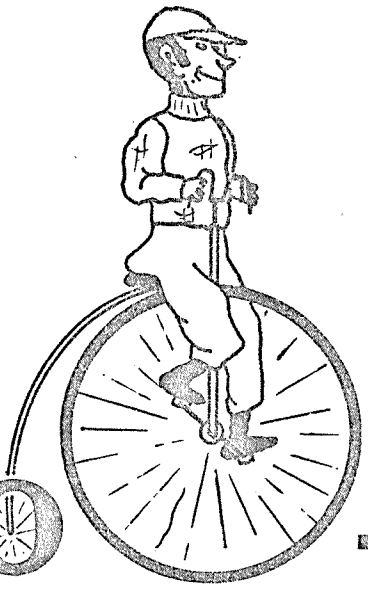


Two-Wheeling In Cheyenne

CHEYENNE-LARAMIE COUNTY
REGIONAL PLANNING OFFICE
1700 SNYDER AVE.—P. O. BOX 269 AREA (307) 638-8977 CHEYENNE, WYOMING 82001

December 18, 1975

Honorable Bill Nation
Mayor, City of Cheyenne
Members of Cheyenne City Council

Dear Mayor Nation & City Council:

We're very pleased to present the City-wide Bikeway Plan. It has gone through many stages and changes. Most often the changes were the result of input we received from various citizen's groups and government agencies.

We've made an effort to show the plan to as many people as possible. We have taken the plan to the Greater Cheyenne Recreation Commission, the City Bikeway Planning Committee, the Laramie County Safety Council, the CHATPP Citizens Committee and the Planning Commission. We've also discussed this plan with George Dale of the Wyoming Highway Department, Chief Restivo and Sargent Tafoya of the Cheyenne Police Department, Transit Manager "Chuck" Schenkerberg, the City Engineer's Office, and Dave Romero, Director of Parks and Recreation. Gayle Taylor of the former Cheyenne Bicycle Club was also kind enough to come down to the Office on several occasions to discuss the plan.

This is only the beginning in providing bikeway facilities for the City of Cheyenne. As the City changes, so must the bikeway plan. Through the continuous efforts of all of us, the potential of "two-wheeling" will be realized.

Sincerely,

Rande & Carol

RP & CN/cas

A BIKEWAYS SYSTEM FOR CHEYENNE? WHAT IS IT? ARE THERE THAT MANY BICYCLISTS IN CHEYENNE? HOW MUCH WILL IT COST? WILL THERE BE MANY PARKING SPACES REMOVED? WHERE? WILL THE BIKEWAYS SYSTEM MAKE IT POSSIBLE FOR ME TO RIDE MY BIKE DOWNTOWN TO WORK? WHEN CAN WE DO IT?

Two Wheeling in Cheyenne - Past, Present, and Future

Bicycling is becoming more and more popular in Cheyenne. People of all ages are using their bicycles for both recreation and transportation. One indication of this growing popularity is bicycle sales. Approximately 2,695 were sold last year (1974-1975). Compared to an estimated Cheyenne population of 50,000, approximately 5.4% of the population bought a new bicycle.

Bicycle sales over the past year 1*

Store	Number of Bicycles	Increase of last year	% Adult
Alpine Haus	100	25%	100%
Bicycle Service Center	100	5%	100%
Bike Shop	680	-30%[3*]	22%
Wahl's Schwinn	400	10%	60%
Wards	952[2*]	12%	85%
K-Mart	48	15%	90%
Gibson's	165	20%	28%
Grand Central	250	-30%[3*]	40%
Total	2,695	- 2[3*]	59%

1* Most of the figures are rough estimates made by the store managers.

2* 1st 6 months of this year.

3* This is typical of the national experience. According to the Wall Street Journal, the leveling of sales is the result of most people already having bought their bicycle either last year or the year before.

Results from the Bicycle Survey indicated that there are about 2.4 bicycles and bicyclists per family. This survey was conducted in spring of 1974, by the Parks and Recreation Department with the help of Gayle Taylor from the Cheyenne Bicycle Club. There were 2,104 surveys returned from public elementary and junior high schools and 70 from other sources. The survey asked how many people in the family rode bicycles and where they rode to. Almost half of the reported total trips were to places besides "around the neighborhood."

Results of the Parks and Recreation Department Bicycle Survey 1974

1. Total number of surveys returned = 2,174

2. Number of bicycles = 5,237

3. Ages of Bicycle riders =

5 - 12 (grade school)	2,438
13 - 15 (junior high)	1,061
16 - 18 (high school)	450
19 - 29	242
over 30	1,111
Total	5,302

4. Three most frequent bicycle trips

	Most Often	Second	Third	Total
Work	80	56	36	172
Shopping	65	224	19	468
Neighborhood	1,632	313	202	2,147
School	138	272	115	535
Park	137	464	218	819

The Cheyenne Bike Club is one group in particular that has been concerned for a number of years about the safety problems as well as having a desire to encourage bicycling. In 1973, they developed a bike facilities plan, which was the starting point for bicycle facility planning in Cheyenne. Their proposal was taken to the Wyoming Highway Department, Cheyenne Area Transportation Planning Process for approval. However, the Highway Department could not act on this or any other proposal until an official bicycle facilities plan was adopted by the City.

Undoubtedly the growing enthusiasm for bicycling, that was demonstrated at the public meetings on the Community Development budget, was a motivating factor in the City's decision to program $20,000 of the 1975-1976 Community Development budget for bikeways. Lions Park, a centrally located major park, was chosen for initiating a city bikeways system. A good number of the surveyed bicyclist indicated that it was a frequent destination point on bicycle trips. The plan for the bike path in Lions Park was adopted by the City Council this summer. The following report is a scheme for integrating bicycle riding in with the Cheyenne transportation system. Making "two wheeling," whether for recreation or utility, a safer more enjoyable activity.

