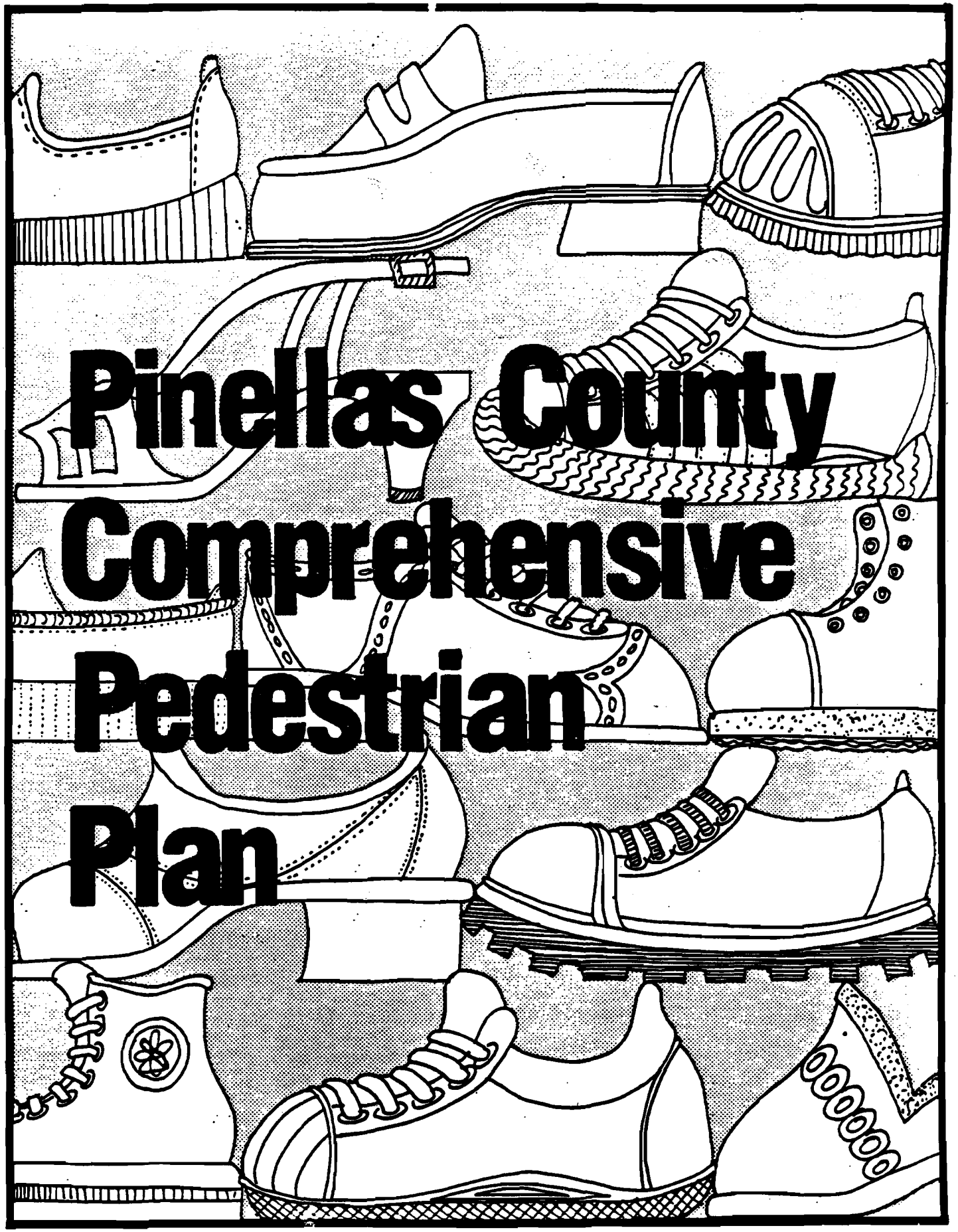

Pinellas County Comprehensive Pedestrian Plan

PREPARED BY THE PINELLAS COUNTY METROPOLITAN PLANNING ORGANIZATION

PINELLAS COUNTY

COMPREHENSIVE PEDESTRIAN TRANSPORTATION PLAN

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PINELLAS COUNTY

COMPREHENSIVE PEDESTRIAN TRANSPORTATION PLAN

PINELLAS COUNTY

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April 1991

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GLOSSARY

AARP (American Association for Retired Persons)

