Today the maze of redundant highways in that area (called the mixing bowl) makes it impossible. Highways in particular sever communities, sometimes making it necessary for all members of a family to be driven places by car. Bridges are also structures that, when improperly designed, hinder or stop nonmotorized transport. It is not necessary. In Holland and Sweden, spacious pathways along highways, across bridges, and through cloverleafs are common (15, 16).

Provide Safe, Attractive Bicycle Paths to Enable People to Safely Develop Their Skills

Picture the following circumstances. A new owner of a bicycle takes it into traffic. He weaves somewhat, is afraid of traffic, does not trust himself near the curb, and is frightened of the honking his behavior arouses. The prime cure is the development of bike riding skill, which will occur almost automatically when there is an attractive, automobile-free area in which to learn.

Bicycle paths are the obvious answer, and, once built, they are a permanent resource for the community. One major bicycle path in the Washington, D.C., area—from Memorial Bridge to Mount Vernon (8)—has done more for traffic safety than all the area's lectures and safety demonstrations combined. It is not necessary, however, to await new path construction to begin provision of facilities, if a policy of street closings is followed. National Capital Parks closed portions of the George Washington and Rock Creek Parkways to motor vehicles on a regular, well-publicized basis, and the program was enormously successful.

Assign Agency Personnel and Resources to the Bicycle Field, and Include Them in Decision Making

An agency works only through people, and unless staff is assigned to a problem, no solution or even correct information bearing on it will emerge. Despite traffic department bias against bicycles, particularly in the upper, older ranks, young, bright, ambitious traffic engineers and other professionals are often very interested in the

new bicycle field, but they need the go-ahead of their departments.

I even recommend that the agency buy such a person a well-equipped bicycle so that he may become better informed about the relation between biking and the local traffic network through first-hand experience. The D.C. Department of Transportation bought a 10-speed bicycle for its personnel, painted it departmental orange, and attached a large emblem with the department's name on it. It was an immediate public relations success.

It is only through the designation of real people with real time and an ear within an agency that an effective link with citizens can be forged.

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