Bicycle Facility Design Standards

Increased safety for motorist and bicyclist alike is the primary reason for providing bike facilities. Whether facilities increase safety is predicated on them being used by cyclists as well as respected by the motorist. Strict enforcement and educational programs will encourage the motorist to respect bikeway facilities. However, for the bicyclist, use of facilities is in most cases left to the discretion of the individual. Therefore, facilities must be desirable routes capable of attracting bicyclists.

An attractive bikeways system must first be "imaginable," i.e., the system must be laid out in such a way as to give the cyclist a clear sense of where the system will take him. It must also provide a fairly direct, reasonable route between the bicyclist's origin and destination, also allowing flexibility for deviation.

Third, a facility must provide a readily discernable increase in safety. To achieve these three qualities in planning bike facilities, it is usually necessary to locate them within major automobile transportation corridors. Often these routes are those a bicyclist could not ride without the protection of a facility. The following quote from Bikeways-State of the Art, 1974 by the Federal Highway Administration best sums this up.

> In urban areas, efforts to achieve imageability result in location of bikeways on or along streets which have continuity through the community --- and streets having such continuity tend to be the arterial and collector streets. This works out particularly well for utility cyclists since they seem to place a premium on directness of travel and since the activity centers which are their principal destinations tend to be located so as to be best accessed from arterial or collector streets. Provision of facilities in the arterial and collector corridors also appears logical in the sense that this provides protection to cyclists at points where they are most exposed to traffic hazards.

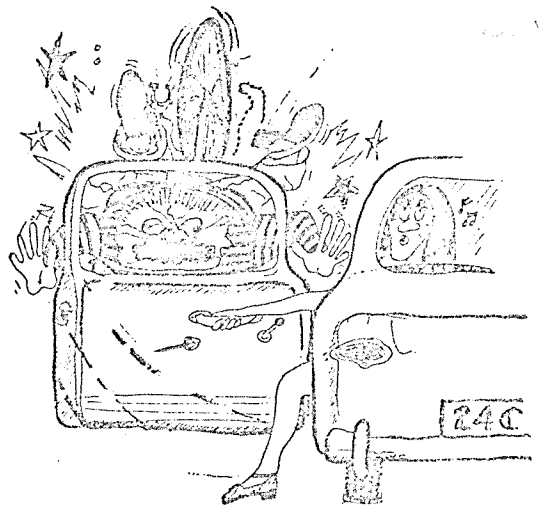
In Cheyenne, locating bike facilities along major roadway corridors can work out particularly well. It allows for inter-neighborhood bikeways connecting large residential areas with each other as well as activity nodes such as parks, schools, downtown and shopping areas. Within the residential areas

themselves, traffic vehicular speeds are generally too low to justify bikeway facilities. Many of the routes chosen in this plan are along streets that most bicyclists presently avoid, choosing an indirect route along residential street instead. However, a bicycle facility such as a bike lane or path provides the additional safety increment needed to make these streets the preferable routes.

Routes, Lanes, and Paths

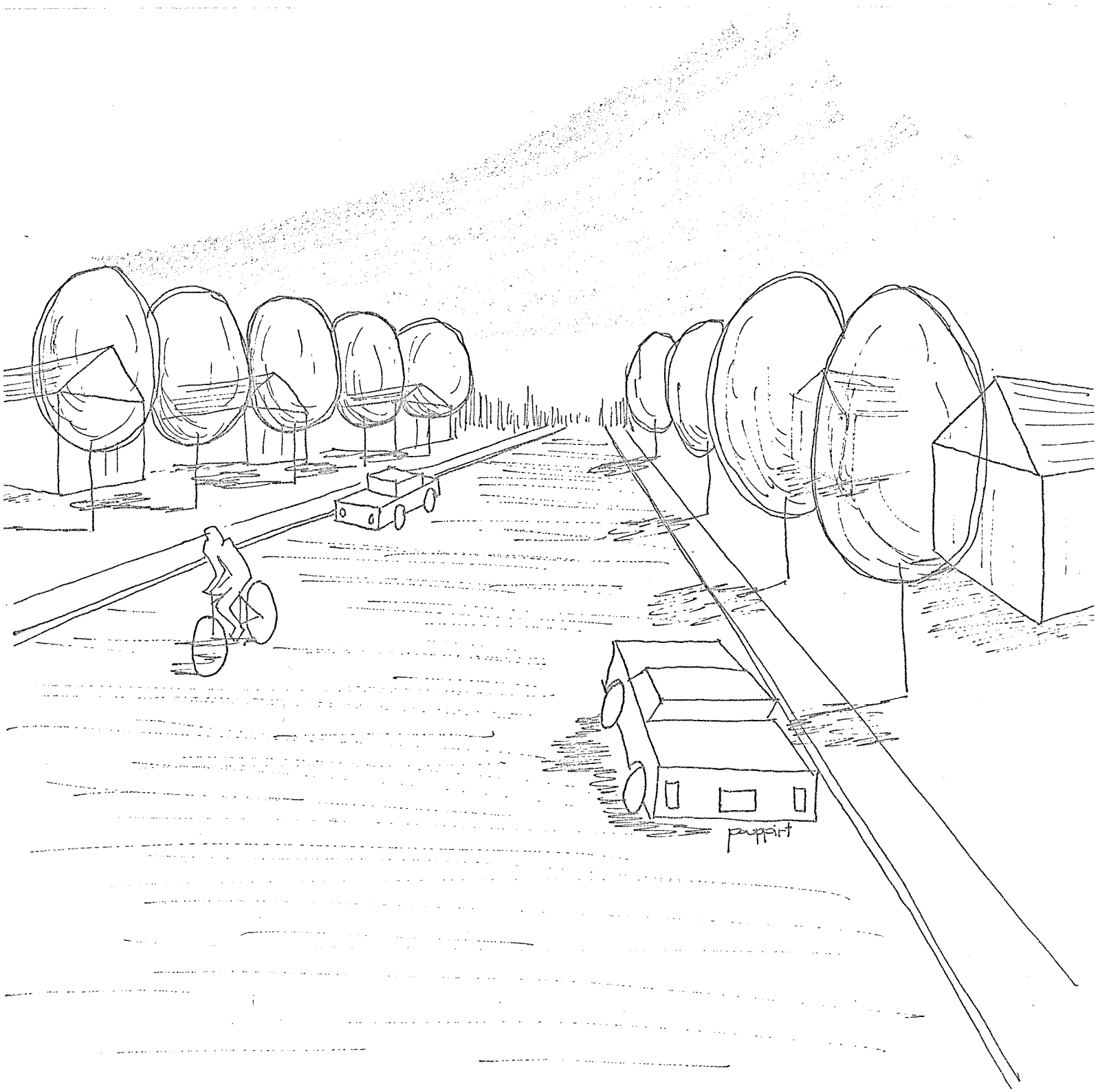
There are many different kinds of bicycle facilities or bikeways as they are often called. However, their purpose is the same, to make bicycling safer by integrating it into the overall transportation system. Generally, bikeways are classified into three broad categories: bike route, bike lanes, and bike paths. (see following examples)