AASHTO (American Association of State Highway & Transportation Officials): is a 76 member organization founded in 1914 composed of state highway and transportation officials from all 50 states including Puerto Rico, District of Columbia, and the United States Department of Transportation. The organization develops and improves methods of administration, design, construction, operation and maintenance of a nationwide integrated transporation system.

BAC (Bicycle Advisory Committee): Established in November 1983 it is a fifteen (15) member appointed committee providing input and direction on bicycle related issues to the Metropolitan Planning Organization.

CAC (Citizens Advisory Committee): A twenty six (26) member committee established to assist the Metropolitan Planning Organization by providing input to the transportation planning process that reflects citizens views and attitudes.

DOT Department of Transportation: Granted legislative authority to develop and maintain transportation facilities and services.

FHWA (Federal Highway Administration)

MPO (Metropolitan Planning Organization): Created by law to provide a forum of cooperative decision making concerning countywide transportation issues.

MUTCD (Manual on Uniform Traffic Control Devices): Provides for unification of standards applicable to the different classes of road and street systems.

NHSTA (National Highway Safety Traffic Administration)

PTAC (Pedestrian Transportation Advisory Committee): Established by the MPO in July 1990 under a joint participation agreement with FDOT for the purpose of assisting the MPO in the development of a countywide pedestrian plan.

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PINELLAS COUNTY COMPREHENSIVE PEDESTRIAN TRANSPORTATION PLAN

EXECUTIVE SUMMARY

Until recently, walking has not been viewed as an activity to be enjoyed; walking was simply something to be endured and, with luck, survived. The attitude is starting to change. While walking has always been a widely-used form of transportation, recently it has risen to the top of all outdoor recreational activities as reported by the National Park Service.

Walking is the most basic form of human transportation. It requires no expensive machinery or equipment. Very little training is required to master the basic skills. Walking is available as a mode of transportation to people of all ages. And practically everyone relies on walking to get where they want to go every single day of their lives. For some, it is the only form of transportation they can afford. Others choose walking as a mode of transportation when a particular trip would be more convenient on foot. Walkers do not have to wait for a bus or hunt for a parking space. If a trip is short, and if it involves several stops in close proximity to each other, walking becomes the most logical mode of transportation. Pedestrian transportation as a separate mode of transportation suggests a change of focus. Instead of allowing pedestrian improvements to be a by-product of efforts to deal with traffic in a safe manner, pedestrian planning requires concentration on the needs of pedestrians first and foremost. This is not to say that the needs of the motorists are ignored, but rather that the needs of pedestrians be given equal consideration as a treatment of a separate mode of transportation.

Unfortunately, Florida's "population boom" has resulted in a pedestrian fatality rate nearly twice the national norm. Countywide, Pinellas' pedestrian fatalities in 1988 accounted for 20.2% of all traffic fatalities. In 1989, there were 450 pedestrian injuries and 36 pedestrian fatalities for the period of January through December.

Because of these statistics and the concern of the MPO, a joint participation agreement was executed on March 29, 1990 with the Florida Department of Transportation for a Bicycle/Pedestrian Coordinator planning grant. The grant provided $22,000 the first year of a possible two-year grant for the expressed purpose of funding bicycle and pedestrian planning activities, including the staffing of a full-time position. Further, the contract for financial assistance imposed certain obligations upon the MPO, including the provision of 50/50 matching funds and the intent that the coordinator position be continued with local funding upon the expiration of the grant.

Specifically, the grant outlined the following non-motorized planning projects:

1) The development and adoption of a Comprehensive Pedestrian Plan.

2) An analysis of pedestrian accidents occurring in Pinellas County.

