Bicycle Planning, American-Style:

A History of Vehicular Cycling, 1968-1982

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1. Introduction

Bicycle planning in America is unique in two ways. First, unlike in Europe, it didn't exist for almost a century after the motor vehicle became the dominant form of surface transport. True, some scattered advocacy efforts had been made during the great bike boom of the 1890s, mostly on the legal front, and bicycle transportation didn't simply evaporate overnight with the appearance of the motorcar. But after 1920, motor vehicle use increased rapidly and displaced cycling's already limited role as basic transport. Thus, no real attention was directed to bicycle use until about 1969, when a confluence of economic and demographic factors led to a dramatic increase in the sales of adult cycles.[1]

As a result, American bicycle planning is singularly unique in a second way: the extent by which it relies on the existing roadway system, in largely unaltered form, to provide for its basic infrastructure needs. Instead, it depends upon roadway skills, enhanced through educational programs targeted at both bicyclists and motor vehicle drivers, to promote mutual safety, convenience and compatibility. Over the years, this strategy has become known as *vehicular cycling*, a contraction of its somewhat unwieldy, but more precise, original label, *vehicular integration of cycling*. A capsule explanation of this philosophy was given by the American Association of State Highway and Transportation Officials (AASHTO) in the second (1991) edition of their Guide to the Development of New Bicycle Facilities:

> Bicycle facility planning is commonly thought of as the effort undertaken to develop a separated bikeway system . . . [in] fact, such systems can be unnecessarily expensive and do not provide for the vast majority of bicycle travel. Existing highways . . . must serve as the base system to provide the travel needs of bicyclists.[2]

This is not to say that American bicycle planning has exclusively or rigidly developed along these lines. In fact, it has *never* adhered to any single ideology, instead following the eclectic "disjoint incrementalism" that has been such a notable feature of all city planning in the United States. Nevertheless, with the possible exception of Australia, no other nation relies so heavily on the integration of cycling into the normal traffic stream to address its bicycle transportation goals. Vehicular cycling has

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[1] Bicycle use to 1920: Clay McShane, Down the Asphalt Path: The Automobile and the American City (New York: Columbia University Press, 1994): Chapters 1-4. Dramatic increase in sales after 1969: A. Trent Germano, *et. al.*, "The Emerging needs of Bicycle Transportation," Transportation Research Record 436 (1973): 8-18.

[2] Guide for the Development of New Bicycle Facilities (Washington: AASHTO, 1991): 2-3.

become *the* indelible national characteristic of bicycle planning in America.

Given its importance, it is surprising that no one has yet attempted to document the history of vehicular cycling in the United States. On the other hand, it is only recently that historians have even begun to narrate *any* of the history of American bicycle planning, although the field it is now over forty years old.[3] What little documentation does exist is scattered, much of it is shamelessly self-interested, and all of it lacks adequate documentation, context, and background. This report seeks to correct this.

2. Historical Antecedents: Eno and McClintock

It should be no surprise that vehicular cycling originated in the United States, as it has historically exhibited a unique approach to traffic control extending back a century, to the dawn of the automobile age. The first American traffic engineers were a disparate mix of amateur enthusiasts, architects, urban planners, and city administrators. What they shared was a common perception of traffic management as a social problem.[4] Probably the most famous of these early pioneers was William Phelps Eno. Born in 1858, he was an eccentric New York millionaire who gave up a lucrative real estate career in 1895 to devote himself to studying and writing traffic codes, first for carriages, later for automobiles.

In 1899 he convinced the City of New York to adopt a 50-paragraph code, which, among other things, mandated a "keep right" rule for the first time in its history! "Order out of chaos" became his mantra, and the publication, dissemination, and enforcement of clear and unambiguous rules became his method. In 1920 he wrote The Science of Highway Traffic Regulation, in which he spelled out his basic philosophy. Effective traffic regulation was 95 percent public education and only 5 percent enforcement, he explained, because "it is easy to control a trained army, but next to impossible to control a mob."[5]

The key, he believed, was one set of regulations for all users. For example, while horse-drawn vehicles, being slower, should logically be kept closer to the right-hand curb, they should not be

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[3] See, for example: Jeff Mapes, Pedaling Revolution: How Cyclists are Changing American Cities (Corvallis: University of Oregon Press, 2009): Zack Furness, One Less Car: Bicycling and the Politics of Automobility (Philadelphia: Temple University Press, 2010).

[4] David Blanke, Hell on Wheels: The Promise and Peril of America's Car Culture, *1900-1940* (Lawrence: University of Kansas Press, 2007): 142; Daniel M. Albert, Order Out of Chaos: Automobile Safety, Technology, and Society, *1925-1965* (Ph.D. dissertation, University of Michigan, 1997): Section II.

[5] William P. Eno, The Science of Traffic Regulation, 1899-1920 (Washington, DC: The Author, 1920): 3; John A. Montgomery, Eno: The Man and the Foundation (Westport, CT: Eno Foundation, 1988): passim. The State of New York did adopt a "keep right" ordinance for turnpikes and highways in 1801, but it did not apply to cities.

given right-of-way preference at intersections. Some cities gave automobiles and horse-drawn wagons equality, while others - sometimes even adjacent cities - granted them right-of-way priority.[6] Differential traffic rules should, Eno argued, always be based on divergent movements or travel paths, not vehicle identity, unless absolutely necessary.

Although Eno had published seven books by the mid-1920's, it was Miller McClintock who exercised the most influence over early American traffic planners. He received his doctorate in public administration from Harvard in 1924 with a dissertation entitled "The Street Traffic Problem." He moved west to teach at the southern branch of the University of California (later UCLA) and establish its Bureau for Street Traffic Research (BSTR). In 1925 McGraw-Hill published a revised version of his dissertation as Street Traffic Control. It was the most popular text on traffic management for the next fifteen years. Like Eno before him, McClintock believed that *traffic* management was fundamentally a question of *driver* management:

> A consideration of the actions which states have taken leaves one somewhat amazed that so little restriction has been placed on drivers . . . There are three general requirements: first that he be mentally and physically qualified to operate a motor vehicle; second, that he shall know the laws governing the operation of a vehicle; and third, that he shall understand the operation of a vehicle and prove it."[7]

The primary difference between Eno and McClintock is that while Eno relied mainly upon regulatory control, McClintock advocated physical management of the street environment. He argued for spot improvements to the roadway system to help relieve bottlenecks, channelize intersecting traffic paths, and facilitate control. Today, such coordinated spot improvements are known as Transportation System Management (TSM). McClintock's examples included the installation of safety islands for waiting transit passengers or road-crossing pedestrians; widening the radius of intersection corners to prevent right-turning streetcars from "pinching" autos against the curb; and improved signalization schemes.

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[6] Peter D. Norton, Fighting Traffic: The Dawn of the Motor Age in the American City (Cambridge, MA: MIT Press, 2008): 50-53. Norton asserts that Eno's rules placed a high priority on speed. I do not agree, although I do concur that Eno did highly value continuous movement, so preferred rotary intersections over street lights and stop signs: Eno, The Science of Traffic Regulation: passim; William P. Eno, Simplification of Highway Traffic (Washington, DC: Eno Foundation, 1929): passim; Montgomery, Eno: The Man and the Foundation: 120.

[7] Miller McClintock, Street Traffic Control (New York: McGraw-Hill, 1925): 168.

On the other hand, McClintock's regulatory proposals were far less proscriptive than Eno's, and more adaptable to the physical problem presented. For example, he listed five different ways that cities were regulating intersection left-turns, only one of which relied on today's method of placing the que of waiting cars adjacent to the centerline of the street! "The real test of any regulation," he wrote, "is to be found in whether or not it does the work better than any other method."

He preferred having left-turners do a two-stage turn, first having a traffic patrolman send them to a "hold box" on the far right-hand side of the intersection, then, after all the straight-through traffic had passed, releasing them to make the second stage of the turn onto the cross street. This so-called "Philadelphia System" turn eventually lost out to today's one-stage "Chicago System" turn, mostly because the Chicago turn needed only a traffic light, while the holding-box system required a police officer.[8]

But by the 1930's, the social-science based approach of Eno, McClintock and their fellow planners and municipal administrators was on the decline. The highway engineer, trained in civil engineering, not public administration, emerged as the dominant figure. Traffic planners sought to exercise social control to achieve a better, more skillful, more cooperative driver, but the new highway engineers simply assumed that drivers would act incompetently, inattentively or even aggressively, and incorporated these assumptions into their designs. To the extent their highway departments could afford it, they insisted that roadways be built to match their low expectations.

In 1926, McClintock moved the BSIR from California to Harvard. Initially welcomed by Harvard President A. Lawrence Lowell, the climate grew frosty as street traffic control was pushed aside by the growing power and prestige of the highway engineers, and McClintock was warned in 1936 by Lowell's successor, James B. Conant, that he "had considerable doubt as to the advisability of having this Bureau connected with the University." In 1939 McClintock moved the BSIR to Yale, but resigned in 1947 to take over the presidency of the Mutual Radio Network.[9]

The brief reign of the "traffic engineer" had yielded to the much longer era of the "highway engineer," but a half-century later this same controversy would flare again in the sphere of bicycle use. Was the bicycle planner analogous to Eno and McClintock's "street traffic planner," a social reformer of cyclists, or a post-1930 "highway engineer," who assumed incompetence (or, to be more precise, a diverse and static range of competencies) within the target audience, and planned and built accordingly?

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[8] Ibid., p. 118-119;

[9] Albert, Order Out of Chaos: 58-70; Morton Keller and Phyllis Keller, Making Harvard Modern: The Rise of America's University (New York: Oxford University Press, 2001): 79.

3. Historical Antecedents: European Bicycle Planning

There is little cohesive history on the development of bicycle planning in the United Kingdom and continental Europe. Other than in the UK, bicycle planning is virtually synonymous with the construction of bicycle facilities. On-road bicycle lanes in the center of the roadway existed in Bremen, Germany as early as 1897. It is believed that the inspiration for these came from earlier, similar facilities that had been installed somewhere in Belgium. By 1910, on-road bicycle lanes existed in Hamburg, Hanover, and several other northern German cities in the now familiar each-edge-of-the-road configuration. As cities increasingly asphalt-paved their roads, many of these lanes were left in their original cinder-covered or macadamized condition.[10]

The City of Magdeburg and its municipal architect, a Dr. Henneking, proved influential. Working with a local organization founded in 1898, the Magdeburg Cycle Path Association, Henneking experimented with various configurations throughout the 1920s. The preferred solution proved to be one where the entire roadway was asphalted, then separate lanes were delineated with curbstones, effectively creating sidepaths. "The creation of specially conceived paths for bicycles is the only real solution to the annually escalating problem of creating safe traffic conditions for cycles and pedestrians," Henneking asserted. His Magdeburg design was disseminated nationally in 1927 by the Study Group for Motorcar Road Construction (STUFA). In 1934 a new national traffic code of ordinances was enacted that made the use of these paths mandatory.[11]

The history of development of cycle facilities in the Netherlands, Denmark and Belgium appears to be similar to that in Germany, but slightly later, starting in the mid-twenties. The only comprehensive narrative in English discovered thus far is for the Dutch national system.[12] After post-World War I reconstruction, the Netherlands had one of the densest paved-road networks in the world. Although its primary road system was only 2,300 kilometers (1,425 miles) long, the paved farm-to market road system extended over some 26,000 kilometers (16,000 miles). However, this level of road improvement had led to rapidly escalating motor traffic, resulting in sharp increases in injuries and fatalities to pedestrians, cyclists, and those on horse-carts. One solution, originating from England and frequently discussed at international road conferences, was the "mixed road," an at-grade thoroughfare with separate lanes for fast and slow traffic. The Americans, Germans and Italians preferred limited-access highways (autostrada, autobahns, freeways),

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[10] Volker Briese, "From Cycling Lanes to Compulsory Bike Path: Bicycle Path Construction in Germany, 1897-1940" in Cycle History 5: The Proceedings of the Fifth International Cycle History Conference, Cambridge, England, ed. Rob Van der Plas (San Francisco: Bicycle Books, 1995): 123-128.

[11] Ibid., 124-126.

[12] Gijs Mom, "Roads Without Rails: European Highway-Network Building and the Desire for Long-Range Motorized Mobility," Technology and Culture 46:4 (October 2005): 745-772.

an alternative that essentially separated traffic flows of different speeds onto completely separate rights-of-way, not just different lanes within the same ROW.

Although strongly advocated by a private road contractor named S. ten Bokkel Huinink, the engineers at the Dutch Ministry of Water (Waterstaat), who were in charge of transport construction, rejected the superhighway idea after inspecting Milan's autostrada during a 1926 road conference, finding them "ugly." The Netherlands cycle-path system evolved as a hybrid of the mixed road concept and Dr. Henneking's STUFA guidelines. Denmark followed with its own, somewhat later, pathway construction program during the 1930s along the same general lines.

Germany, of course, did embark on high-speed highway development in the 1920s, culminating in the start of its autobahns in 1933. Tilman Bracher, a Berlin transportation consultant, believes the German "Radweg" (sidepath) construction program was instituted as part of the nation's unemployment relief efforts of the 1920s and 1930s.[13] On the other hand, transport historian Volker Briese asserts they were built primarily to promote speedy traffic:

> German motives for the construction of paths, especially in the thirties, were different from the reasons given in other countries, from the information available. For example, neither in Holland or Denmark was the demand for cycle paths connected to the fostering of motor vehicle transport. Maybe this is the reason why in these two countries cycle paths remained preserved after WWII, instead of being destroyed, as they were in Germany in the seventies, to allow for car parking. It sounds more believable that in other countries paths were really built for the comfort and safety of cyclists.[14]

In the United Kingdom, there was little or no bicycle planning until the mid-thirties. By and large, this resulted from the influence of a single organization, the Cyclists' Touring Club (CTC), and its secretary from 1920 to 1945, George Herbert Stancer. The CTC was a small organization, comprising only about 34,000 members in 1939, miniscule when compared to the UK domestic annual bicycle market of 1.4 *million* units.[15] However, it exercised inordinate influence. For almost a decade before becoming CTC Secretary, Stancer had been editor of the commercial journal Cycling, and in addition to the secretariat, he took over the editorship of the club's magazine, the CTC Gazette. Most of

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[13] Timan Bracher, "Germany" in The Bicycle and City Traffic, ed. Hugh McClintock (London: Belhaven Press): 175-189.