OF COURSE THERE ARE SOME PROBLEMS WE JUST CAN'T SOLVE!

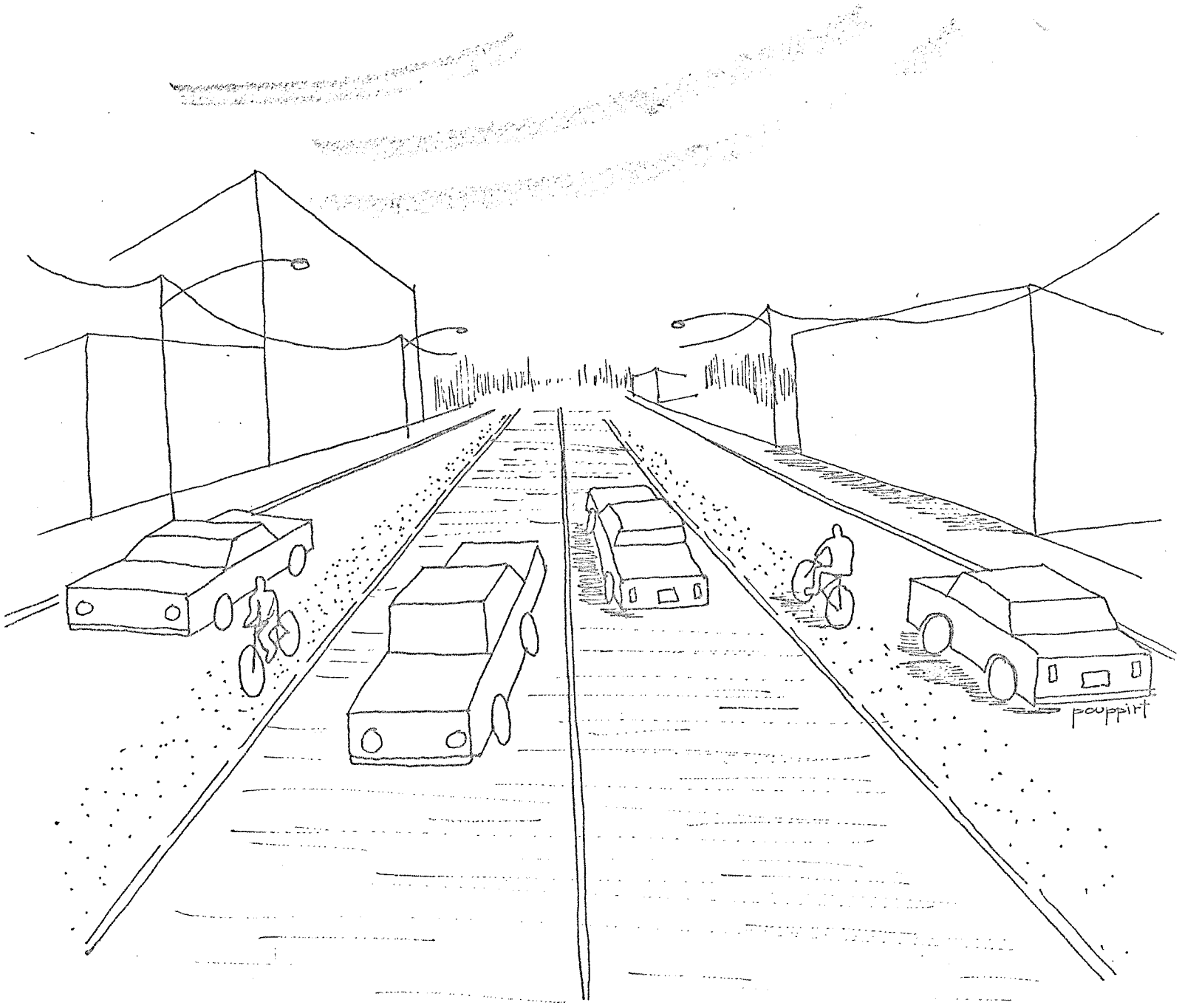


Bicycle booby trap. It is not only the moving vehicle which is a hazard, for the door swung open suddenly from a parked car can demolish the urban cyclist just as effectively.