3) Creation of an Advisory Committee for pedestrian issues. This committee must include technical representatives with site plan review responsibilities for the inclusion of pedestrian amenities within approved site plans.

4) Continued implementation of the Comprehensive Bicycle Plan.

Pinellas County ranks sixth among the 11 Florida counties with the most severe pedestrian accident problems. Responding to the concern of citizens and public officials, the Metropolitan Planning Organization (MPO) established a Pedestrian Transportation Advisory Committee (PTAC) in July, 1990, to provide input and direction on pedestrian-related issues. The MPO appointed members consisting of technical representatives from state, county, municipal governments, the AAA and

National Safety Council. In addition, three citizens were asked to serve on this Committee. Pinellas County's PTAC was established similar to committees in MPO areas throughout Florida.

A major responsibility of the Pedestrian Transportation Advisory Committee is to assist the Metropolitan Planning Organization in the development of a countywide pedestrian plan. In accordance with the Florida Pedestrian System Plan developed for the Florida Department of Transportation under a grant from the Governor's Energy Office, the Pinellas County Pedestrian Transportation Plan promotes a comprehensive approach. We have based the Plan on what we call the "Five E's."

Engineering: Providing support facilities necessary to connect with other modes of transportation that permits pedestrian travel to be efficient and free of barriers.

Education: Training pedestrians and motorists to safely co-exist and training professionals in the specific pedestrian-related skills and knowledge required to perform their duties effectively and efficiently.

Enforcement: Improving pedestrian behavior and increase enforcement level for both pedestrian violations and motorists who violate pedestrian rights; increasing awareness among police of the importance of pedestrian enforcement; and developing community support for traffic law enforcement for pedestrians.

Encouragement: Providing opportunities, information and incentives to the public for the health benefits of walking and promoting walking as an alternative form of transportation.

Environment: Promoting and creating an urban and suburban environment that provides for safe pedestrian transportation.

Plan development began with a detailed analysis of 486 pedestrian

accident reports filed by local law enforcement agencies through the Department of Highway Safety and Motor Vehicles in 1989. Through this analysis, basic information was obtained about accident locations, the frequency with which various types of accidents occur and the age groups and sex of the pedestrians involved in these accidents. As at the state level, the largest number of pedestrian accident victims in Pinellas County are males between 5 and 9 years old; the second highest group is males between 25 and 34 years old. Although adults are generally involved in fewer pedestrian accidents than other age groups, they are much more likely to die (especially in the category of 75+) as a result of the accident than victims in other age groups. However, nearly equal proportions of teenagers and young adults are also accident victims, and the proportion of pedestrians over 60 years of age is much higher in Pinellas County and Florida than nationwide.

Local accident data indicate that the vast majority of pedestrian accidents are due to faulty behavior on the part of the pedestrian, and to a lesser but significant extent, the motorist. Dart-outs, not crossing at an intersection, or playing in the roadway are pedestrian behaviors that lead to many accidents. In 1989 in Pinellas County, most fatal accidents resulted from pedestrians not crossing at intersections. In 1988, alcohol/drug use was a contributing factor in 44.2% of all fatal pedestrian accidents.

The local accident situation is unlikely to improve until pedestrians of all ages learn and practice traffic survival skills. The MPO joins with the Governor's Energy Office in recommending and establishing guidelines: 1) To dramatically reduce the number of pedestrian accidents, injuries and fatalities in Pinellas County; 2) To make all public facilities in Pinellas County accessible by foot; 3) To create an urban and suburban environment that is conducive to walking; and, 4) To reduce energy consumption by increasing the number of short trips made on foot. Through PTAC activities, the MPO continues to implement the legislative requirement to include pedestrian considerations in all urbanized areas in the traffic circulation elements of the transportation plans.