[14] Briese, "From Cycling Lanes to Compulsory Bike Path": 126.

[15] Thirty-eight thousand members: William Oakley, Winged Wheel: The History of the First Hundred Years of the Cyclists' Touring Club (Galdalming: CTC, 1977): 27, 41; sales of 1.4 million in 1938: Roger Lloyd-Jones and M.J. Lewis, Raleigh and the British Bicycle Industry (Aldershot: Ashgate, 2000): 202.

Stancer's time, and an inordinate amount of the club's money, went into the magazine. By 1935, it rivaled any commercial publication, averaging 40 heavily illustrated pages per month, but it also cost the CTC over £3,100 a year to produce, the equivalent of 6,000 annual memberships. Stancer found that one of the best ways to retain subscriptions and keep readership high was to generate controversy and conflict, preferably irresolvable conflict. Even the CTC's official historian, William Oakley, notes that "Stancer was a good chess player." When Stancer died in 1962 the Club discontinued the Gazette less than a year later.[16]

An example was Stancer's 31-year campaign against rear taillights for bicycles. During World War I, auto headlights had been dimmed by blackout slits, so the Defence of the Realm Act (DORA) required cyclists to carry a red taillight. In 1921 DORA expired, but Parliament proposed reinstating the taillight provision.[17] Although British auto electrics (including headlights) were world-famous for their undependability and weak output, Stancer and the Gazette strongly campaigned against the new act.

"At that time, the CTC was still fighting to prevent regulations that would, eventually, force cyclists to use rear red lights," notes current CTC staffer Chris Peck. "[They] believed that cars should at night be obliged to travel at a speed which would enable them to stop should they encounter another user in the road — it should be their responsibility to notice the unlit road user, not the responsibility of the cyclist."[18] The CTC was able to fend off any nighttime equipment law for eight years, eventually compromising on a red rear reflector ordinance in 1928. Finally, in 1945, the same year Stancer retired as CTC Gazette editor, the government made taillights mandatory.[19]

Stancer frequently chose to create or extend a controversy that was actually detrimental to the CTC's interests when it promised to bolster readership in his Gazette. After the war, the Royal Society for the Prevention of Accidents (RoSPA) had invited the National Committee on Cycling, comprised of the national cycling organizations and industry groups, to affiliate with them and sit on their governing board. However, Stancer vetoed the idea, asserting that the CTC could not accede to any RoSPA policy that was not one hundred percent in accord with the Club's views. He was forced to back down in 1954 when the National Association of Cycle Traders (NACT, the bicycle industry organization) undercut him by starting to negotiate directly with the Automobile Association and the Royal Automobile Club (both RoSPA board members) on issues coming before RoSPA. That essentially put the NACT in the position of intermediary between all the members of the National Committee on Cycling and all

[16] Oakley, Winged Wheel, 28, 44-46, 176. In 1963 the Gazette was spun off as a self-supporting semi-independent commercial magazine, Cycletouring.
[17] Oakley, Winged Wheel, 33.
[18] Peter Walker, "75 Years After the UK's First Cycle Lane Opened, the Same Debate Rages On," The Environment Guardian Online, 13 December 2009, www.environmentguardian.co.uk, last reviewed 3 September 2011.
[19] Oakley, Winged Wheel, 77-78.

the RoSPA boardmembers — except for the CTC. The result was exactly the same as having the NCC sit on RoSPA's board—but with the CTC shut out. Stancer acquiesced to RoSPA's next offer to give the National Committee of Cycling a seat.[20]

Britain's first cycle-path, 2 ½ miles long, was constructed alongside what was then known as Western Avenue (now A40) in London in December, 1934. It too was opposed by Stancer. "In 1934 the CTC was dead against cycle tracks of all kinds," Peck notes, "we were still very much of the mind that we should try and recapture the roads from the motorists." The Gazette carried elegant diagrams of intersection turning maneuvers intended to show that cycle tracks would increase accidents. "Cycle paths would tend to degrade the pastime, reduce the number of cyclists, and to strike a blow at the cycle manufacturing and distribution trades from which they would never recover," Stancer huffed in one editorial.[21]

Instead of special tracks for cycles, the club called for the development of that new idea coming out of Germany and Italy: motorways. The first, the M1, opened in 1959. The idea would boomerang against club by the 1960s, as the motorway program began to divert so much highway funding from the upkeep of regular surface roads — the "A" and "B" highways — that the latter soon became woefully inadequate, to the detriment of cyclists. In 1963, the club sent a formal letter to the Ministry of Transport asking that bicycle facilities be required on primary highways, on bridges, and on major urban roadways.[22]

In 1937, representatives from the CTC testified before a House of Lords select committee that universal cycle proficiency training for children and young adults was urgently needed. The committee agreed and put this in its final report. However, the war intervened and it was not until 1947 that the planning for a scheme for training and testing children in cycling proficiency was began to any significant extent. Undertaken by RoSPA, it did not become fully nationwide until the mid-1950s. The United Kingdom still has this program, although expansion into Scotland, Wales and Ireland had been less widespread than in England. In this aspect, the British foreshadowed later American efforts towards institutionalizing vehicular cycling as government policy. "While the term 'vehicular cycling' comes from the United States,' notes author John Franklin, "the phenomenon that describes it is intrinsically British."[23]

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[20] Ibid.,: 136-139.

[21] Walker, "75 Years After the UK's First Cycle Lane Opened," Michael D. Everett, "The Bikeway Controversy" in Proceedings of the Seminar/Workshop on Planning, Design and Implementation of Bicycle and Pedestrian Facilities, Chicago, July 19-21 (New York: MAUDEP, n.d. [1978]): 42-49. Everett is quoting from the CTC Gazette, April and July 1938.

[22] Oakley, Winged Wheel, 180-181.

[23] John Franklin, "National Cycle Training Project: Cheltenham Address, May 2002": 1 http://www.cyclecraft.com/articles/index/, last viewed 6 December 2011; John Franklin, "Segregation: Are We Moving Away From Cycling Safety?" TEC: Traffic Engineering and Control (April 2002): 23-27.

II

After World War II, all the western Europe turned its attention to implementing a 1950 joint European highway plan known as the "E-network," designed largely along American superhighway lines. However, most nations lacked the money to actually build it; by 1967, only about 6,700 km (4,150 mi) had been completed, mostly in the form of upgrades to existing roadways. In the Netherlands, the pace of development increased dramatically when an engineer named Bert Beukers took over the roadbuilding department of the Waterstaat. Educated at Miller McClintock's old BSIR program at Yale (which, by this time, had evolved into a fairly standard highway civil engineering program), he overcame the bureaucratic resistance to his "American approach" within the Ministry of Spatial Planning and Environment by starting his own urban planning program in the Waterstaat. In 1968 he scrapped the previous 1958 national plan, which called for 1,200 km (740 mi) of new high-speed roads, replacing it with a 3,600 km (2,230 mi) grid of superhighways.[24]

The new plan lasted less than a decade. In October 1973, the Organization of Petroleum Exporting Countries (OPEC) organized a boycott of most western nations after the Yom Kippur war. British Petroleum (BP) was majority-owned by the British government. BP, in turn, held 40 percent of Royal Dutch Shell, the Netherlands national oil company. A month after the war, British Prime Minister Edward Heath told BP officials to order Shell to give British clients preference over everybody except its own Netherlands customers, regardless of contractual obligations. Shell refused. Heath threatened to nationalize BP and cancel all of Shell's exploratory leases in the then-new North Sea Brent oil field. Shell still refused. Heath's own bureaucrats, with cooler heads, essentially refused to execute Heath's retaliatory orders. Two months later, OPEC eased the restrictions — except for the Netherlands, which had sold aid to Israel. The European Community authorized clandestine relief oil transshipments to the Netherlands. France, busy trying to sell jet fighters to several OPEC members, hemmed and hawed. The Netherlands, provider of 40 percent of France's natural gas, threatened to shut off the pipeline at the border. The transshipments went through.[25] Generally, it was a very ugly time.

The Netherlands very quickly developed a whole new transport plan, and it didn't say very much about superhighways.

Moreover, they stuck to it for the next forty years. Through a gradual process of scaling back new highway development and increasing bicycle projects — generally refined versions of same type of facilities that Dr. Henneking devised in 1927 — expenditures for bicycle projects amounted to ten percent of the surface transport budget by the mid-eighties. To a less dramatic extent, the same was true in most of the low countries and Germany.

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[24] Mom, "Roads Without Rails," 767-769.

[25] Daniel Yergen, The Prize: The Epic Quest for Oil, Money and Power (New York: Simon & Schuster, 1991): 613-632.

Tilman Bracher has observed clear signs of what he believes to be national "styles" of bicycle planning. German federal roadway experts consciously tried to move away from he calls the "classical Radweg" approach, which he says "has been popular among [local] politicians and transport planners since the 1920's as it reserved road space for cars." Bracher noted that as late as the 1980s "classical Radweg schemes are still [being] commonly implemented."[26] A federal roadway department team attempted to address this in two different types of cities: those that, so far, had installed no provisions for cyclists, and those that had already been extensively provided with Radwegs.

The "clean slate" towns were given an integrated "bicycle-friendly" approach, generally comprised of encouragement and safety education programs, widespread traffic calming measures, cycling-oriented roadway spot improvements, and relaxation of mandatory Radweg-use laws. The results? "In the end, local public reaction and implementation problems became the major impediments," Bracher reported. "It took a long time to reduce resistance to the 'imported experts on bicycle planning' [and the] unconventional measures . . . were not immediately adopted."

In Erlangen, the "classical Radweg" town, some sidepaths were abolished at intersections, and the cyclists merged into the traffic. The results were generally no better than for the "clean slate" trials. "In practice," Bracher admitted, "[local] implementation is progressing half-heartedly. Even in a cycle-friendly city, much resistance has to be overcome!" In other tests, where Radwegs were replaced with on-road bicycle lanes, only about half of the cyclists approved of the change, although they almost invariably resulted in a statistically meaningful drop in the number and severity of accidents.[27]

4. Historical Antecedents: American Bicycle Planning Before 1970

World War II left Britain economically devastated. After taking desperate measures to avoid it, the Chancellor of the Exchequer was finally forced to devalue the pound in 1949 from $4.03 to $2.80, setting off a trans-Atlantic financial crisis. England needed hard currency and needed it fast. To move dollars across the Atlantic, the Eisenhower administration sought immediate actions to stimulate British imports. Developing an import market for British automobiles would take years, but a thriving bicycle sector could be cobbled together in only a couple of months, so the tariff on bicycles was cut from 30 to 7.5 percent. Imports jumped from 67,000 units in 1950 to 595,000 in 1953, while the sale of American-made bicycles fell almost 50 percent. The American bicycle industry soon decided the only way to offset its shrinking slice of the market was to expand the entire pie by cultivating adult riders. "The thing we fought more in the 1950's than any other thing in the industry was to encourage people to continue riding after the age of sixteen"

[26] Bracher, "Germany": 185-187.
[27] Ibid., 186-187

recalled Norman Clarke, president of the Columbia Manufacturing Company and, at the time, also president of the Bicycle Institute of America, the industry trade group. "The way we did it was two things — promote it, and recognize that the clunkers we were making were too big and much too heavy for adults."[28]

The BIA's efforts were given an unexpected boost by the sudden fame of Dr. Paul Dudley White. Dr. White was a cardiologist, a cyclist, and a long-time member of the American Youth Hostels, the favorite organization of the handful of American cycle-tourists that existed in the 1950's. In 1956 President Eisenhower had a heart attack. White was his cardiologist. At that time, the standard treatment was months of near-immobilized bed rest. White was an apostate — he recommended mild, then increasingly strenuous exercise, weight loss, and an end to smoking. Golf, Eisenhower's passion, was useless, White told him - not strenuous enough. Cycling, White said, would be perfect. He could do it at Camp David or his farm in Pennsylvania. The bicycle industry went bonkers.

"Boy, we've got something here!" Clarke recalls as their reaction. "We took him to all of our conventions, paid his bills [and] dedicated the first bicycle path in New England around the Charles River basin to him, and had one on Nantucket built that we paid for." The League of American Wheelmen was revived in Chicago, with the BIA providing financial assistance.[29]

Clarke estimated that by 1965, a third of his total production of 650,000 was in the form of multi-geared bicycles: "3-speeds and 5-speeds, some 10-speeds." However, the entire industry was soon blindsided from an unexpected quarter.[30] In early 1963, Schwinn's west-coast distributor reported that teens were buying used 20-inch wheel bikes and retrofitting them with "banana" saddles and high-rise handlebars. Al Fritz, a Schwinn vice-president, decided to make up five hundred for their southern California distributor. When Frank Schwinn saw the prototype (which Fritz had named "Stingray") he thought his man had gone nuts, but Schwinn sold 45,000 in just six months. They eventually made over two million before the craze

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[28] Author's transcribed interview with Norman Clarke, 5 April 5, 1998: 6-7; "Bicycle Makers Seek Tariff Help," New York Times (22 August 1954): F1. For the purposes of this paper, the Bicycle Institute of America (BIA) and the Bicycle Manufacturers' Association (BMA) are synonymous. After World War II, the BIA served as the umbrella group for the bicycle trades. It was comprised of four subsidiaries, including the BMA. About 1975, the BIA disaggregated into its four constituent groups, with he BMA becoming the most visible entity and representing the entire industry in matters of overall advocacy. The BMA discontinued operations in 1984 as the American cycle industry contracted: Author's interview with William C. Wilkinson III, former executive director, BIA, 17 July 2008.Tariff rates: The thing we fought: interview with Norman Clarke: 6.