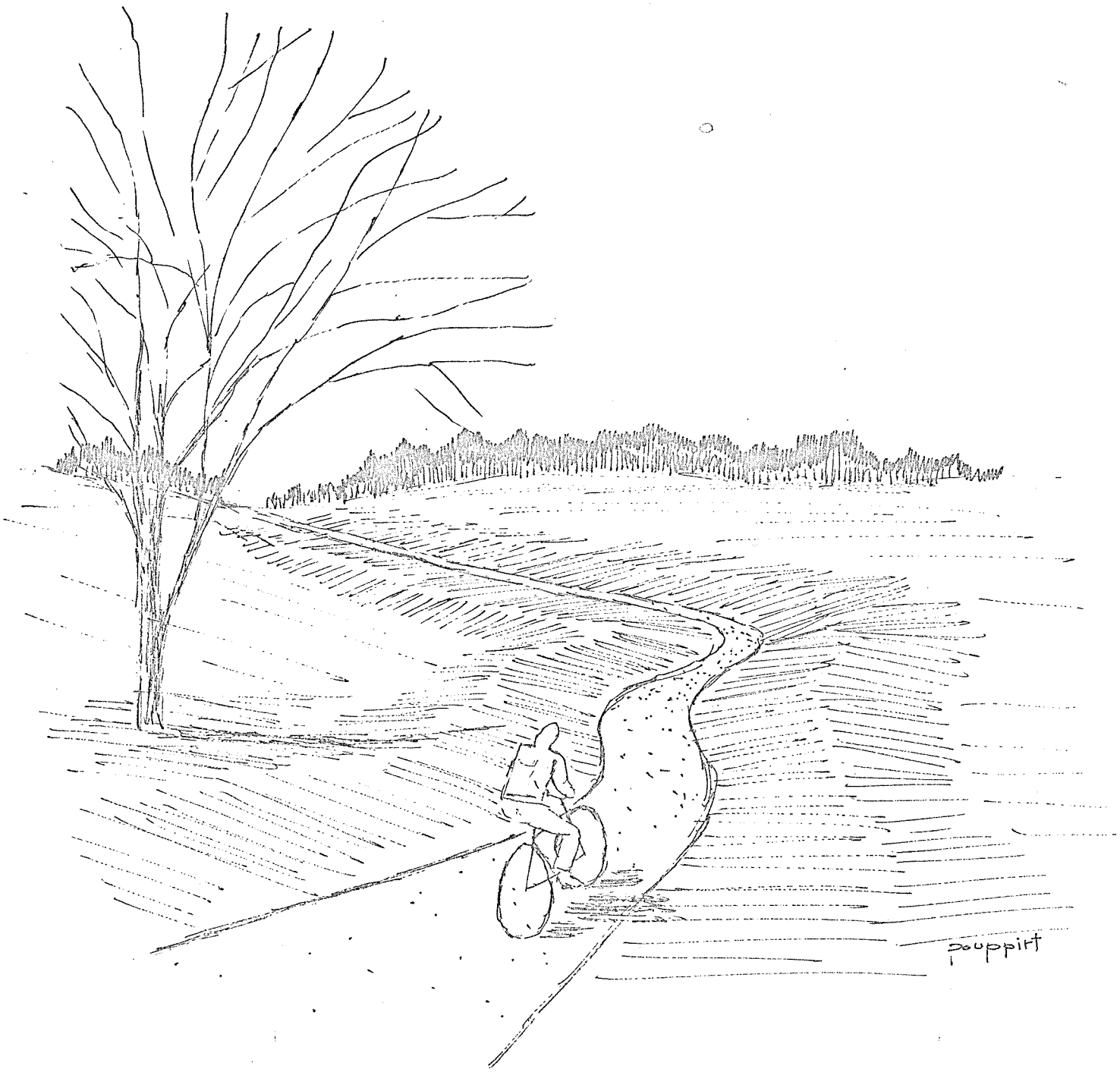
A bike route is a shared right-of-way, usually a street designated as a bike route by signs or stencils on the pavement. Their primary function is to warn motorists of potential bicyclists and to advise the cyclist of a desirable route. These are generally located on residential streets.



A bike lane is a restricted travel lane for the exclusive use of bicycles. They are denoted on the street by signs and street markings including a lane strip and word or picture message. Bike lanes clearly designate which part of the street a bicyclist should use and which part motorist should use, thus facilitating traffic flow and increasing safety for all travelers.



A bike path is a completely separate right-of-way for the use fo bicycles. The facility may be a protected lane, an on-street bike lane physically separated from moving vehicular traffic, or it may be an independent path. Bike paths provide the maximum degree of safety for bicyclists.



Facility Dimensional Requirements

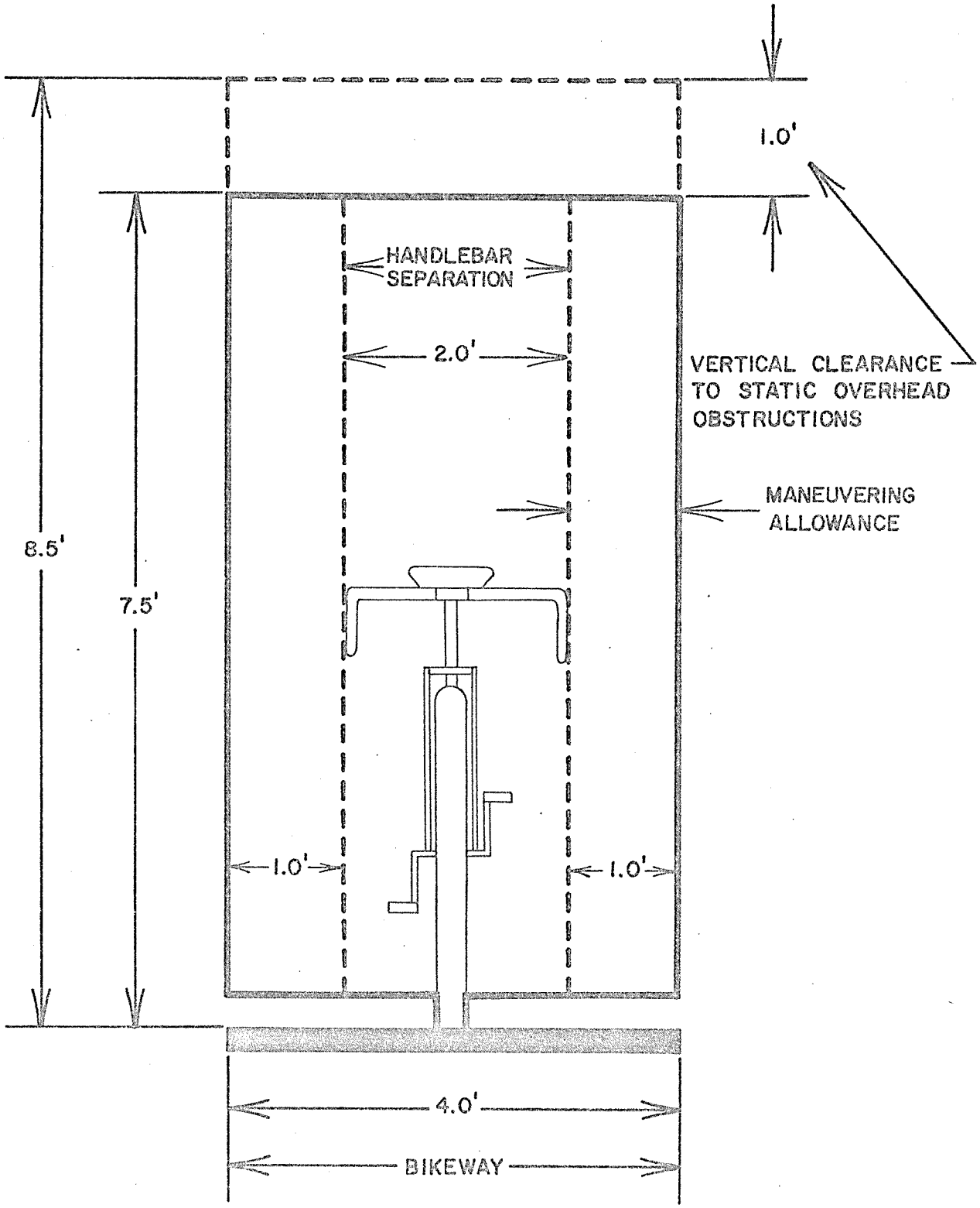
The bicycle facility dimensional standards that have been adopted by most municipalities were developed in Germany. They are based on a Bicycle Space Module, the space an adult on a bicycle occupies and an additional lateral space allowance since a bicycle does not travel in a true straight line.