Various trends are occurring which have a direct influence on the need

for, and the problems associated with, pedestrian transportation. The most significant of these are the dramatic growth in population and tourism, the growth of the senior population, and the rising popularity of walking. Increasingly, walking is replacing jogging as the exercise of choice for thousands. It is likely, as was the case with bicycling, that recreational walking will create a group of potential walking commuters, providing that safe places to walk are provided and commutes are within walkable distances. Additionally, the rapid expansion of employment centers and shopping malls places a significant burden on already crowded arterials. Studies have indicated that an office complex produces 70% more peak-hour trips than a regional mall and 1500% more peak-hour trips than a residential subdivision. We must make better use of alternative non-traditional modes of transportation because we are not able to afford the massive infrastructure improvements necessary to build our way out of such a problem.

Pinellas County is characterized by dependence on the automobile. As the area has grown, this dependence has resulted in increased traffic congestion, parking problems, and air pollution. Unlike automobile transportation, however, pedestrian transportation is not at the forefront of the public's concerns about the future for Pinellas County. The purpose of the Pinellas County Comprehensive Pedestrian Transportation Plan is to encourage people to walk and shop in areas near their work places and/or residences, thereby reducing multiple automobile trips, to reinforce and stimulate high quality future development compatible with pedestrian uses, and to encourage a safe environment for walking.

In accordance with the 1984 Bicycle Law, all jurisdictions must now consider bicyclists and pedestrians in the planning and development of local, regional, and state transportation plans and programs. Several recent state, county and municipal road improvement and construction projects have already been built with wide outside lanes, paved shoulders and/or sidewalks, to accommodate bicyclists and pedestrians. Unfortunately, the general public generally does not think about pedestrian transportation when they commute to work and walk the five blocks from the parking garage to the office. They don't think about

pedestrian transportation when they attempt to walk to the neighborhood post office. They do think about the number of cars on the road and the difficulty they have crossing the street. They also think about the noise and pollution and how unpleasant it can be to walk so close to fast moving traffic. The focus of attention is almost always on the car.Pedestrian transportation planning suggests a change in focus – a concentration on the needs of pedestrians first. The Comprehensive Pedestrian Transportation Plan does not demand that the needs of motorists be ignored. Rather it requires that the needs of pedestrians be given equal consideration. It requires identification of what modifications are needed to improve the safety and convenience of pedestrians within the existing infrastructure.

In summary, through the integration with state programs and policies, the MPO has made a firm commitment to improving pedestrian conditions in Pinellas County. The Pinellas County Comprehensive Pedestrian Transportation Plan outlines a comprehensive program designed to address the pedestrian issues facing Pinellas County, and to meet the goals established by the MPO through their Pedestrian Transportation Advisory Committee. These goals are as follows:

1. Dramatically reduce the number of pedestrian accidents, injuries and fatalities.

2. Encourage walking as a means of everyday transportation.

3. Create a safe environment for walking.

4. Reduce energy consumption by increasing pedestrian endeavors.

CHAPTER I

INTRODUCTION

PEDESTRIAN PLANNING/PROBLEMS AND ISSUES

Over the past decade, the United States has experienced an upsurge in the popularity of walking. Record number of adults are discovering the health benefits of walking. Additionally, the dramatic growth in population and tourism, and the growth of the senior population contributes to the rising number of pedestrians being killed and injured on Pinellas County roads. According to the Department of Highway Safety and Motor Vehicles, there were 450 pedestrian injuries and 36 pedestrian fatalities in 1989, for a total of 486 pedestrian related accidents. The 1989 Florida Pedestrian System Plan identifies Florida as the second highest state throughout the country for pedestrian fatalities. Among the eleven counties with the most severe accident problems, Pinellas County ranked 6th statewide in 1989 for pedestrian fatalities.

If one single mission statement could be articulated for the comprehensive pedestrian program, it is to make Pinellas County more walkable. The essential components of walkability include safety, security, convenience, continuity, system coherence, comfort and attractiveness. Pedestrian welfare will be promoted by pedestrian transportation programs which give pedestrians a priority level equal to that of auto travel and transit, particularly in CBDs and employment centers.

An analysis of current walking conditions in the State provides a list of symptoms that are indicators of serious pedestrian transportation problems. The symptoms include:

- Less than 25% of the children walk or ride bikes to school because of perceived dangers/hazards.