[29] Interview with Norman Clarke: 14; "League of American Wheelmen Financial Statement, June 15, 1951"; "League of American Wheelmen Financial Statement, October 30, 1951", L.A.W. Archives, private collection.

[30] Interview with Norman A. Clarke: 12. Schwinn introduced an 8-speed in 1963, and a 10-speed the following year: author's interview with Jay Townley, former vice-president, Schwinn Bicycle Co., May 23, 2009.

started to ebb in 1968. Then, just as suddenly, in 1970, the great bicycle boom hit. Domestic sales shot up from 35 per 1000 in 1969 to 72 in 1973. Almost all of this was in the form of adult, lightweight, multi-geared bicycles.[31]

Many theories have been offered to explain the bike boom of 1970-74. The most plausible is that a combination of baby boom demographics and Stingray economics crashed into each other after 1969. Stingrays had all but pushed out middleweight and lightweight one- and three-speeds as the bicycle of choice for sub-teens and teens by 1965. While middleweights and lightweights could be adapted for use by young adults, Stingrays were strictly kid's stuff, so as their owners grew up, they had to buy new bicycles if they wanted to keep riding. At the same time, these Stingray boys and girls, members of the peak birth years of the post-war baby boom, were moving into young adulthood in record numbers. Thus, a convergence of two factors: 1) young adults, who wanted bicycles, were growing in record numbers; and 2) the bikes they already had suddenly turned, like so many Cinderella carriages, into useless pumpkins. Because they were young, open to new ideas, and willing to accept more risk, they were more likely to walk past the upright-handlebar one- and three-speeds to the ten-speed section and ask, "what's this?"[32]

II

Besides the New England facilities already mentioned (both components of larger redevelopment projects), the first effort at some sort of bicycle planning in the United States appears to have been in the village of Homestead, Florida, about twenty-five miles south of Miami. Between 1961 and 1963, Homestead designated and signed a network of secondary, lightly traveled streets to connect residential areas with "schools, playgrounds, shopping centers, ball parks, and other centers of activities." They were not intended to divert "the experienced cyclist, capable of riding long distances," but were, instead, meant for "the newcomer, the weekend cyclist, the family with children."

The experiment worked largely because of Homestead's unique situation. Because of the mild climate, it had more bikes per capita than comparable towns. It was an old (for south Florida) railroad town, laid out in a tight gridiron plan that ended up not being developed for many years. When it was, it was built up with large-lot ranch houses, not the tiny bungalows originally intended, resulting in many quiet, untracked streets. Finally, it was a small, tightly-knit community centered around an adjacent air base. When

[31] The sales of derailleur-geared bicycles was 610,000 in 1969, 3.5 million in 1975: Frank J. Berto, "The Great American Bicycle Boom" in Cycle History 10: Proceedings of the 10th International Cycle History Conference, ed. Hans Erhard Lessing and Andrew Ritchie (San Francisco, Van der Plas Publications, 2000): 133-48.

[32] The original source of this theory appears to be a strategic plan prepared for Schwinn in 1978: Mapes, Pedaling Revolution: 29-30.

Chicago, which had a disconnected set of lakeside trails left over from the 1950's, tried to copy the idea, it found it had to build separated facilities to close all the gaps in the network, and a 64-mile system installed during 1965-67 in the affluent Milwaukee suburb of Waukesha was entirely comprised of paved, off-road paths.[33]

The Waukesha facility was typical of many built during this era: separated from the roadway system, usually running through a park or along a waterway, with little transportation potential. However, this was less a matter of ideology than money. In 1965, Congress created the Land and Water Conservation Fund (LWCF), which quickly became a prolific source of money for municipal bicycle engineering. However, its legislative purpose was to promote outdoor recreation, and many funding requests were rejected by the Bureau of Outdoor Recreation (BOR) because they overly emphasized transportation. Many in the bicycle industry hoped the Federal Highway Act of 1973, which, for the first time, allowed (but did not require) states to use a portion of their roadway funds for pedestrian and bicycle facilities, would rectify this. It didn't, because states were loath to divert funds from roadway projects unless they were specifically earmarked for alternative transportation projects. The expiration of the LWCF led to the cessation of most new large-scale bike path projects after 1975.[34] The BIA responded to the LWCF by surveying local parks and recreation departments, then compiling a best-practices manual in 1965 as Bike Trails and Facilities—A Guide to their Design, Construction and Operation, probably the first bicycle planning document published in significant numbers in the United States. Similarly, the BIA and the BOR organized the nation's first bike-ped conference, the "National Trails Symposium," in Chicago, in June 1971.[35]

There was very little to contrast between American and European bicycle planning at this stage, because the focus in America was so overwhelmingly recreational. However, even now, there was emerging the first inchoate strands of what would soon weave together to form vehicular cycling. Fred DeLong, described by one journal editor as "most definitely an old boy of cycling," was the technical editor of Bicycling, America's largest cycling magazine. A professional engineer, he was a technical consultant and project coordinator for the BIA and, starting in 1973, the U.S. delegate to technical committee TC-149 (bicycles) of the International Standards Organization (ISO).[36]

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[33] E. Peter Hoffman, "200,000 Miles of Bikeways" in The Best of Bicycling, ed. Harley M. Leete (New York: Trident Press, 1970): 287-290.

[34] John B. Corgel and Charles Floyd, "Toward a New Direction in Bicycle Transportation Policy," Traffic Quarterly 33, 2 (April 1979): 297-310.

[35] W. L. Cook, Bike Trails and Facilities—A Guide to their Design, Construction and Operation (New York: BIA, 1965, rev. ed. 1969); "Trails Seminar," Bicycling, 12, 5 (May, 1971): 26.

[36] Joe Kossak, "Hatboro Wizard Speaks," Bike World (October 1974): 10; Fred DeLong, DeLong's Guide to Bicycles and Bicycling (Radnor, PA: Chilton,

DeLong developed a safety and proficiency course for the Philadelphia Council of the American Youth Hostels in 1969-70. At first a somewhat rudimentary course for relative beginners, it was soon expanded and improved, and Bicycling began serializing excerpts from it in early 1970. By 1972, Bicycling had run fourteen or fifteen such installments, and it now included such advanced topics as roadway placement on narrow, high-speed roads and column (paceline) riding.[37]

Although he made part of his living as a technical consultant to the BIA, DeLong was growing worried that the bicycle industry was placing too much emphasis on bike trails. "The bicycle is a legitimate vehicle which has a right to use the public highways," he wrote in 1972. "Bike paths can be helpful, but bike paths in all too many instances suffer their own problems . . . the cycle path movement can lead to entrapment of the cyclist in a limited sphere."[38] He had become convinced of this on:

> several recent trips in Paris and about 2,500 miles throughout France [which] brought into focus the concept of "all roads for all users" . . .if cyclists can be trained to ride skillfully and motorists trained to accept cyclists' rights to the road when it does not interfere, we already have millions of miles of bike paths for our use in the U.S.A.[39]

Less than two years after the "National Trails Symposium," the U.S. Department of Transportation (USDOT) underwrote the "Bicycles USA" conference at its Transportation Systems Center in Cambridge, Massachusetts. The majority of the of the presentations were stock bike-trail material, but a young technician for the National Park Service, who had been assigned a presentation on "bicycle trails, their construction and use," prefaced his remarks by stating that:

> I strongly disagree with those who suggest that biking be limited to exclusive bike trails and bike lanes. So much more can be done for so many more bikers through the development of procedures for creating safe bike routes along urban streets. I think that trails should be provided under two conditions only: 1) as the only alternative for safe bicycling in an area either parallel to a major highway or connecting two or more

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1974): passim; Fred Delong, "I.S.O. Technical Committee TC-149 (Cycles), An Overview," Bicycling 15:7 (July 1974): 72-77.

[37] Fred DeLong: Safety: A Bicyclist Proficiency Course," Bicycling 11, 3 (April 1970): 22-23, 32; Fred Delong, "Cyclist Safety and Proficiency Course: Part 10, Club Riding and Touring Skills," Bicycling 12, 5 (May, 1971): 20-21; Fred Delong, "Bicycle Proficiency: Where on the Road?" Bicycling 13, 11 (November 1972): 36-37.

[38] Delong, "Bicycle Proficiency: Where on the Road?": 36.

[39] Fred DeLong, "The Bicycle's Place on the Road: Another Viewpoint," Bicycling 9:7 (July 1973): 20.

major points; or, 2) to provide a unique recreational facility.[40]

By the end of the decade, that young technician, Bill Wilkinson, would be the executive director of the BIA after spending most of the intervening years as the principal contact within USDOT on bicycle and pedestrian matters.

Shortly before Wilkinson addressed the Bicycles USA conference, The City of Santa Barbara, California had issued a request for proposals to do "a small study" on bicycle accidents in the City. Dr. Kenneth Cross was a principal at a Southern California research firm named Anacapa Sciences. They bid on the project and won. "We did a pretty conventional study," Cross later recalled, "it was just about the same thing everyone else had done."

When they finished their work, Santa Barbara gave Anacapa a follow-up contract to develop a bike-safety program based on the data. "The problem was that I couldn't define good, hard, definite educational objectives," Cross remembers. Frustrated, he started physically sorting the accident reports into stacks of similar accident types. The number of piles ended up being surprisingly small — less than a handful. He then broke down each stack into subtypes. "I ended up with a very crude typology. As I recall, we identified ten accident types that accounted for ninety percent of all accidents." Given the available data, that was the best he could do: "All I had at the time was . . . traffic accident forms. As you know, they don't have complete information, but . . . it gave us insights into the different types of accidents."[41]

Cross discovered that "there's not a very high correlation between ways bicyclists have assumed car-bike collisions occur and the ways they actually occur." Busy streets weren't the problem; it was cross-movements that mattered — turns by cars, and vehicles entering and exiting the traffic stream. The resulting school safety program stressed hazard identification, and downplayed the teaching of manual skills. "I think there will be a movement away from training in bicycle handling skills," Cross predicted at the time, "vehicle handling skills and deficiencies don't seem to be important problems." There was one exception to this, however: on-road training: "I personally would like to see lots of on-road training, because I think it is the highest fidelity training you can get."

In 1974, the National Highway Traffic Safety Administration (NHTSA) awarded Anacapa a contract for a similar, but much larger, study. "[They] wanted an accident typology and I had a rudimentary

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[40] Bill Wilkinson, "Construction, Maintenance, and Enforcement on the George Washington Memorial Parkway Pathway" in Bicycles USA: Proceedings, May 7-8, 1973 (Cambridge, MA: USDOT, Transportation Systems Center, n.d. [1973]): 40-42.

[41] The story of the 1973 Santa Barbara accident study comes from two sources: "Bicycle Forum Interviews Ken Cross," Bicycle Forum 2 (Fall 1978): 2-10; "How Friends and Colleagues Remember Ken" at the website of the Association of Pedestrian and Bicycle Professional (www.abpb.org), under "Ken Cross Research Scholarship." Last accessed 1 December 2011.

typology," Cross explained. The study required three years, with the preliminary results not ready until May, 1977. Meanwhile, in 1975, Ralph Hirsh, a former city planner, now a faculty member at the planning program at Philadelphia's Drexel University, and head of the nonprofit Bicycle and Pedestrian Transportation Research Center, sought financial support for a program "to combine the Ken Cross approach to hazard recognition with the Fred DeLong approach to cycle proficiency training . . .the best available training in on-the-road bicycle proficiency." Ultimately, however, he was not successful.[42]

In December 1972 the Metropolitan Association of Urban Designers and Environmental Planners (MAUDEP), an affiliate of the American Society of Civil Engineers (ACSE), held the first of its annual MAUDEP Bicycle-Pedestrian Planning and Design Conferences in San Francisco. A featured speaker was Jim Konski, ASCE's vice-president, an ex-cycle racer, still-avid cyclist, and regular contributor to Bicycling and other publications.

Konski argued that "the transportation and utility aspects [of cycling] are only offsprings of the prime factors," which were its recreational and sporting aspects. "A properly designed bicycle is a high precision instrument that requires skill and knowledge to use . . .[because] a person is traveling by bicycle at about 20 miles per hour." Such a device, in the hands of a skilled user, could not be accommodated on an exclusive facility unless it had been designed and built to such high standards that it cost "about 70% of what a two-lane secondary highway would cost."

Konski found that the biggest problem thus far in promoting a sound, nationwide program was that while public officials were willing to accept "the bicycle as a real thing," he believed "they have not been able to grasp its full [performance] potential." Likewise, the public did not appreciate what a trained cyclist on precision bicycle was capable of. "The prospect of bicycling for solving some of our urban transportation problems, as well as better health, environmental and recreational needs, is highly dependent upon the development of what I call "better bicyclism," he stated. "Bicyclism," he explained, was defined as "the art and practice of bicycling."[43]

Developing "better bicyclism" required public support for racing, or at least an active culture of club-level performance

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[42] "Bicycle Forum Interviews Ken Cross": 3; Ken Cross, "Bicycle/Motor Vehicle Accident Types," Bike Ed 77: Conference Report May 4-6, 1977 (No Location [Washington, DC: Lawrence Johnson & Assoc./CPSC/USDOT, 1977); Report No. CE 014-066. Cross's presentation is at pages 44-59. Letter from Ralph Hirsh, Bicycle and Pedestrian Research Center, to Morgan Groves, L.A.W. executive director, 12 November 1975, L.A.W. Archives, private collection.