The second set of space requirements that must be considered, particularly when designing bike paths, are those for maintenance and construction vehicles. Paths less than eight feet wide (8') must be constructed by hand. An eight foot width is also necessary for maintenance vehicles.

Eight foot (8') bicycle paths allow for two cyclists to ride side by side and reduce labor cost in both construction and maintenance. Four foot (4') wide bike lanes provide adequate space for one bicyclist, and eight foot (8') for bi-directional travel. Vertical clearance is usually no problem except when there are a number of trees along the facility. However, this is not a difficult maintenance problem to cope with.

Estimates for construction costs of bicycles paths have been based on an eight foot (8') wide standard. However, in many cases a conflict arises between maintaining parking and following the standards. An acceptable compromise in these instances is three foot (3') bicycle lanes located between the parking and outside vehicular travel lanes. Since the average car needs only six (6) to six and a half feet (6½') of the eight foot (8') parking lanes, the smaller bike lane would in essence be almost four and a half feet (4½') wide.

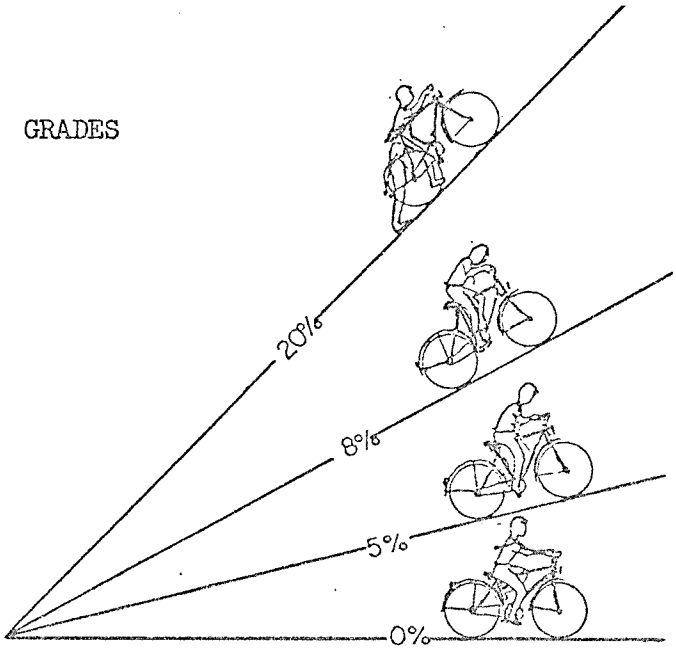
BICYCLE SPACE ENVELOPE



Grade

An important consideration in proposing streets for Cheyenne's bikeway system is grade. While adverse grades should be avoided where possible, it is recognized that due to hilly terrain characteristics in parts of Cheyenne, there may possibly be some portions of the system with undesirable grades for cycling.

GRADES

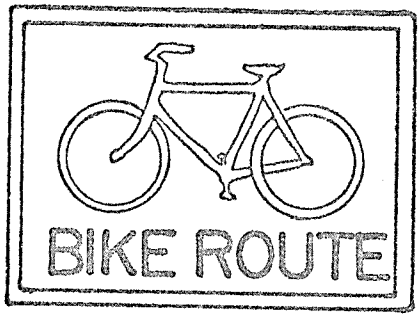


The general rule regarding grades is that they can be up to 10 percent if the grade runs for less than 200 feet. For each additional 75 of length, the acceptable grade is reduced by 1 percent. Grades over 100 feet long should be kept at four percent or less if feasible, and generally at 1.5 to 2 percent. However, grades should not be entirely avoided since part of the enjoyment of cycling is contact with naturally rolling terrain.

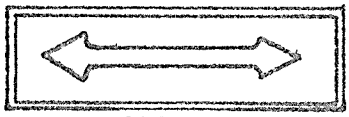
Route Signs and Markings

The National Joint Committee on Uniform Traffic Control devices has adopted signs for bikeways. The signs are illustrated on the following page. The Committee has not officially adopted pavement markings. Stenciled pavement markings, both word messages and bike symbols are quite effective and are recommended in the Uniform Manual on Traffic Control Devices. The most common word messages are BIKE LANE, or BIKE ONLY.