- Traffic signal timing is set to facilitate motorized traffic flow. Frequently, the WALK phase does not allow sufficient time for the average pedestrian to cross. Senior adults, who walk at slower speeds than the average pedestrian, are particularly at risk of getting trapped in the intersection.

- Enforcement of pedestrian traffic violations is practically non-existent.

- There is minimal attention offered to pedestrian safety education in schools, with even less information provided to adults.

- Florida has the second highest pedestrian fatality rate in the nation (5.12 per 100,000 population), roughly twice the national average. The state also ranks number two in the country for the number of pedestrians killed. Pinellas County ranks number six out of eleven counties with the greatest number of pedestrians killed.

- Fatalities among the older residents of the State are particularly high, accounting for 23 percent of all pedestrian fatalities.

- The number of fatalities and injuries has increased 18% since 1980.

Background on State and Local Programs

The legal foundation for including pedestrian transportation in the urban planning process has been established by three provisions of law (or federal policy):

- In 1984, the Florida legislature adopted legislation requiring that pedestrian transportation be included in the traffic circulation elements of the comprehensive plans developed by urbanized areas with populations of 50,000 or more.

- In 1984, the Florida legislature adopted legislation encouraging the establishment of pedestrian ways in conjunction with the construction, reconstruction, or other change of any state transportation facility, particularly within one mile of an urbanized area.

- Federal DOT policy also requires that pedestrian ways be given full consideration in the planning of transportation facilities (including state, regional, and local transportation plans and programs).

The Florida Department of Transportation, through a grant from the Governor's Energy Office, funded the establishment of 14 community bicycle coordinators throughout the state. These individuals were encouraged to consider pedestrian issues in addition to their defined responsibilities for bicycle transportation.

The Florida Pedestrian Program presents a comprehensive approach to statewide pedestrian planning. Program objectives are not only limited to the design and engineering of pedestrian facilities, but also include the development of safety and educational approaches. Strategies to encourage walking as a basic form of transportation, exercise and recreation are emphasized in Florida's Pedestrian Plan.

The Pedestrian System Plan will establish a five-year agenda for statewide improvement of pedestrian transportation and establish long-range goals for making Florida a great place to walk.

Through the advocacy of the Citizens Advisory Committee (CAC) regarding pedestrian-related issues, the Metropolitan Planning

Organization (MPO) responded to concerned citizens and confirmed the formation of the Pedestrian Transportation Advisory Committee (PTAC) in July, 1990. The appointed members of PTAC consist of technical representatives from various government agencies, law enforcement personnel, safety councils, and three citizens at-large. The responsibilities of the PTAC include assisting in the development of a comprehensive pedestrian plan for Pinellas County, as well as promoting (1) walking as a mode of transportation; (2) reduction of pedestrian injuries, accidents and fatalities in Pinellas County; (3) the enforcement of traffic laws pertaining to pedestrian behavior; and, (4) creation of an environment conducive to safe walking.

Scope of Document

As reflected in their by-laws, the PTAC was established by the MPO with a strong orientation toward pedestrian planning and review of road projects for the inclusion of safe pedestrian facilities. However, through PTAC membership input, emphasis within the pedestrian planning program extends beyond engineering and incorporates areas of education, enforcement, encouragement and environment. The comprehensive approach to pedestrian planning set forth in this document is based upon the "Five E's", which are defined as follows:

Engineering: Providing and promoting a safe walking environment for pedestrians with support facilities necessary to connect with other modes of transportation that permits pedestrian travel to be efficient and free of barriers.

Education: Training pedestrians and motorists to safely co-exist and training professionals in the specific pedestrian-related skills and knowledge required to perform their duties effectively and efficiently.

Enforcement: Improving pedestrian behavior and increasing enforcement level for both pedestrian violations and

motorists who violate pedestrian rights; increasing awareness among police of the importance of pedestrian enforcement and developing community support for traffic law enforcement for pedestrians.