[43] The following is taken from two sources: James L. Konski, "It's Up to You," Bicycling 9:6 (June 1973): 20-23, a reprint of Konski's December, 1972 San Francisco address (which was not included in the conference proceedings), and James L Konski, "Anticipation and Control of Hazards" in Bicycles USA: Proceedings, May 7-8, 1973 (Cambridge, MA: USDOT, Transportation Systems Center, n.d. [1973]): 26-28.

cycling along the lines of youth-league football or high-school softball: "why is it important to advance the sport of racing if we are to provide bike routes and paths? Because if the public understands the sport and learns why the serious cyclist does the things that he does, the individual, though he may not be interested or capable of racing, will be better able to apply this knowledge." He asserted that so far, most "bike or bike trails or whatever you want to call them," had been failures. "Why? The answer is simple . . .[they] did not have a sufficient knowledge of bicyclism."

Thus, Konski recommended that all aspects of cycling, from the development of engineering standards for bikeways, to accident research, to the preparation and training of regional and Olympic racing teams, should be vested in "a [single] national agency or organization with strong leadership . . .by people who fully understand both bicyclism and the transportation disciplines."

Here was the basic outline of a new and uniquely American style of bicycle planning. Its implied emphasis on the use of the existing roadway system and cyclist skill in moving within the traffic stream was borrowed from the urban experience of France and England. As both DeLong and Konski pointed out, "bicyclism" needed a system of proficiency education and training. But most importantly, this nascent "American System" was firmly grounded within a recreational or sporting context. Few, if any participants were expected to be strictly utilitarian cyclists; transportation was an ancillary activity that enthusiasts would participate in because it gave them another reason to ride.

If any single characteristic could be said to define a unique "American" style of bicycle planning, this would be it: the assumption that its constituency would always be made up of utilitarian trip-makers drawn from an existing pool of recreational cyclists. In other words, it was presumed from the start that planners couldn't make utility riders out of non-cyclists on the basis of pure economics. Potential cyclists simply could not be induced to respond to time and cost considerations in the same way as transit riders or auto drivers. Bicycle planning would always require an exogenous "pull" factor — an interest in cycling.[44]

As yet, this system had no name, no identifier, no "hook." (Even Konski quickly gave up on "bicyclism.") But in late 1974, Harold ("Hal") Munn, a CalTrans engineer and active member of the Los Angeles Wheelmen, read a paper before a meeting of the American Society of Civil Engineers. "Most of the bikeway thinking to date has been directed towards finding ways to separate bicycles from the normal flow of vehicular traffic," he noted. Whether one thought this was good or bad was largely a moot question, because the simple truth was that separate facilities *wouldn't* be built because they *couldn't* be built:

> Time and experience are bringing us back to reality. There is simply no way to create separate bikeway

[44] I am indebted to David Henderson of the Miami Urban Area MPO for clarifying my thinking on this point.

> systems to any significant extent in 20th Century urban America . . . the pressure to provide additional capacity for motor vehicle has been unrelenting on nearly every roadway in the nation. Until very recently, reserving space on the road for bicycles was the last thing on anyone's mind . . .can traffic engineers and public officials provide for, and then persuade, the motoring public to accept, some minimum provision for bicycle use of the public roads? The possibilities at present are very limited.[45]

Therefore, "the bicyclist will have no choice but to mix with motorized traffic," and a result, "for transportation purposes it is more realistic and productive to think in terms of integrating the bicycle into the normal flow of vehicular traffic." It was therefore necessary to convince adult cyclists "to operate their bicycles as they do their automobiles." Munn's paper, published the following year in the Transportation Engineering Journal, was the first to refer to the "vehicular integration" of cycling, or as it eventually became known, "vehicular cycling."

5. The Dutch Challenge: Third-Stream American Bicycle Planning, 1967-1974

Meanwhile, the small city of Davis, California was moving ahead on a very different course. Davis, about 50 miles east of San Francisco, had long been the site of the University of California's agricultural research center, but the crush of post-war G.I. Bill students started to overwhelm the Berkeley campus, so the state upgraded Davis to an independent university and put it on a crash construction program.[46] Unusually spread out (a legacy of its agricultural station days) and lacking an adequate campus transportation system, the school's first chancellor, Emil Marak, paved campus roads a little wider than usual, restricted cars to peripheral lots, and urged everyone to use bicycles.[47]

The city's bikeway movement began in 1963, when faculty members Frank and Eve Child returned from a sabbatical in the Netherlands at almost exactly the same time the police were starting to crack down on errant cyclists and the city council enacted several new get-tough laws on riders.[48] Assisted by Dale and Donna Lott, who arrived

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[45] Harold Munn, "Bicycles and Traffic," Transportation Engineering Journal 101:TE4 (November 1975): 753-762; active with Los Angeles Wheelmen: "Bike Lanes" [letter of Hal Munn], Bicycle Forum 35 (January 1994): 2-3.

[46] Blake Gumprect, The American College Town (Amherst: University of Massachusetts Press, 2008):144-154.

[47] Robert Sommer, "Bikeway Research at the University of California-Davis in the 1960's" in Cycle History 16: Proceedings of the 16th Annual Cycle History Conference, Davis, ed. Andrew Ritchie (San Francisco; Van der Plas Publications, 2005): 47-51; author's interview with Donna Lott, November 19, 2007.

[48] Gumprect, The American College Town: 146-148.

from Seattle in 1965, the Childs made bicycle use an important quality-of-life issue in municipal elections in 1964 and 1966, with an openly sympathetic slate of candidates elected in 1966. A supportive city public works director, Dave Pelz, asked the university's staff for advice on implementing the new mandate, and the Lotts, Robert Sommer, Melvin Ramey, William Adams, and graduate students Bonnie Kroll and Wes Lum, among others, created an informal research group to evaluate bicycle use and the design of facilities. Their work was highly experimental, and placed an emphasis on modifying the street system to facilitate utilitarian bicycle trips, often by cyclists of limited ability. "The city streets became our laboratory," recalled Sommer many years later.[49] Donna Lott agrees: "Much of what we did was trial-and-error. We put things down. We took them up. We improved it and tried again."[50]

Nevertheless, it is clear that the university study group looked to European, particularly Dutch, techniques as a template. These stressed the complete separation of bicycles and motor vehicles, even to the point of placing bicycle lanes behind parked cars or grassed medians. While such designs improved most cyclists' perceived comfort in mid-block, they frequently created visibility problems and added conflict points at intersections. The practicing engineers at the city's public work department, who had to live with such innovations, were not always as enthusiastic as the researchers. "To a man, they commented about the intersection problems," noted Dale Lott and Sommer.[51] The research group believed that most of these could be addressed by placing additional restrictions on motorized traffic, eliminating on-street parking, converting streets to one-way operation, or installing separate traffic-signal phases just for bicycles.

The work at UC-Davis resulted in a stridently pro-bikeway report published in the Congressional Record in April, 1971. "Just as one cannot have a railroad without tracks or a bus system without highways," it concluded, "so one needs special facilities and regulations for bicycle traffic . . . *no bike paths, no bicycles*."[52] That summer, the California legislature asked CalTrans to undertake a study that both explored "alternatives to bicycling on public streets and highways" and studied "the most feasible and least expensive methods by which existing and future public streets and thoroughfares can more safety accommodate bicycle riders." The Institute of Transportation and Traffic Engineering (ITTE) at UCLA integrated these somewhat mutually exclusive goals into "A Study of Bicycle Path Effectiveness," focusing on "providing bicycle

[49] Sommer, "Bikeway Research at the University of California-Davis": 48-49.
[50] Interview with Donna Lott: n.p.
[51] Robert Sommer and Dale F. Lott, "Bikeways in Action: The Davis Experience," Congressional Record 117 (April 19, 1971): H10830-833; David Takemoto-Weerts, "Evolution of a Cyclist-Friendly Community" in Cycle History 16: Proceedings of the 16th Annual Cycle History Conference, Davis ed. Andrew Ritchie (San Francisco; Van der Plas Publications, 2005): 11-15.
[52] Sommer and Lott, "Bikeways in Action": H10830.

facilities within street rights-of way," that is, on bike lanes and sidewalk-style bike paths.[53]

Its final report, Bikeway Planning Criteria and Guidelines, adopted several Davis designs, such as their "sandwich" bike lane, which placed the lane between the curb and a row of parallel-parked cars, and the use of small berms to separate travel lanes from bike lanes in intersections to force cyclists to make their left turns in a two-step, right-angle, pedestrian manner. This probably shouldn't be surprising, as much of the work was done in Davis, and UC-Davis's Mel Ramey was a co-author. Bob Sommer acknowledged that the design cyclist the Davis group had in mind was the average junior-high-school bicycle user:

> laws, practices and policies pertaining to cycling must take into account that the largest number of riders are under the age of 16. This does not mean that all bike laws, like TV shows, should be written for ten-year olds . . .[but] one cannot pretend that the bikeway struggle is between two groups of purists—touring cyclists and amateur ecologists—and ignore the millions of school age cyclists as non-persons.[54]

Some experienced cyclists had complained that riding bikeways at roadway-like speeds was "a 1,000 times more dangerous than riding on the roadway." His response was equally blunt: slow down or hang up the bike. "Arguments against laws and policies of the bike reformers . . . are motivated explicitly by self interest," he retorted. "It is true that a bikeway system intended to provide safe riding for children will crimp the style of more experienced riders . . . [but] the old solutions based on a small number of experienced and competent individuals no longer are effective."[55]

Traditionally, American bicycle planners have been portrayed as belonging to one of two philosophical groups: either pro-bikeways inclusionists, or radical-libertarian "Effective Cyclists"®. This analytical dichotomy has created a great deal of historical confusion and distortion. This is because there was not *two*, but *three* distinct schools of bicycle planning in the United States in the early 1970s.

First, there was a broad, ill-defined mainstream, then as now, largely pragmatic, eclectic, and incremental. At this very early stage, its strategy could best be described as "try a little bit of everything." Second, there was a rapidly emerging cadre of vehicular cyclists. They were diverse, leaderless, lacking in ideology, and often unaware of each other's existence. About the only thing they

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[53] Gary Fisher, *et al.*, Bikeway Planning Criteria and Guidelines (Los Angeles: UCLA ITTE, 1972).

[54] Robert Sommer, "Point of View: Bikeways, More Research, Less Rhetoric," Bicycling 14, 11 (November 1973): 48.

[55] John Forester, "Toy Bicycle Mentality in Government," Bicycling 14, 9 (September 1973): 52-54; Sommer, "Bikeways, More Research, Less Rhetoric": 48.

shared was youth, a passionate interest in cycling, and a desire to become involved in government. (This latter would change; an explanation is forthcoming.) Finally, there was an active third-stream comprised of egalitarianists such as the Davis research group, Michael Everett in Tennessee, Ken Kohlsbun in Santa Barbara, and others.

The third-streamers openly advocated policies that specifically targeted the weakest and most vulnerable bicyclists, and involuntary users who rode strictly out of need, not choice. Together, these comprised cycling's lowest common denominator, and for the third stream planners, they formed the yardstick by which to measure success or failure. If high-end recreational cyclists couldn't live with their solutions, well, there were lots of other sports in the world. As one Netherlands traffic engineer remarked, replying to a question at an American workshop about that nation's post-seventies bicycle planning program:

> What do "enthusiast cyclists" think? What *is* an "enthusiast cyclist"? Cycling is just something you do. You have to get from point A to point B, so you get on your bike and you ride. It's like a toothbrush. You get up, you brush your teeth. What's the big deal? Do you subscribe to Toothbrush Times? Join a toothbrush club?[56]

Some ardently pro-bikeway advocates have asserted that Sommer and Lott's 1971 Congressional Record report formed the bedrock of American bicycle planning. For example, Davis historian Ted Buehler claims that "the bike lane standards established by Davis were adopted as part of the state highway code and in 1974 by the Federal Highway Administration."[57] The written record does not bear this out. Instead, the work of the Davis research group appears to have been an evolutionary dead-end. While Davis's Dutch-influenced facilities did exist briefly alongside later designs developed elsewhere, they died out with amazing rapidity. Many Davis bikeways illustrated in UCLA's 1972 Bikeway Planning Criteria and Guidelines were re-categorized as "not recommended" by the time the Federal Highway Administration's (FHWA) Safety and Locational Criteria for Bicycle Facilities was completed in 1976.[58] Even the City of Davis changed with the times, as municipal bicycle coordinator David Takemoto-Weerts recounted in 1998:

> Some facilities were less successful than others. One such example was the construction of "protected" bike lanes where motor vehicle and bicycle traffic was

[56] Tully Hendricks, "Opening Remarks: Question and Answer Session," ThinkBike Workshop, Miami, Florida, July 12, 2011.
[57] Theodore Buehler, Fifty Years of Bicycle Policy in Davis, California (Masters Thesis, University of California-Davis, 2007).
[58] Dan Smith, Bikeways: The State of the Art (Washington: DeLeuw Cather/FHWA, 1974): 19-21; Dan Smith, Safety and Locational Criteria for Bikeways, User Manual, Vol. 2 (Washington: FHWA, 1976): 14.