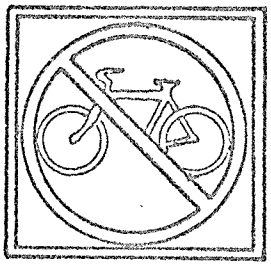
Pavement markings are an acceptable replacement for the standard "Bike Route" signs. They are also a preferable method in view of the high cost of signing and an Urban Environment already cluttered with signs. Pavement messages and/or signs are only needed at "decision points" such as intersections. They should be used sparingly so as not to deluge the public and thus lost their effectiveness.



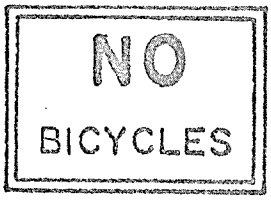
Used for marking an officially designated on- or off-street bikeway. White symbol, lettering and border on green background. 24" x 18"

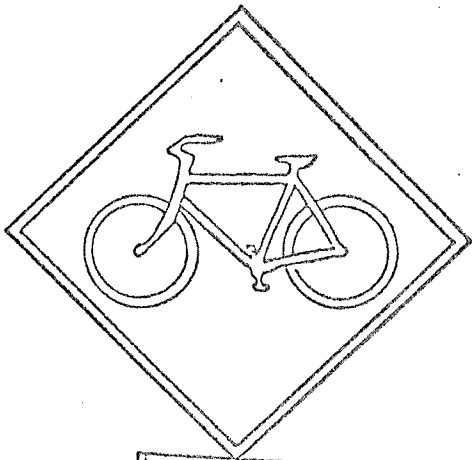


When necessary, supplementary directional arrows may be placed below the "Bike Route" sign. White symbol and border on green background. 18" x 6"



Selective exclusion sign used to regulate the types of traffic which may or may not enter a particular right-of-way. Black bicycle symbol, lettering and borders on white background with red slashed circle. 24" x 18"





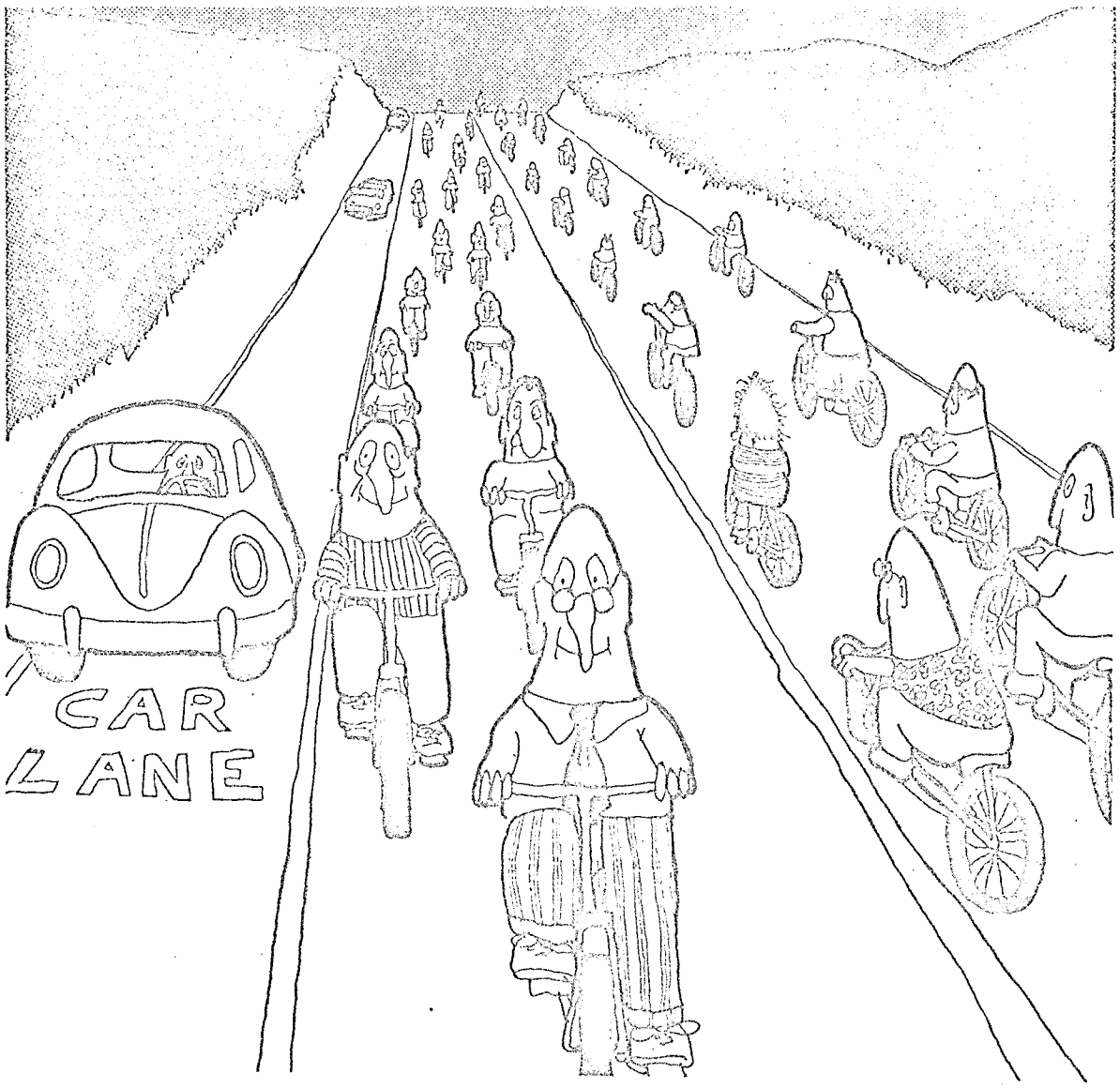
Used for warning motorists in advance of a point where an officially designated bike route crosses a roadway.

Black symbol and lettering and border on yellow background. 30" x 30" mounted as a diamond, and 24" x 18".

No lane demarcation method has been officially adopted. Many communities including Fort Collins, Colorado, and Austin, Texas, have been using a double white four inch (4") stripe. The stripe on the outside of the lane is solid and the inner stripe is dashed. The cost estimates for the Cheyenne system bike lanes were based on the parellel solid and dashed stripes method.