Encouragement: Providing opportunities, information and incentives to the public for the health benefits of walking and promoting walking as an alternative form of transportation.

Environment: Promoting and creating an urban and suburban environment that provides for safe pedestrian transportation.

The first chapter of this plan contains an analysis of local pedestrian accident data. Each subsequent chapter addresses one of the "Five E's", and contains the following information:

- Background on each topic;
- Description of the current situation in Pinellas County;
- Review of state and local accomplishments to-date and what remains to be done;
- Discussion of the roles and responsibilities of all involved parties; and
- Recommendations for continued MPO involvement through PTAC and Pinellas County Planning staff.

MPO GOALS

The purpose of this document is to outline a comprehensive program to address the pedestrian issues facing Pinellas County, and to meet the goals established by the MPO through their Pedestrian Transportation Advisory Committee in July, 1990.

These goals are as follows:

- Safely incorporate pedestrians into the countywide transportation system;

- Encourage walking as healthful exercise and recreation, and as a means of everyday transportation; and

- Promote intergovernmental coordination in order to facilitate the pedestrian planning process.

The MPO has adopted the following additional goals and objectives as developed for the Long Range Planning process that specifically pertain to pedestrian transportation as well.

Goal 1: The MPO Plan shall be a multimodal transportation system which provides for safe, efficient and effective movement of people, goods and services (without modal bias). *

As an objective of this goal, safe incorporation of pedestrian transportation facilities into the countywide transportation system should be provided which allows persons to travel to and from their destinations directly and with minimum delay.

Goal 3: The MPO Plan shall provide for alternative modes of transportation to serve bicycle and pedestrian needs (both during daytime and nighttime use). *

*CAC proposal (in brackets) for addition.

Under this goal, the Plan promotes the following objectives:

a. The Plan shall promote the bicycle and pedestrian modes as viable means of transportation through the linking of major activity centers and residential areas with adequate and modally integrated facilities.

b. The Plan shall encourage integrated development patterns which promote pedestrian/bicycle travel within and between developments, rather than forcing use of the private automobile.

c. Optimize the safety and efficiency of modal interaction particularly for bicycle and pedestrian users by providing support facilities which encourage this interaction.

d. Ensure that pedestrian and bicycle needs are addressed during construction of new roads and improvement of existing facilities by providing facilities appropriate to the volume of pedestrian and bicycle traffic anticipated.

e. Ensure that all pedestrian facilities are designed so they can be used by the disabled or elderly.

CHAPTER II

PEDESTRIAN ENVIRONMENT

LAND USE CONSIDERATIONS

A. GENERATORS AND ATTRACTORS

Intensely urbanized areas, where high concentrations of people and vehicular traffic traverse, are generally recognized as locations requiring sophisticated, well-defined pedestrian walkway systems. Although less sophisticated pedestrian systems are required in suburban areas, the basic sidewalk is equally important. The dispersion of land uses usually requires longer foot trips to destinations within the neighborhood or to activity centers where the pedestrian can observe or partake in personal or group pursuits.

The residential neighborhood can be readily identified as primary generators of pedestrian traffic. People leave their homes to go to work, school, play, and shopping or to conduct other business matters. These points of destination are known as attractors. Secondary generators are created when people leave their principal destinations and traverse to sub-destinations; i.e., school, parks, one shopping center to another, etc. This interactivity necessitates a sidewalk network which interconnects the pedestrian generators with the attractors and among the attractors.

Similar to vehicle trip generation, the volume of pedestrian activity is related to the type of land use. However, with few exceptions, the pedestrian traffic impacts of developments are seldom considered to impact an area to the same degree as vehicular generation. (See Table 1)

B. ZONING AND LAND USE

Zoning and land use designations strictly separate modes of transportation uses. Non-residential uses do not intermingle with residential, so many services are not readily available conveniently. As a result, people drive everywhere and are extremely dependent on the automobile. As automation and development progressed after World War II, services sprung up along transportation corridors and, as a result, centered around automobile access.