> separated by a raised buffer or curbing . . . [the] benefits of such facilities were soon found to be outweighed by the many such hazards created for their users. Most such well intentioned, but ill-fated designs were phased out years ago.[59]

In 1972 the BIA decided not to fund the most stridently pro-bikeways organization, the "Friends of Bikeology." Horace Huffman reported: "Bikeology: We've visited Ken Kolsbun in Santa Barbara three times and reviewed his efforts. He wants to be major force, but it's largely a one-man effort at present and he's groping for direction." The BIA decided to go instead with the League of American Wheelmen. Two years later, Kolsbun wrote an editorial in Bicycling calling the L.A.W. "An Anti-Bikeway Movement," complaining, in part, that the League was not taking the bicycle seriously as "a replacement for the car." By mid-1975, Bikeology was a spent force, and Kolsbun had moved on to other forms of environmental activism.[60]

Overall, the evidence points to a clear trend away from Davis's categorical approach throughout the 1970's. It was Safety and Locational Criteria for Bicycle Facilities, that proved to be the template for American bicycle planning, not the more exotic of the Davis designs.[61] In the end, the Davis group and the Friends of Bikeology were no more able to forge a planning consensus based on a progressivist agenda of pushing out recreational elites then radical libertarian cyclists could later create one predicated on a strict meritocracy. American bicycle planning would always be incremental, pragmatic, and broadly inclusive. To the extent that any interest group tried to base its agenda on either redistribution or exclusion, it would be doomed to frustration and failure.

6. The Challenge of Proficiency, 1970-1976

A review of cycling magazines before 1973 indicates just how little interest there was among sporting cyclists in the development of bicycle planning. As John Forester of the California Association of Bicycling Organizations noted in 1974, "[the] non-competitive cycling magazines have, in general, been quite gentle with bikelanes."[62]

Sport cycling was predominantly a rural activity engaged in by suburban participants, so mandatory urban sidepath laws were

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[59] Takemoto-Weerts, "Evolution of a Cyclist-Friendly Community": 12.

[60] BIA funding: Memo from H.M. Huffman and F.C. Smith to American Bicycle Manufacturers, n.d. [ca. late 1972], L.A.W. Archives, private collection. Anti-Bikeway: Anon. [Ken Kolsbun], "Point of View: An Anti-Bikeways Movement," Bicycling 15, 6 (June 1974): 77-79.

[61] Interview with Donna Lott: n.p.

[62] John Forester, "Bikelane Countermeasures: Preserving Cyclists' Rights and Safety in a Motor-Minded World" in Proceedings of the Seminar on Planning, Design and Implementation of Bicycle/Pedestrian Facilities, San Diego, Dec. 1974 (New York, ASCE, 1975): 33-41.

typically not a front-burner issue. Within the cycling community, the pressing concern was the increasing number of spot blockages that were rendering more and more miles of rural routes unusable. "Maybe the bicycle has been endorsed by all good people," said Clifford Franz of the League of American Wheelmen at the first MAUDEP conference in 1972, "but it has received only token support . . .compare the position of the bicyclist now with that of ten years ago. Bicyclists are excluded from many bridges, endangered at cloverleaf intersections, cut off at freeways. In short, bicyclists' needs are invariably forgotten." In such cases, the addition (or opening) of a sidepath was sometimes seen as a workable compromise. Thus, there was not the visceral antipathy against specialized facilities that would later be seen in some quarters. The result, in the early 1970s, was a decidedly equivocal stance. This would soon change, due to a rather bizarre confluence of factors.[63]

II

In 1970, Ted Noguchi was the traffic engineer of Palo Alto, California, a suburb of San Francisco that was the home of Stanford University. With the bike boom and increasing enrollments at the University, bicycle ownership had increased more than five-fold over the last six years. "I went to Davis to assess the work being done there," he recalls, "but that was not especially helpful, as the conditions were quite different." The roads in Palo Alto were narrower and busier, but "the biggest difference was on-street parking and the need to remove it to install the system." The original proposal ("Plan A") affected parking in front of 5,600 homes and removed 231 commercial-area stalls. Angry residents and business owners besieged city hall. "We had anticipated that," Noguchi says. "It was built into the process — the plans were prepared from the start in the anticipation that they would be modified."[64]

But by the time Noguchi ended up with "Plan E," he was less in search of the optimal plan than one with the least parking impact. "Parking considerations did determine the ultimate configuration," he admits. (Plan E affected only 741 homes.) Moreover, he was not permitted to eliminate traffic lanes; what would today be called a "road diet." "If we could have cut the number of traffic lanes down to one, we could have used [current bike lane designs]". Instead, some arterials relied on sidewalk-style bikepaths. "I would have preferred another solution," Noguchi says in hindsight. To his credit, Michael Everett notes that "the sidewalk bikeways in Palo

[63] Lee Foster, "Meek Little Creatures? The Political Phenomenon of the Menlo Park Bicycle Festival," Bicycling 13, 1 (January 1972): 14-15; Clifford Franz, "Organized Bicycling and Urban Bikeways" in Proceedings of the Pedestrian/Bicycle Planning and Design Seminar, San Francisco, December 13-15, 1972 (Berkeley: ITTE, 1973): 237-238.

[64] Author's interview with Ted T. Noguchi, 12 December 2011; Anon., "The ABC's of Creating a Bike Route System": 18-19; Everett, "The Bikeway Controversy": 43.

Alto [were] constructed for, and apparently heavily used by, the children of that town."

The real problem was that the city council had earlier approved a poorly-drafted ordinance that, in effect, made their use mandatory. "Making the use of the system mandatory was not initially intended, especially the use of the sidewalks," Noguchi notes. This was caught and reversed several months later, and when it passed, it "really wasn't an issue and didn't make much of a difference [operationally]. I didn't think it was necessary back in 1972."[65]

The system did not generate a great deal of controversy at the time it was installed. Bicycling ran a generally positive report in July 1972, before the system was completed in October. It did not mention any mandatory use requirement. In December, Jack Murphy, executive director of the San Francisco Bicycle Coalition, addressed a bicycle planning conference on bikeway concerns in the area, specifically noting that "there is always the possibility that cyclists might be required to use, on a given street or in a given area, facilities . . .that are not adequate," but he did not mention Palo Alto, suggesting that while the mandatory-use provision may have been on the books, it was not being enforced against experienced, adult cyclists so long as they did not interfere with traffic.[66]

In February 1973, John Forester, who was then a Palo Alto resident, wrote a magazine article for Bike World sharply critical of the new system. However, unlike Fred DeLong's comments the previous November in Bicycling, his article tended to be digressive and hard to follow in places. "He was an arcane technical kind of guy without much in the way of persuasive skills," explained Morgan Groves, the League of American Wheelman executive director at the time. All too often, in an effort to make himself understood, he would resort to theatrics that would descend into histrionics. "He can't argue without being rude," his father, the author C.S. Forester, complained to a friend in 1949, when Forester was just nineteen.[67]

"He used to call me at home, late, and harass me," Noguchi recalls. "He didn't really have anything concrete to discuss, he

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[65] Interview with Ted T. Noguchi, 12 December 2011: n.p.; Anon, "The ABC's of Creating a Bike Route System," Bicycling 13, 7 (July 1972): 18-19; Everett, "The Bikeway Controversy": 43.

[66] Jack Murphy, "Public View of Bicycle Facilities" in Proceedings of the Pedestrian/Bicycle Planning and Design Seminar, San Francisco, December 13-15, 1972 (Berkeley: ITTE, 1973). Forester was apparently cited sometime around February 1973 for not obeying the sidepath law(Flyer entitled "Cyclists for Reopening Our Streets," dated 6 February 1973, L.A.W. Archives, private collection); but it appears likely he deliberately provoked the citation (Forester, "What about Bikeways?": 37); as at least one Palo Alto police officer had previously declined to issue him a violation for riding in the street. (Ibid).

[67] An arcane kind of guy: interview with Morgan Groves, 12 November 2007: n.p.; can't argue without being rude: letter from C.S. Forester to Francis Perkins, 22 April 1949, C.S. Forester Papers, Humanities Research Center, University of Texas, Austin.

just wanted to rail at me. I didn't think that was appropriate." Forester told one professional conference audience that when then chairman of the Palo Alto bikeways committee "was knocked down, we all laughed uproariously. We'd have laughed harder had he been injured seriously." "Practically everybody except cyclists," he once wrote, "combine ignorance, selfish interest, and superstition."[68]

Although a follower of Jim Konski's "all cycling is sport cycling" and Harold Munn's "vehicular integration of cycling" philosophies, he was primarily inspired by the Cyclists' Touring Club's George Herbert Stancer, a man who, over the course of a life that ended in 1962, had not shied away from the melodramatic. Stancer's willingness to subordinate the best interests of the CTC to advance his own journalistic career, and his love of controversy for its own sake, have already been noted. One example from late in his career directly affected the development of the long-delayed British "National Cycle Proficiency Scheme."

First approved in 1938, but shelved because to the war, it was resurrected in 1947 without much progress being made. Finally, in 1957, the Ministry of Transport issued its "Report on Child Cyclists." It recommended fully funding the program immediately. The Royal Society for the Prevention of Accidents (RoSPA) suggested that the CTC be paid to run it. A CTC subcommittee also recommended that the Club create a new, inexpensive "associate member" category to promote the recruitment of its 14-year-old graduates. Despite the potential income, a boon to the Club's then-strained finances, the organization's old guard opposed both ideas, fearing an influx of teens. "A sudden influx of juniors would create a problem," warned one district secretary," they would want to join the [club] runs." "Middle-aged members might not tolerate their pranks and pace," sniffed the Gazette. The CTC chose clubishness over finances, and passed on the offer. The government gave the program — and the money — to the RoSPA.[69]

These incidents appear to have made an impression on Forester — born a British citizen (he moved to the U.S. when he was ten) and an avid reader of English cycling publications from the mid-1940s on. Stancer's experience convinced him, first, that compromise was never warranted as long as you had other options, and second, that it was important to base your support on a stable group of hard-core believers more than on a larger, body of more casual participants.

Finally, while Forester tended to be personally inflexible and uncompromising, at this early stage his ideas were still in flux, leading to thundering pronouncements of categorical imperatives that nevertheless tended to drift somewhat over time. For example, in

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[68] Used to call at night: interview with Ted Noguchi: n.p.; would have laughed harder: John Forester, "Planning for Cyclists as they See Themselves Instead of as Motorists See Them" in Proceedings of the Seminar on Bicycle Pedestrian Planning and Design, December 12-14, 1974 [sic, s.b. 1973] (New York: ASCE, 1974): 315-330; practically everybody: John Forester, Effective Cycling (1993 edition): xi.

[69] Oakley, Winged Wheel: 139-141.

1973, he was actually a *proponent* of some types of bicycle facilities:

> Now I'm going to introduce what may become the best idea of all these — bicycle boulevards. . . Cyclists like boulevards, despite the traffic, because they go to desired locations, are wide enough for all, protected by stop signs against side street traffic, have traffic signals adjusted in their favor, and aren't impeded by the residential thicket of stop signs. . . If you give cyclists streets with all the characteristics of a boulevard, they'll use it for sure. But, you object, it would then be a boulevard, full of motor traffic on an unplanned route. Here's where the invention enters. Keep the stop signs that presently impede traffic, maybe add a few more, but mark each one with an additional "BIKES GO" sign. Also mark the side street stop signs with an additional "BICYCLE CROSS TRAFFIC DOES NOT STOP" notice . . . frankly this is a special rule for cyclists.[70]

Although he personally had abandoned "bicycle boulevards" by 1975, they later became the backbone of Palo Alto's bikeway system, replacing most of the early 1970s facilities.[71]

What little reaction Forester's February, 1973 Bike World article did receive was generally positive, but its muted response showed just how low a priority the "bikeways" issue had among club cyclists. Also, in early 1973, Bike World was largely a west-coast regional magazine, still trying to crack into the national market by positioning itself as an edgier alternative to the establishment Bicycling. As a result, Forester hadn't gained many adherents, and those he had persuaded usually focused more on mandatory sidepath issue than the facilities themselves.

All that changed in October 1973. Six months earlier, the Food and Drug Administration had issued a proposed new set of safety regulations for bicycles intended for use by children under age 16. It then immediately transferred authority to a newly created agency, the Consumer Product Safety Commission (CPSC). Because of the transfer, nobody was sure if the proposed rules would end up applying to all bicycles or only to sidewalk bikes, or how imported, high-performance machines would fare. Among club cyclists, rumors fed on themselves until near-hysteria resulted. "You're probably aware of the new standards of the Food & Drug Administration dealing with 'youngsters' bikes," wrote one worried L.A.W. board member to

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[70] Forester, "Planning for Cyclists as they See Themselves Instead of as Motorists See Them": 323-324.

[71] For this reason, it is not inaccurate to say that Forester and Ellen Fletcher are the godparents of the current Palo Alto bikeway system. Ms. Fletcher has a bicycle boulevard named after her. Is it unreasonable to suggest that one should be designated in Mr. Forester's honor as well?

Morgan Groves. "What they plan to enforce will wreak havoc on the sophisticated and expensive bikes that many of us ride."[72]

New developments were covered almost monthly by all the cycling magazines. They started "government affairs" or "bike law" columns, most of which continued to run long after the CPSC issue had blown over. Like the "Nightline" news show, which ABC started as a nightly update of the 1979 seizure of the U.S. Embassy in Iran, then continued for decades thereafter as a general late-night news program, the interest of the enthusiast cycling community in what the government was up to was suddenly jerked from apathy to intense interest, but for all the wrong reasons. It was a classic case of getting off on the wrong foot, and staying there.[73] In early 1973, the magazines were desperate for anyone with even a smattering of technical knowledge who could help fill all those new, yawing column-inches of space.