Bicycle Parking

Parking facilities for bicycles must be a part of any bikeways plan. Facilities need to be placed strategically along the routes at trip generating points such as park, shopping areas, government buildings, etc... Of course the City can't be expected to provide all the necessary facilities; however, it should encourage local firms, institutions and service organizations to coordinate with each other and the City.



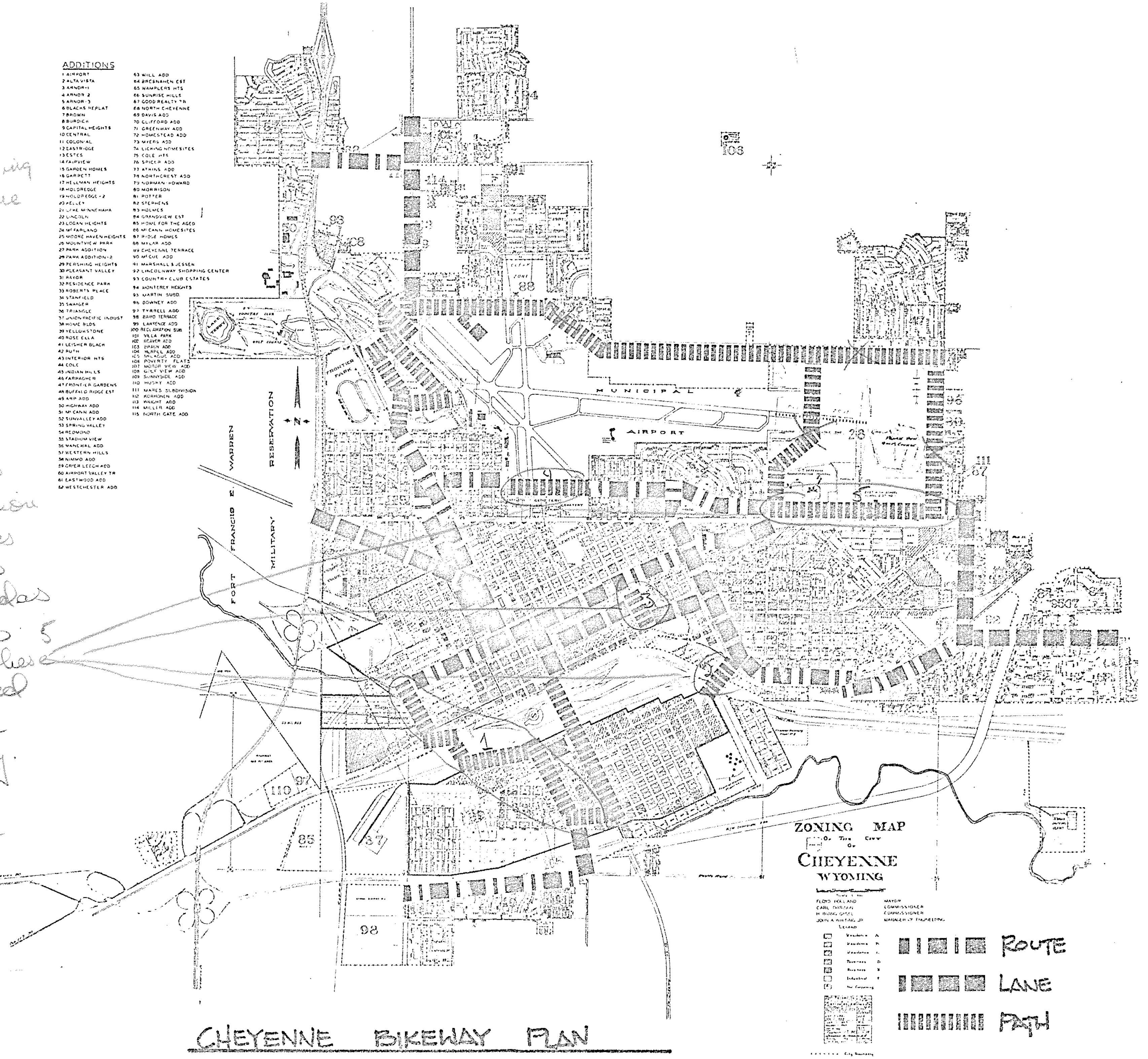
This copy needs to be cleaned up and put back in the report, Two-wheeling in Cheyenne before xeroxing. Grant.

TB

Do.

This is the adopted Bikeways Plan. The application calls for all routes and lanes & Lions park to be funded as shown. I've also suggested that these paths be implemented as routes now for system continuity. You will need to show them on the legend.

TB



Cost Estimates

The following cost estimates are for that portion of the proposed bikeway system that the City will need to fund. They do not include those portions of the system that will be constructed in connection with other projects such as the Crow Creek Development or federally funded road improvements. They are based on estimated cost as of November, 1975.

Bike Routes:

Installation Costs

$20.00* per sign
18 signs per mile (one every 2nd intersection on both sides.)
$360.00 per mile of street

Total Cost

$360.00 per mile

Maintenance

Signs - approximately 10% of all signs will need replacing each year.

*Source: Wyoming Highway Department

Bike Lanes:

Installation Cost

$9.02* per gallon of paint
X31.7 gallons per mile (double stripping 4 inch solid and dashed lines stenciled messages
$286.93 per mile, per lane

$20.00 per sign
9 signs per mile
$180.00 per mile

Total Cost

With signs $286.93
+180.00
$466.93

Without signs $286.93 (Note: with proper pavement, marking signs are optional.)

Maintenance

Paint - lanes will need to be painted once every 8 - 12 months.
Signs - approximately 10% of all signs will need replacing each year.

*Source: HNB Consultants

Bike Paths: Crushed Gravel

(Note: This type of path is also suitable for jogging paths.)