Table 1

COMPARATIVE PEDESTRIAN ACTIVITY AND LAND USE*

(Hourly in and out trips per 1,000 square feet)

Building Type	Hourly Trips
Department Store-	3-6
Specialty Retail-	
Men's Clothing	3
Women's Clothing	33
Shoe Stores	25-35
Book Stores	4-15
Boutique	25
Gift Store	14
Office Supplies	15-28
Shopping Centers-	
Neighborhood	12
Community	7
Regional	5
Supermarkets	24-31
Restaurants-	
Fast-food, Carryout	128
Fast-food, Service	48
Full Service	12
Office Building-	
General(Average of 8 large offices)	1-3
Municipal	3/4
Branch Banks	25-30
Stock Brokers	4
Medical Office	15
Post Office	15
Residential-	
Hotels/Motels	12-14
Apartments	7-8

*Source: FHWA-RD-79-46

The idea of mixed use evolved; however, multiple uses in large projects generally end up with the separation of uses in communities and the desire to keep single uses prevalent. The closest example of successful mixed use areas is recreational areas. Pinellas County can best be described as a low density residential community. The water, sewer drainage capacities, roads and limited resources do not promote walking.

Historically, the proximity of activities to a downtown has been important. In the future, this factor may not be as important since so many activities are locating in suburban areas. What is more important relative to pedestrian transportation with land use patterns is the concentration of activities within activity centers in suburban areas. Pedestrian transportation is most effective where multimodal transit activities are closely mixed together and people can walk between activities.

As an example, when offices mixed with restaurants and retail stores or small shops are located within residential areas, people can take care of several activities by walking and are less apt to make multiple vehicle trips. Mixed land uses can reduce the need for and the number of auto trips, encourage walking between land uses, and encourage public transportation usage.

"Make all downtowns as attractive as Paris" is one way of stating this objective. Parisian boulevards are elegant streetscapes and not lined with parking lots. Solving parking needs while combating the parking lot plague is an important agenda item for Pinellas County.

C. SCHOOL SURVEY RESULTS

On October 18, 1990, both elementary and middle schools throughout Pinellas County were polled. Seventy-five elementary schools were polled and 73 responded (See Table 2). Of the 40,672 students polled, 12.05% walked to school, 41.46% were driven, and 35.98% arrived by school bus. Fewer children had biked to school on that particular day (8.49%) than had walked. (See Figure A). Of the twenty-one middle schools polled on

TABLE 2

TRANSPORTATION SURVEY
PINELLAS COUNTY ELEMENTARY SCHOOLS

SCHOOLS	NO. OF STUDENTS	(1) WALKED	(2) BIKED	(3) HELMET	(4) CAR	(5) ST/BLTS	(6) SCH/BUS	(7) CTY/BUS
ANONA	373	25	31	0	145	128	153	0
AZALEA	642	47	39	1	327	256	224	0
BARDMOOR	729	148	136	4	217	187	194	0
BAUDER	884	39	275	24	460	359	110	0
BAY POINT	510	101	34	3	279	210	91	0
BAY VISTA	584	114	66	4	244	202	133	0
BEAR CREEK	403	78	30	0	172	130	127	0
BELCHER	585	25	105	1	240	206	210	0
BELLEAIR	336	86	20	0	214	178	4	0
BLANTON	808	127	77	0	299	266	181	0
CAMPBELL PK	313	36	2	0	66	51	209	0
CHILD'S PK.FUND	302	8	0	0	294	0	0	0
CLEARWATER	394	74	41	1	113	72	166	0
CURLEW CREEK	690	57	72	4	337	304	226	0
CURTIS FUNDA.	337	21	9	0	304	249	5	0
CYPRESS WOODS	913	0	0	0	179	161	702	0
DUNEDIN	681	89	53	4	262	203	252	1
EISENHOWER	826	186	64	2	297	256	241	1
FAIRMOUNT	328	94	13	0	87	59	136	0
LEILA DAVIS	659	97	102	4	340	279	125	0
FUGITT	596	20	14	0	186	153	370	0
GARRISON-JONES	572	0	1	0	84	78	487	0
GULF BEACHES	332	24	12	0	100	82	196	0
HIGH POINT	494	123	70	0	204	180	94	0