Forester wrote an obstreperous article in the October 1973 issue of Bike Week, alleging a vast conspiracy between the government and the American bicycle industry to prohibit the importation of high-quality foreign cycles and drive cyclists off the roads and onto bikeways. "We are driven off the roads, forced to ride dangerously, and will soon be compelled to ride toy bicycles," he wrote. The article was so over the top that Bike World's own editors were compelled to add a disclaimer: "we have no right to accuse the government of collusion with the Bicycle Manufacturers' Association . . . It is no use writing sarcastic words about supposed sneaky tricks between the BMA and the Federal government. That will get us nowhere."[74]

Several firms, both foreign and domestic, did consider suing the CPSC, mostly for procedural reasons, but quickly withdrew when they negotiated a final version of the rules they were satisfied with. Seizing the opportunity, Forester (acting as his own lawyer) and an Atlanta bike club did sue, using many of the industry's original arguments. The case dragged on for almost four years until a federal court, noting on its own initiative that the CPSC had done a poor job of following its own administrative procedures, delivered a split-the-baby decision that allowed both sides to declare victory. Less than two years later Ronald Reagan took office and

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[72] Letter from William N. Hoffman to Morgan Groves, 1 August 1973, L.A.W. Archives, private collection. The entire story of the CPSC bike regulations is long, complex, and controversial. See: Bruce D. Epperson, "The Great Schism: Federal Bicycle Safety Regulation and the Unraveling of American Bicycle Planning," Transportation Law Journal 37, 2 (Summer 2010): 73-118; Ross D. Petty, "The Consumer Product Safety Commission's Promulgation of a Bicycle Safety Standard, Journal of Product Liability 10 (1987): 25-50; Ross D. Petty, "The Impact of the Sport of Bicycle Riding on Safety Law," American Business Law Journal 35, 2 (Winter 1998): 185-224.

[73] The public reputation of the CPSC in the middle and late 1970s--on all issues, not just bicycles—was roughly equivalent to that of FEMA in 2006, a year or so after Hurricane Katrina.

[74] John Forester, "Toy Bike Syndrome," Bike World (October 1973): 24-27; "The FDA Versus You," Bike World (October 1973): 3.

most of the rules were never fully enforced, the "10-reflector" rule being the most notable exception.[75]

I have argued at length elsewhere that the CPSC case is the single most important event in the modern history of American bicycle planning. At exactly the same time that the Dutch-based "third stream" school of the Davis research group was dying out and American bicycle planning was evolving in the direction of an broad, consensus-driven version of vehicular cycling, the CPSC controversy served as the optimal incubator for a new, virulent strain of ultra-libertarian vehicular cycling that eventually came to be known as "Effective Cycling."®

It has always been assumed that Effective Cycling® (a proprietary brand-name) and vehicular cycling (a generic description) are synonymous. They are not. Vehicular cycling is a diverse, undefined, relatively inclusive school of bicycle planning. Effective Cycling® is the title of a book and a service mark owned by John Forester, used by him for three educational courses for cyclists, cycling instructors, and bicycle planners. On the other hand, Forester himself prefers to describe Effective Cycling® more broadly as a "package of cyclist traffic safety training, adequate highway standards for bicycle travel, and equal enforcement of the already adequate rule of the road."[76]

When these are presented as the overall goals of vehicular cycling, the response of most American bicycle planners is a nod of the head and a shrug of the shoulders; perhaps a mild protest that the third element is a tad too narrow. What really sets Effective Cycling® apart is the contention of its adherents that *it is a complete, universal and closed system*; or, as former Bicycling publisher James McCullough once sarcastically put it: "Effective Cycling consists of everything you really need to know to ride every day, under any condition, for whatever purpose you desire. . . Maybe a lot of us will choose *not to go where the cars go*."[77]

For example, in 2004, Robert Hurst wrote a book, The Art of Urban Cycling, that explicitly sought to adapt Effected Cycling to inner city conditions. "That I feel so obliged to address his vehicular-cycling principal right away [in my introduction] and then so often afterward is testament to its power," he wrote.

> Forester's advice is usually quite sound, [but] a large number of cyclists have added a militant, confrontational tone to the framework of his message.

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[75] In my Transportation Law Journal article, I posited that Forester sought a court ruling that would impose onerous and costly regulations only on domestic bicycle makers, leaving foreign makers untouched, in an attempt to fatally cripple the American bicycle industry: "The Great Schism":105-106. CPSC rules not enforced: Petty, "The Consumer Product Safety Commission's Promulgation of a Bicycle Safety Standard": passim.

[76] Forester, "Bikelane Countermeasures: Preserving Cyclists's Rights and Safety in a Motor-Minded World": 41.

[77] James C. McCullough, "The Politics of Cycling Space," Bicycling 19, 11 (November 1978): 10-13;

> They have taken the vehicular-cycling principal and bastardized it . . . Where the vehicular cycling principle encourages cyclists to deny any off-street options and to boldly stake out a position among motor traffic, flexibility [should] be our guide. We will use the safest, easiest, and most stress-free option available at any given time. We will exercise all our rights to cruise the busiest city streets, but also our rights and abilities to use the quiet ones, and the off-street paths. We will have the best of both worlds.[78]

Forester was apoplectic. "Hurst invents imaginary defects in vehicular cycling," he wrote in a review. This was a heretofore unheard of problem – someone who wasn't trying to *attack* the holy cannon, but *rewrite* it! Forester simply resorted to the ancient remedy of casting him out of the church. "Hurst's cycling is not vehicular cycling," Forester wrote, "his style of cycling is not the activity that he argues vehicular cycling to be." So much for *that* issue.[79]

Of course, the problem with any closed belief system is that it invariably degenerates into groupthink and, when identified with a single individual, a cult of personality. In 2007, Forester introduced himself to a non-cycling audience by saying "that's me, John Forester, the leader of the vehicular cyclists and the developer of the intellectual opposition to bikeways."[80]

But not so fast. Clearly, the bicycle proficiency course developed by Fred DeLong in 1969 and his warnings in Bicycling in 1972 and 1973 that bikeways "suffer their own problems" qualify as nascent movements towards "vehicular cycling," and they predate *any* involvement by Forester in bicycle advocacy. The same is true for the "bicyclism" declaration of James Koniski at the San Francisco MAUDEP conference in 1972. Bill Wilkinson's warning that "more can be done for so many more bikers" by improving urban streets than by

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[78] Robert Hurst, The Art of Cycling (Guilford, MT: FalconGuides, 2007 [2004]): xv.

[79] John Forester, "Traffic Cyclists as Performance Artists: A Review of the Art of Cycling": 9-10. http://www.johnforester.com/articles/

[80] John Forester, "Bicycling, Transportation and the Problem of Evil" (an address to the Preserving the American Dream Conference, October 2007): 8. http://www.johnforester.com/articles/ Forester has long asserted that "wages of sin" moral zealotry is one of the root causes of what he calls the "cyclist inferiority complex." (See Effective Cycling, 1984 edition, p. 315.) This fundamentally Ameri-phobic line of argument was actually plagiarized from comments made by former British Transport Minister Earnest Marples at a November 1967 meeting of the Royal Society for the Arts and Manufacturers (E. C. Claxton, "The Future of the Bicycle in a Future Society," Royal Society for the Encouragement of Arts, Manufacturers and Commerce Journal 116, 5138 (January 1968): 114-134, esp. 131-133: "Man is conditioned by original sin, and once you put him in a motor car you multiply that original sin by the number of horses underneath the bonnet!" etc.)

restricting cyclists to bikeways, proceeded any of Forester's published works, save his first Bike World article.[81] By 1974, it was the official policy of the League of American Wheelmen that "The L.A.W. supports bike paths as separate facilities *only* where no public road exists, on bridges, to bypass or parallel limited access highways, or in special recreation and park areas."[82]

Also in 1974, Harold Munn had read and submitted his paper for publication to ASCE describing the central task of bicycle planning as convincing cyclists "to operate their bicycles as they do their automobiles." It was published in Transportation Engineering in 1975.[83] Again in 1974, Lawrence Walsh, a city employee, at San Jose, told a MAUDEP audience that:

> [we] did not begin [our] bike route system until after the pilot efforts of Davis and Palo Alto, so benefited from the successes and failures of those systems . . . only when the design of bikeways is based on the bicycle as a vehicle can engineering, enforcement, and education work in concert to produce a truly safe environment.[84]

And finally, at the same conference, Robert Shanteau of the Traffic Safety Research Corporation told his audience that "bicyclists can best be helped by including consideration of bottlenecks in transportation plans, assuring that existing problems are fixed and new ones are not created . . . a resolved bottleneck lets bicyclists ride harmoniously, legally and safely with other traffic.[85] Again, these things were being actively discussed six months *before* Forester taught his first course at Foothills Community College, and eleven months *before* he self-published Effective Cycling.

The degree to which Forester has been able to convince others that he "invented" vehicular cycling is evident from the recollections of John Williams, who would later serve as the long-time editor of Bicycle Forum, about the origins of his notable bike plan for the City of San Luis Obispo. Widely distributed by USDOT in the mid-1970s, it revolutionized thinking about how bicycle planning should be done, liberating the "bike plan" from the burden of the "bikeways plan." Williams started working on it in the early 1970s while still an undergraduate at CalPoly. "Two friends and I did the

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[81] Delong, "Bicycle Proficiency: Where on the Road?": 36; Konski, "Its Up to You": 20-23; Wilkinson, "Construction, Maintenance and Enforcement on the George Wahington memorial Pathway": 40.

[82] [Kolsbun], "Point of View: An Anti-Bikeway Movement," 78-79.

[83] Munn, "Bicycles and Traffic": 757-758.

[84] Lawrence B. Walsh, "Factors in Bikeway Design" in Proceedings of the Seminar on Planning, Design and Implementation of Bicycle/Pedestrian Facilities, San Diego, Dec. 1974 (New York, ASCE, 1975): 308-311.

[85] Robert M. Shanteau, "Bicycle Bottlenecks: Bicycle Planning from a Bicyclist's Point of View" in Proceedings of the Seminar on Planning, Design and Implementation of Bicycle/Pedestrian Facilities, San Diego, Dec. 1974 (New York, ASCE, 1975): 240-254.

first San Luis Obispo bike plan," he recalls, "at that time there was a CalTrans plan that had been done by UCLA or someone." (This was Bikeway Planning Criteria and Guidelines, which pins down the date of Williams's memory to 1972.) He presented the plan to the city council. Impressed, they awarded him $5,000 "to fill out the details," and hired him for the summer ("at $2.12 an hour") until he started graduate school that fall at the University of Waterloo. A friend dropped by his office in the basement of City Hall "and mentioned that there was a poster on the wall of the hallway in the architecture building about a bikeway plan competition."[86]

This was the First Urban Bikeways Design Competition (UBDC-1), sponsored by the Urban Bikeway Design Collaborative, a consortium of mostly northeastern planning departments, based at the time at MIT. UDBC-1 had four categories of prizes (best amateur, best professional, best at promoting safety, best at promoting intermodal linkages.) The San Luis Obispo proposal, which Williams named, tongue firmly in cheek, the "Teen Angel" plan, was, for its time, a radical concept, in that it eschewed the then-traditional methodology of equating "bicycle plan" with "bikeways plan." Radical or not, it was a hit with the judges: it tied for first place in the "best professional" category, won the "safety" category outright, and took another third.

"I focused on improving streets for bicyclists, getting rid of bottlenecks, bad pavement, and so on, not to mention teaching people to cycle," Williams explained. One reviewer commented that he was most impressed by the fact that the plan "proceeds from a premise novel among bicycle transportation plan assumptions: that there are limits to what planning can do." In its introduction, Williams wrote that "In my opinion, bikeways are only a part of the solution . . . and I became convinced during my analysis, certainly not the most important part." "What I didn't like about [Bikeway Planning Criteria and Guidelines] was the emphasis on sidewalk bikeways" Williams later wrote. "As I put my plan together, riding around and looking at conditions, I couldn't see the value of sidewalk bikeways . . . I was also pretty much of an Effective Cycling person."[87]

But here, Williams's memory is faulty: UBDC-1 was held in early and mid-1974, with the awards handed out at the San Diego MAUDEP conference in December. By the spring of 1974, Forester had published only a handful of articles, mostly in the regional magazine Bike World,[88] and mostly on "how to ride safely" techniques,

[86] Electronic mail transmission from John Williams to the author, 12 December 2011 and 13 December 2011.

[87] Wes Lum, "1974 Urban Bikeway Design Competition Awards" in Proceedings of the Seminar on Planning, Design and Implementation of Bicycle/Pedestrian Facilities, San Diego [Dec. 4-6] 1974 (Berkeley: ITTE, 1975): 418-423; Rowe, "Three Promising Bicycle Organizations": 59-60; Darryl Skrabak, "Bike Law: The Bikeway Backlash," Bicycling 16, 9 (September 1975): 25-28; Electronic mail transmission from John Williams to the author, 12 December 2011 and 13 December 2011.

[88] "What about Bikeways? (Bike World, Feb. 1973); "The Toy Bike Mentality" (Bicycling, Sept. 1973); "Toy Bike Mentality" (Bike World, Oct. 1973); and

not bicycle planning issues. The phrase "Effective Cycling®" didn't even exist yet: it was first used sometime around December 1974. The book didn't come out until November 1975.[89]

Either Williams was innovating a whole new school of American bicycle planning by himself, or many of the fundamental concepts behind vehicular cycling were already in circulation by early 1974. The first is not impossible, but the second is far more likely. The polemics of attribution aside, the core ideas of vehicular cycling were, in 1973, already out there, ripe for the picking, ready for those who, like a 23-year-old architecture graduate waiting to enter planning school, were not already trapped into a standardized bureaucratic mode of thinking.

Think back for a second to the contretemps over Robert Hurst's The Art of Urban Cycling. Both Hurst and Forester assumed, as a matter of course, that vehicular cycling and Effective Cycling® were synonymous, so it was legitimate for Forester to pass judgment what was or was not appropriate for the vehicular cycling cannon, even if they did not agree about what that content should be. But remember, Effective Cycling® is a set of specific intellectual properties that belong to one individual, while vehicular cycling is an amalgam of communal beliefs, opinions, best practices, and information that belongs to no one. Why do both men take it for granted that any one individual has some special gatekeeping authority?