Installation Cost

5,280 feet per mile
X$6,00* per linear foot - eight foot (8') wide paths, 4 in deep gravel bed and asphalt curbing
$31,680 per mile

$20.00 per sign
X 9 per mile
$180.00 per mile

Total Cost

With signs $31,680 for crushed gravel path
180 for signs
$31,860 per mile

Without signs $31,680 per mile

Maintenance

Paths - very little repair work will be required.
Signs - approximately 10% of all signs will need replacing each year.

*Source: Teton Construction Company

Bike Paths: Concrete

Installation Cost

5,280 feet per mile - 4 inches thick, 3,000 lb. concrete
X$6.00* per linear foot - eight foot (8') wide paths
$31,680 per mile

$20.00 per sign
X 9 per mile
$180.00

Total Cost

With signs $31,680 for concrete
+180 for signs
$31,860 per mile

Without Signs $31,680 per mile

Maintenance

Concrete - virtually no repair if properly installed.
Signs - approximately 10% of all signs will need replacing each year.

*Source: Cook McCann Concrete, Inc.

Bike Paths: Asphalt

Installation Cost

5,280	feet per mile
X$1.90*	per linear foot - eight foot (8') wide paths with 4 inch wide base and 1½ inch paving
$10,032	per mile

$20.00	per mile
X 9	per mile
$180.00	per mile

Total Cost

With signs	$10,032	paving
	180	signs
	$10,212	per mile

Without signs $10,032 per mile

Maintenance

Asphalt - needs frequent repairs
Signs - approximately 10 % of all signs will need replacing each year.

*Source: Wyoming Highway Department

TABLE I - SPECIFIC FACILITY RECOMMENDATIONS

LOCATION	LIMITS	ESTIMATED LENGTH IN (MILES)	WIDTH or ROW	TYPE of FACILITY	REMARKS
Carey	8th Ave. to Pershing	.57	45'	route	
	20th St. to Pershing	.78	45-53'	lane	27 parking spaces will need to be removed
Central	Yellowstone to Kennedy	.19		path	Federal assist. is possible
	16th to 1st St.	.85		path	Federal assist. is possible. To be done concominently W/I-180
Concord	Oxford to Pershing	.19	40'	route	
Converse	Pershing to Del Range	1.06	80' ROW	path	Federal assist. is possible
Crow Creek Development Project	20th to Central (I-80)	1.70		path	Federal assist. is possible
Del Range/ Prairie Ave.	Yellowstone to Friendship Circle	3.13	80-100' ROW	path	Federal assist. is possible

LOCATION	LIMITS	ESTIMATED LENGTH IN (MILES)	WIDTH or ROW	TYPE of FACILITY	REMARKS
Fox Farm	Walterscheid to Stanfield	.40	45'	route	
Grove	Pershing to Del Range	1.00	0-60'	path	possible Federal assist.
Nationway frontage Rd.	Windmill to 12th	.76		route	
Norris Viaduct		.28		path	only needs signs
Oxford Dr.	Amherst to Newton/ Foxcroft	.55	40'	route	
Pershing	Converse to Grove	.98	80' ROW	path	
Pershing frontage Rd.	Grove to Ridge	.13		route	
Pioneer	Pershing to Carey	.13	45'	route	
	20th to Pershing	.80	31'	lane	
Randall	Pershing to 27th	.81	45'	lane	
Ridge	Pershing to 12th	.64	51'	lane	
So. of Airport	Evans to Morrie	.47		path	

LOCATION	LIMITS	ESTIMATED LENGTH IN (MILES)	WIDTH or ROW	TYPE of FACILITY	REMARKS
Stanfield	Fox Farm to Leisher	.04	40'	route	
Walterscheid Blvd.	3rd St. to Fox Farm	.28		lane	
Warren	16th St. to 20th St.	.34	45-52'	lane	This facility can be post-poned until I-180 is completed.
West Leisher	Stanfield to Arp	.63	41'	route	
Western Hills Blvd.	I-25 to Yellowstone	.53	52'	route	
Yellowstone	Montclair to Prairie Prairie to Central	1.27 .25		lane path	State funded
3rd Ave.	Carey to Evans	.45	31'	route	
2nd Ave.	Morris to Amherst	.28	40'	route	
8th St.	10th St. to Windmill	.78		route	
10th St.	Crow Creek Develop-ment to I-180	.20	44'	route	

LOCATION	LIMITS	ESTIMATED LENGTH IN (MILES)	WIDTH or ROW	TYPE of FACILITY	REMARKS
12th St.	Ridge to Cottonwood	.95	65'	lane	
17th St.	Warren to Logan	1.06	48'	lane	
20th St.	Carey to Russell	.64	45'	lane	
	Dey to Carey	.59	45-56'	route	
	Russell to 21st	.66	37-45'	route	
21st St.	20th to 19th	.13	37'	route	
27th St.	Randall to Carey	.08	45'	lane	
19th St.	21st to Pershing	.19	26'	lane	

Not only are more people riding bicycles, but they are using them for a greater variety of trips. Increasingly, bicycles are being used for utility trips as well as recreation or pleasure trips. This increased usage of bicycles as a mode of transportation has many ramifications. On the positive side, they include reduction in auto traffic, parking congestion, energy consumption, and air pollution. The negative ramifications include more accidents, more vehicular - bicycle conflicts, and more complex safety problems. Unfortunately, the problems associated with bicycle riding are a deterent to increased usage and thus reduce the significance of the positive effects. Mitigation of the safety problems will reverse this situation.

A number of programs aimed at increasing people's awareness of bicycle safety problems have been conducted over the past few years with the help of the Cheyenne Police Department. Undoubtedly, these programs plus the fact that more motorists are also bicyclists has helped keep the number of bicycle accidents reasonably low.

Bicycle-Vehicular Accidents Reported to Cheyenne Police Dept.

	1972	1973	1974	1975
January - February	0	0	0	0
March - April	1	3	1	0
May	2	2	1	2
June	4	1	6	2(1 was fatal)
July	4	3	5	0
August	0	4	4	3
September	0	2	1	1
October	2	0	0	2
November	1	0	1	0
December	1	0	2	1
Total	15	15	21	

Note: The majority of these accidents involve juvenile cyclists.
12/10/75