Forester has just as much right to tell Hurst his ideas are bad as anyone else, and complete authority to decide if any of them will make it into Effective Cycling, but he holds no privilege to decide if they should be considered a legitimate part of "vehicular cycling" by me or anyone else. Bluntly put, when it comes to the history of vehicular cycling, John Forester wasn't there at the start, he won't be there at finish, and for a lot of its significant history, he was either somewhere else, standing on the sidelines, or just too busy with trivial side-spats over fifty-cent reflectors or handlebar hang-tags to be bothered.

On the other hand, the sheer marketing genius of marrying the still-somnolent anti-bikeways movement to the raging supernova of the CPSC controversy cannot be denied. Jay Townley, former vice-president of the Schwinn Bicycle Co., once said that "if it hadn't been for the CPSC case, Forester would have ended up some obscure bike club president somewhere." That is, his extremely polemical ideas didn't necessarily succeed because they were the only take on vehicular cycling available in 1974-75; as we have seen, they weren't. It shouldered its way to front of the pack because they had the best marketing hooks imaginable: fear and resentment.

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two or three of the four "aggressively defensive cycling" articles that ultimately appeared in Bike World between December 1973 and May 1974.

[89] The first published use of the phrase "Effective Cycling" I have been able to find is: Forester, "Bikelane Countermeasures: Preserving Cyclists' Rights and Safety in a Motor-Minded World": 41. It was tacked on at the end of the paper, undefined, as a slogan, suggesting that it was of very recent origin.

Effective Cycling® was vehicular cycling masterfully repackaged to make it emotionally indistinguishable from the CPSC "threat" to high-quality imported bikes. It was the CPSC bicycle safety rules that were taking up page after page of the cycling magazines in 1973 and 1974, not bikeways. But by linking them together into a single indistinguishable identity called "government action," both wells could be poisoned together, even though the CPSC rules were effectively a dead issue by the end of 1974.[90] In November 1977, Bicycling's Darryl Skrabak wrote that:

> A remarkable transformation has occurred in the attitude of bicycle activists toward government. Only a few years ago bicycle activists clamored for official attention . . . Today the response of these same activists to similar government attention is often much different. There is suspicion, even hostility . . . Those in government who have sought to lend a hand to bicyclists are likely to be discouraged from further efforts when the very people they have tried to help respond with criticism.[91]

7. Professionalization and the Struggle for Control, 1977-1981

In May, 1977 the CPSC and the USDOT convened the Bike-Ed '77 conference in Washington, D.C. It was probably the largest gathering of civil servants, consultants, and advocates working in the field of bicycle planning to date — 215 attendees. It was also (arguably) the most significant event to that point in the history of American bicycle planning. Many of the transportation professionals who would go on to guide the field of bicycle and pedestrian planning first met there, and at least two non-governmental organizations can directly trace their roots to it: the Bicycle Federation, later the National Center for Biking and Walking, publishers of the long-running policy/technical newsletter Bicycle Forum; and the Urban Scientific and Educational Research Corporation (USER).[92]

Three months earlier, Darryl Skrabak, Bicycling's government affairs columnist, noted that "thousands of miles of bikeways [have been] paved, striped, and signed." The problem was that a lot of them didn't work well. "The unanticipated result was difficult to

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[90] Townley quote: Epperson, "The Great Schism": 118. Dead issue by late 1974: DeLong, "Editor's Notes: CPSC Standards": 6; Fred DeLong, "Bucking the Authorities," Bicycling 15, 11 (November 1974): 42-43; Paul Hill, "Bicycle Laws and Regulations," Bike World (February 1976): 28-31.

[91] Darryl Skrabak, "Bicycle Activists: Where they Stand Now," Bicycling 18, 2 (February 1977): 50-51.

[92] A sampling of current and soon-to-be bicycle planning notables included Dan Burden, Bruce Burgess Phil Burke, Ken Cross, Elizabeth Drake, John Fegan, John Forester, Gihon Jordon, Phyllis Harmon, Eileen Kadesh, Ed Kearney, Keith Kingbay, Don LaFond, Katie Moran, Tom Pendleton, Nina Dougherty Rowe, John Schubert, Bill Wilkinson, and Curtis Yates: Bike Ed '77 A Conference Report, May 4-6, 1977, Report CE014-066: Appendix 2. NGOs: Rowe: "Three Promising Bicycle Organizations": 58-60.

accept for many riders, particularly those who had worked hard to get bikeways built," he wrote. "The controversy caused the destruction of some bicyclist organizations and seriously drained others." [93]

Now, both government agencies and nongovernmental organizations were turning to other strategies. Skrabak, no government cheerleader over the last three years, urged cyclists to move beyond blanket opposition and support these new alternatives. "Opposition is hardly the most desirable position to take in dealing with government . . . [because] there is much that government can and should do. However, he admitted that "a difficulty in proposing alternative steps is that bicyclists are not yet agreed on what those steps are."

The largest and most frequent meetings up to this point had been the MAUDEP conferences. But these were explicitly seminars on "the planning, design and implementation of facilities," and by the seventh one, in July 1978, they running out of steam. Out of twenty-four sessions, only eight dealt primarily with bicycling issues — the rest were given over to pedestrian planning. Even the eight cycling sessions mostly avoided what Michael Everett labeled "the bikeway controversy."[94]

James Stacey of the City of Syracuse, New York summed up the general air of pessimism when he told one audience that "little progress is being made in overcoming the gap between bikeways planners and bicyclists, and the two sides seem to locked in an endless dance around a either/or position: either we have bikeways everywhere, or we have none at all." Waiting in the wings were "traditional transportation engineers and planners" who resented "bikeways as taking needed funding away from standard highway projects," and who were hoping the bikeways controversy would provide the excuse they needed to effectively shut down bicycle programs entirely. [95]

"Greed may be the ultimate source of this program, but a more immediate root of the highway planner's fear may be a perceived threat to the professionalism and professional decisions of the planner," he explained. As a result, funds originally earmarked for bikeways, but put on hold as a result of the "bikeway controversy," would probably never be "diverted to more important facilities and programs, such as safety and bicyclists' training programs, lockers, showers, bus bike-carriers, increased road-maintenance for biking comfort and safety, and promotional programs." Instead, they would

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[93] Skrabak, "The Bikeway Backlash,": 25-26; Skrabak: "Bicycle Activists: Where they Stand Now": 50-51

[94] Michael D. Everett, "The Bikeway Controversy" and Ronald Thompson, "Introduction: Bikeway Issues" in Proceedings of the Seminar/Workshop on Planning, Design and Implementation of Bicycle and Pedestrian Facilities, Chicago, July 19-21 1978 (New York, MAUDEP, n.d. [1978]): 42-47 (Everett) and 202 (Thompson).

[95] James E. Stacey, "Bridging the Gap Between Bikeway Planners and Bicyclists" in Proceedings of the Seminar/Workshop on Planning, Design and Implementation of Bicycle and Pedestrian Facilities, Chicago, July 19-21 1978 (New York, MAUDEP, n.d. [1978]): 203-209.

simply be returned to the general highway fund. Stacey summed up the problem as he saw it: "most bicyclists and bike clubs show an abysmal lack of understanding about how the local city government, housing authorities, or state governments operate." The problem was becoming less one of "how can we get them to spend money for bikeways" then one of "how can we get them to spend money for *anything*?"

Bike-Ed '77, on the other hand, was the first bicycle advocacy conference to stake out ground entirely outside the topic of bikeways or facilities-based planning.[96] Unlike MAUDEP, it was primarily comprised of young turks, the up-and-comers in the world of bicycle planning. It is best known as place where Ken Cross debuted his landmark multi-city study of bicycle/motor vehicle accidents, the follow-up to his 1973 Santa Barbara study. Katie Moran, at that time still working for NHTSA, recalls that "he had agreed to preview the results of his landmark work . . .six months before his report's final publication . . . we all had had been hungry for solid guidance." Bill Wilkinson, then with the Department of Transportation, noted that "it informed and influenced everything that followed related to bicycle safety education."[97]

In an interview a few months later, Cross himself explained that "I personally don't think that bikeways are going to impact accidents very much one way or the other . . .I'm personally not too sold on bike lanes as a means of accident reduction; but I don't think that's the only criterion on which to evaluate [them]." He agreed with James Stacy's assessment of the problem: "there's money to spend on bike lanes but not on other things, and there is no way to switch that around. Either you spend money on bike lanes or you don't spend any money at all. . . people don't like to spend money on evaluation, they like to spend money on building things."[98]

A variety of different educational programs from around the country were presented at Bike-Ed '77 and discussed. Forester reviewed his Effective Cycling® course. Although he acknowledged that in its current form, it wasn't really suitable for children under 14, he said he was creating elementary and intermediate versions for younger riders, and suggested they would be suitable for use as a national standardized program, something along the lines of the British National Cycle Proficiency Scheme. "At the present time, there is no market that I can see for volunteer bicycle safety education," he told his audience. "You are not going to get people to come in and do this kind of thing."[99]

Similarly, when the conference met in plenary session to make recommendations, the idea of modifying Effective Cycling® into a

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[96] Skrabak, "Bicycle Activists: Where they Stand Now": 50-51; Darryl Skrabak, "Rules are Being Made, Why Not be There?" Bicycling 18, 4 (April 1977): 80-81.

[97] "How Friends and Colleagues Remember Ken Cross" at "Ken Cross Research Scholarship," www.http.//abpb.org.

[98] "Bicycle Forum Interviews Ken Cross": 7-10.

[99] John Forester, Effective Cycling (Palo Alto: Custom Cycle Fitments, 1975): 4.6-1.

universal school program was considered, but rejected: "while many people thought that John Forester's program was good in terms of its content and approach, there were questions about how it could be implemented on a national scale." Indeed, when they later appeared, the elementary and intermediate courses filled up 15 "jam-packed" course periods, required a certified instructor and two assistants, and could accommodate only 30 students per course.[100]

In general, the Bike-Ed '77 did not achieve its stated goal of "hammering out in two and one-half days a national strategy for bicycle education in the United States." Some of the attendees believed that doing so would result in government agencies concentrating on education to the exclusion of other program elements. Others expressed the concern that an overriding focus on safety would only reinforce an existing presumption that "bicycle" programs were essentially "safety" programs, with accident reduction becoming the overriding goal to the exclusion of everything else. Given inadequate resources or inflexible demands to demonstrate results, there would then be the temptation to turn "less accidents" into "less cycling" through fear or discouragement.[101]

But Bike-Ed '77 did succeed in cross-fertilizing almost every major development in bicycle planning for the next decade. John Williams recalled that "when I was at Waterloo, I started a snarky little typewriter newsletter called Cyclateral Thinking. It was a combination of bike planning, comics, other stuff. I sent copies around, and Bill Wilkinson got one and liked it. I think he told me that Cyclateral Thinking was the inspiration for Bicycle Forum." Williams became the editor of Bicycle Forum for over two decades. The name Cyclateral Thinking also inspired the name for the compendium of excerpts from the UDBC-2 competition, held in 1975.[102]

Meanwhile, Lyle Brecht and Vince Darago, two original members of the Urban Bikeway Design Collaborative that ran the competitions, formalized the loosely-knit collaborative by creating a new corporation called the Urban Scientific and Educational Research Center (USER). In search of projects to keep it going, they were awarded a NHTSA contract to organize a series of ten bicycle safety workshops around the country under the supervision of NHTSA's Katie Moran. Slightly later, Darago went to the west coast to organize a bicycle safety program at Stanford University. Out of this emerged Sprocketman, an all-ages bicycle safety comic book drawn by Louis Saekow. Saekow eventually drew three different Sprocketman books, and John Williams drew a smaller brochure version for the North Carolina DOT.[103] The two Stanford books, partially in color, were

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[100] Bike Ed '77 A Conference Report: 69-70, 83; "jam packed": John Forester, Bicycle Transportation (Cambridge: MIT Press, 1983): 188; instructor and two assistants: John Forester, Effective Cycling (Cambridge: MIT Press, 1984): 305.

[101] Bike Ed '77 A Conference Report: 89.

[102] Electronic mail transmission from John Williams to the author, 12 December 2011 and 13 December 2011.

[103] Cyclateral Thinking, Sprocketman: Electronic mail transmission from John Williams to the Author, December 12 and 13, 2011; Rowe, "Three Promising

printed in runs of about 12,000 each; the third version, with a less expensive black-and-white cover (and with Sprocketman now sporting a helmet), was distributed in the tens of thousands by USDOT.

In 1980, Katie Moran, by now a consultant with the Mountain Bicyclists' Association in Denver, prepared what would become the first of two comprehensive documents that would close out the first "golden era" of American bicycle planning.[104] Both broke away from the previous focus on bikeways and looked much more towards the kind of comprehensive, vehicular cycling-based approach that Williams outlined in his "Teen Angel" plan. Moran's report was Bicycle Transportation for Energy Conservation, prepared for the USDOT (Wilkinson was the project manager) and funded through the National Energy Conservation Policy Act of 1978.

The contract specified the development of "a Comprehensive Bicycle Transportation Program (CBTP), largely focusing on utilitarian, point-to-point tripmaking. As a result, the report identified three priorities: 1) increasing operator's awareness and competence; 2) elimination of roadway surface and design hazards; and 3) increased funding to expand bicycle program activities.[105] With only minor changes, these have remained the three consensus goals of American bicycle planning ever since. While a multitude of lesser priorities have come and gone over the years, or have reflected local circumstances, the CBTP has formed the core of almost every state, regional, and local bicycle plan prepared since 1980.

Implementation, however, was — then as now - a different matter. Overall, the report recommended a $102 million national cycling action plan. Of this, $250,000 was proposed for an adult on-road bicycle training program. On the other hand, training at the elementary and intermediate level was left to local and state governments. Of the $102 million total plan budget, $100 million was proposed for financing through the then-existing Section 141 program. It permitted, but did not require, the expenditure of highway funds for alternative projects up to a maximum of $20 million per year. Given its legislative restrictions, relying on it to meet the facilities element of the plan essentially meant

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Bicycle Organizations": 59-60. The three comic book versions can be viewed on-line at several sites. John Williams's black-and-white version is reproduced in John Krausz and Vera van der Reis Krausz, The Bicycling Book (New York: Dial Press, 1982): 8-14.

[104] The "golden era" was the relatively generous period of federal financing for research, planning and development that originated with the great bicycle boom of 1969-73, was pushed along after the boom ebbed by the first energy crisis of 1973, and was launched into the stratosphere by the second energy crisis of 1979, the latter during the Carter administration. The "golden era" ended with the barren years of the Reagan administration, 1980-88, followed by steep recession during the first two years of the subsequent Bush administration. The ice jam was finally broken by the ISTEA Highway Act of 1991.

[105] Katie Moran, Bicycle Transportation for Energy Conservation: Technical Report (Washington: USDOT, May, 1980, Report DOT-P-80-092): 4-5.

focusing on roadway-linked improvements such as road shoulders and blockage removals over separated facilities.[106]

However, no funding came through for any of the plan's sub-elements, and the United States never did implement a version of Britain's Cycle Proficiency Scheme. As Ronald Engle of NHTSA explained several years later:

> [Congress] wants to increase the amount of commuting, so forth, so on, trips by walking and bicycling. They also wanted to decrease the casualties by 10 percent. But at the same time Congress did that, they also took 70 percent of the funds that would go to pedestrians and bicycle safety and drew them away. So I think there's a message there from Congress . . . As a matter of fact, we don't have any bicycle safety program for the next couple of years.[107]

II

The second document that significantly defined American bicycle planning throughout the last two decades of the Twentieth Century was the Guide to the Development of New Bicycle Facilities, produced by AASHTO in 1981. UCLA had produced its Bikeway Planning Criteria and Guidelines for CalTrans in 1972, and between 1974 and 1976 the FHWA had followed this up with its five-volume Safety and Locational Criteria for Bikeways. The fifth volume of that series, 93 pages long, contained its design and planning criteria. Even before it was completed, CalTrans decided that it needed a shorter, more focused manual for its design engineers, one conforming to the newer FHWA standards. A California Bicycle Facilities Committee met from 1975 to 1978, and the new California design manual was issued in 1978. It, in turn, became the basis for the AASHTO Guide. However, the Guide was even briefer than its CalTrans progenitor, only 31 pages, mostly because only four pages were devoted to on-road facilities. The remainder was given over to off-road facilities, mostly recreational bike trails.[108]

In essence, AASHTO had given up on the idea of recommending anything beyond rudimentary standards for on-street bicycle facilities, due to a lack of consensus as to what should be recommended. As noted in the introduction of this report, when AASHTO revised the *Guide* ten years later it added the explicit disclaimer that "Existing highways . . . must serve as the base system to provide the travel needs of bicyclists."

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[106] Katie Moran, Bicycle Transportation for Energy Conservation (Washington: U.S. Environmental Protection Agency, 1980, Report DOT P-80-092): 92-106.
[107] "Comments of Ronald Engle," Chairman's Conference on Nighttime Bicycle Safety. Available at: http://cpsc.gov/LIBRARY/FOIA/meetings/mtg95/NighttimeBike.pdf.
[108] Forester, Bicycle Transportation (1994 edition): 320; Jennifer Toole, Revising the Guide for the Development New Bicycle Facilities: Final Report (Washington: Transportation Research Board, 2010, Report NCHRP 15-37FR): 3

Cycle advocates and highway engineers were in agreement about one thing: while there was no harm in purely recreational facilities, provided they were designed well and not used as a subterfuge to ban cyclists from roadways, just broaching the subject of on-road facilities was a no-win situation, so why bother? Moreover, as one historian put it, this perspective "held sway throughout the late 1970s and 1980s because city officials found in vehicular cycling advocates the cheapest and easiest course of action to pursue. As urban planner James Stacey predicted at the 1978 MAUDEP conference, given an equal choice between spending money on a facilities project or not, an official's decision is usually pretty easy to predict.[109]

III

Unable to get Effective Cycling® adopted as America's National Cycling Proficiency Scheme, Forester turned to the League of American Wheelmen. Elected to the L.A.W.'s board in 1976, Forester lent his trademarks to the League, but retained ownership of the company that remained the sole-source supplier of its textbooks.

By now the League was debating whether it should foster better relations with the bicycle industry, government agencies and other nonprofits. Forester, however, was disdainful of what he saw as a "mass-participation" approach, preferring to model the L.A.W. along the lines of Stancer's 1920's and 30's CTC. This included not removing the more scabrous material in the Effective Cycling® program. "removing the difficult and controversial parts to allow popular teaching," he retorted, "would delay the recognition that effective cycling technique ought to be the national standard."[110]

Forester was became L.A.W. president in 1979. The League's entire office staff quit *en masse* at the same meeting. Forester himself lasted only a year. "My presidency was felt by some to be too controversial," he later recounted. The former L.A.W. Bulletin editor remembered it slightly differently: "John Forester was a difficult person with a lot of people."[111] Forester left the board of directors in 1983 and revoked his permission to use the name Effective Cycling® and his proprietary materials. The League changed the name, re-wrote some of the material, and carried on.

In late 1980, Rodale Press, the publisher of Bicycling magazine, released John S. Allen's The Complete Book of Bicycle Commuting. Starting with some articles he wrote for Bike World in 1976, Allen had become a regular writer for Bicycling, which, by this time, was being edited by James McCullough, with assistants John Schubert and Susan Weaver. "Around 1979 Rodale had been sent a

[109] AASHTO, Guide for the Development of New Bicycle Facilities: 2-3; Stacey, "Bridging the Gap Between Bikeway Planners and Bicyclists": 203-209.Furness, One Less Car: 71.

[110] Forester, Effective Cycling (1984 edition): 307.

[111] Forester, "John Forester's Account of His Involvement with the League": unpaginated; Forester a difficult person: John S. Allen's interview with Phyllis Harmon, 16 January 2006, Tape #2, at 30:59.

proposal for a commuting book, but it didn't look very promising, and editors McCullough and Schubert turned to me," Allen recalls. He readily acknowledges that his approach was influenced by Forester: "I had been riding in Boston urban traffic since moving to the area in 1971, but my approach to it changed when I picked up a copy of Forester's Effective Cycling." He has often pointed to its guidance in lane positioning, and how using it helps builds confidence that develops "a sense of being a good citizen on the road." Probably the biggest difference between The Complete Book of Bicycle Commuting and Effective Cycling was that Allen included three levels of skill, experience, and assertiveness, making no categorical statements as to which one was "better" or "worse". However, he did gently urge riders to advance themselves up through the categories as quickly as practical, because he believed "Level 3" riding to be the most comfortable and useful.[112]

At the time, Effective Cycling was still a homemade, mimeographed, comb-bound work selling for $9.00, post-paid. Allen's was a 305-page hardback with almost 200 photographs and drawings, selling for $12.95. When it was released a year later, the paperback edition actually cost less when shipping was included. "Forester claims . . . Effective Cycling consists of everything you really need," wrote McCullough, "[but] some 15 years ago in Philadelphia, Technical Editor Fred DeLong, in conjunction with the American Youth Hostels, had a similar cycling proficiency program . . .cyclists' mistakes were analyzed and corrected on the spot. Then the group was led into increasingly heavy traffic with no protection except their newly learned skills. [They] had participants from 8 to 70 and no mishaps."[113]

Allen's book proved far more popular than Effective Cycling. Ultimately, 20,000 copies of The Complete Book of Bicycle Commuting were printed, and Allen believes almost all sold out. Rodale Press never published a second edition, but quite a bit of the material was inserted into another book, Glen's New Complete Bicycle Manual, a publication of Crown Books, when Allen edited a major overhaul of it in 1987. That same year, Rodale approached Allen about condensing the material in The Complete Book of Bicycle Commuting into a booklet and on-line publication for use by the Commonwealth of Pennsylvania. It was published later that year as The Bicycle Driver's Handbook. In 2001 Allen licensed the Pennsylvania material from Rodale, updated and improved it, then published it as Bicycling Street Smarts. It has been customized for different states, and at least one organization, the Florida Bicycle Association, uses it as

[112] John S. Allen, The Complete Book of Bicycle Commuting (Emmaus, PA: Rodale Press, 1981); Electronic mail transmission from John Allen to the author, 25 January 2012.

[113] The first commercial edition of Effective Cycling wasn't published until 1984. James C. McCullough, "The Politics of Cycling Space," Bicycling 19, 11 (November 1978): 10-13.

the text for their bicycle proficiency training courses. "Editions in French, German, and Spanish are in the works," Allen notes.[114]

Allen denies that there is any competition between the two men or their products, but while their core values are virtually identical, Allen has proven himself far more adept at working with governments and organizations, while Forester has stuck to his basic approach of "it's a war, not a contract negotiation," and many observers believe that his star has been in decline for many years, while Allen's has been in the ascendant, and he is now generally considered to be the spokesman for America's vehicular cyclists.[115]

8. Conclusions

What, then, can we take from this vital (long) decade in the history of American bicycle planning?

1. Vehicular cycling is a unique, indigenous American style of bicycle planning. At various times it has been denoted by various generic or proprietary labels, including bicyclism, bicycle driving, Effective Cycling®, Street Smarts®, and Cyclecraft®. While each has had its own particular shade of meaning, all have shared four common elements. These are: 1) a primary emphasis on cyclist proficiency; 2) a reliance on the existing roadway network to provide its basic infrastructure system; 3) a similar reliance on the standard (or at most, barely modified) motor vehicle code; 4) a preference for programmatic government involvement in bicycling matters over high-capital bicycle facilities.

2. Vehicular cycling is broad-based, and cannot be attributed to any one "inventor," "developer" or "leader." That being said, some general attributions can be made:

   a. Cyclist proficiency training classes can be traced back to the work of Fred DeLong at the Philadelphia AYH Council as early as 1969 or 1970. It had matured into a fairly comprehensive course by 1972. John Forester greatly enhanced its on-road emphasis to create the Effective Cycling® course in mid-1975. In 1981, Rodale Press published the first commercially available book, John S. Allen's The Complete Book of Bicycle Commuting. In 1988, Allen and Rodale Press developed Bicycling Street Smarts®, with material derived from the 1981 book. Allen continues to update and market the Street Smarts® program.

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[114] Clarence W. Coles, Harold T. Glenn and John S. Allen, Glenn's New Complete Bicycle Manual (New York: Crown Publishers, 1987); John S. Allen, Street Smarts (Florida Version), (Gainsville: Florida Bicycle Association, 2001); Electronic mail transmission from John Allen to the author, 25 January 2012.

[115] Forester, Effective Cycling (1993 edition): 570; Street Smarts most widely circulated work: Mapes, Pedaling Revolution: 43; Allen as vehicular cycling spokesman: Ibid.: 137.

b. Opposition to urban bicycle facilities was articulated as early as November 1972 by Fred DeLong in Bicycling, December 1972 by Jim Konski at the first MAUDEP conference (reprinted in June 1973 in Bicycling), in February 1973 by John Forester in Bike World, and in May 1973 by Bill Wilkinson at the Bicycles USA conference. In June 1974, Morgan Groves, L.A.W. executive director, issued a policy statement in the L.A.W. Bulletin stating that it was League policy to support paths "only where no public road exists, on bridges, to [bypass freeways], or in special recreation and park areas." By 1975-76 John Williams's bikeway-free "Teen Angel" bicycle for the City of San Luis Obispo was being widely distributed by USDOT as a model to be emulated. In 1977, Bicycling's Darryl Skrabak wrote that the urban bikeway movement was effectively dead. After 1979, the MAUDEP conferences were discontinued because there was so little interest among bicycle planners in bikeways development.

3. Credit for the name "vehicular cycling," as well as the first complete articulation of its basic principals, must go to Harold C. Munn, for his paper, "Bicycles and Traffic," which he read before a conference of the American Society of Civil Engineers, and submitted to their Transportation Engineering Journal in the fall of 1974. "The task," he wrote, "is to convince [cyclists] to operate their bicycles as they do their automobiles." It was published in November, 1975. However, it must be noted that various facets of vehicular cycling can be traced to the works of at least ten authors during the years 1970-1976.

4. Much of the historiographical confusion about the early years of American bicycle planning has resulted from the belief that there were two contending schools of bicycle planning in the 1970s: vehicular cyclists and pro-bikeways advocates. A review of the literature from this period indicates that this simply is not the case. There were, instead, three clearly defined schools of bicycle planning: 1) vehicular cycling; 2) a broadly inclusive, eclectic, pragmatic school, best described as "middle-of-the-road"; and, 3) an actively redistributionist "third stream" that adamantly supported specialized bikeways, strongly opposed any policy that demanded even a modicum of cyclist proficiency, and was vehemently populist in outlook. These planners and advocates openly admitted that their designs would impair high-skill cyclists. By the time of the first AASHTO Guide in 1981 (and probably some two to four years sooner) this "third stream" had all but ceased to exist.

5. What did emerge from out of the 1970's was a single, broad, centrist school of American bicycle planning that could either be described as "non-ideological vehicular cycling" or more simply "pragmatic-eclectic." Where there had once been an active leftist "third-stream" school, now reduced into insignificance, there was

instead an enthusiastic, but almost equally marginal, libertarian Effective Cycling® school.

Today, as was the case in 1985, bicycle professionals are vehicular cyclists because they have to be: with no meaningful funding for adequate urban bicycle facilities in sight, they have no choice. The funding that does exist is sporadic, often unplanned and usually spent for political, not technical, reasons. A shocking amount of it is simply wasted. Vehicular cycling remains the predominant mode of planning in 2012 for the same reason it became the predominant mode thirty years ago: it adheres to what has become, by bitter experience, the basic rule of American bicycle planning: “first, do no harm.”