SCHOOLS	NO. OF STUDENTS	(1) WALKED	(2) BIKED	(3) HELMET	(4) CAR	(5) ST/BLTS	(6) SCH/BUS	(7) CTY/BUS
CLEARWATER	394	74	41	1	113	72	166	0
CURLEW CREEK	690	57	72	4	337	304	226	0
CURTIS FUNDAMENTAL	337	21	9	0	304	249	5	0
CYPRESS WOODS	913	0	0	0	179	161	702	0
DUNEDIN	681	89	53	4	262	203	252	1
EISENHOWER	826	186	64	2	297	256	241	1
FAIRMOUNT	328	94	13	0	87	59	136	0
LEILA DAVIS	659	97	102	4	340	279	125	0
FUGITT	596	20	14	0	186	153	370	0
GARRISON-JONES	572	0	1	0	84	78	487	0
GULF BEACHES	332	24	12	0	100	82	196	0
HIGH POINT	494	123	70	0	204	180	94	0
KINGS HIGHWAY	471	46	63	0	307	222	55	0
LAKE ST. GEORGE	948	133	81	3	459	349	249	0
LAKEWOOD	547	93	23	1	178	128	279	0
LARGO CENTRAL	437	50	21	0	271	211	83	0
CROSS BAYOU	849	58	69	1	318	201	362	0
LEALMAN	530	101	40	1	158	110	220	0
LYNCH	913	123	54	0	215	206	417	0
MADEIRA BEACH	400	17	3	0	171	115	206	1
MAXIMO	696	56	20	0	235	198	375	1
MELROSE	620	53	1	0	96	67	468	0
MILDRED HELMS	616	73	72	7	332	247	139	0
MT. VERNON	487	91	38	0	260	213	93	0
NORTH SHORE	719	45	35	1	404	285	264	3

SCHOOLS	NO. OF STUDENTS	(1) WALKED	(2) BIKED	(3) HELMET	(4) CAR	(5) ST/BLTS	(6) SCH/BUS	(7) CTY/BUS
NORTH WARD	251	30	3	0	70	42	148	0
NORTHWEST	350	48	35	1	181	129	86	0
NORWOOD	356	71	25	0	134	78	129	0
OAKHURST	650	90	115	1	375	302	70	0
OLDSMAR	674	57	44	8	212	159	326	0
ORANGE GROVE	290	30	29	1	124	112	108	0
OZONA	489	24	18	0	217	169	230	0
PALM HARBOR	605	106	119	2	334	264	46	0
PASADENA	375	34	25	1	174	128	140	0
PERKINS	432	89	0	0	34	22	309	0
PINELLAS CENTRAL	836	62	99	2	222	158	454	0
PINELLAS PARK	697	101	76	0	302	236	182	0
PLUMB PARK	641	81	154	2	346	255	61	0
PONCE DE LEON	469	102	44	0	271	162	25	5
RIDGECREST	348	58	26	0	91	71	173	0
RIO VISTA	489	77	46	1	253	180	102	0
ROBINSON CHALLENGE	138	7	7	0	24	16	96	0
SAFETY HARBOR	617	140	58	2	305	267	113	0
SAN JOSE	476	67	75	0	253	195	66	0
SANDY LANE	664	50	25	0	166	128	282	0
SEMINOLE	628	18	37	3	324	246	250	0
74TH STREET	675	95	38	0	272	226	270	0
SHORE ACRES	562	27	72	3	312	230	192	0
SKYCREST	543	99	58	4	310	241	72	2
SKYVIEW	615	94	80	0	298	223	147	0

SCHOOLS	NO. OF STUDENTS	(1) WALKED	(2) BIKED	(3) HELMET	(4) CAR	(5) ST/BLTS	(6) SCH/BUS	(7) CTY/BUS
SOUTH WARD	240	19	10	0	97	79	107	1
SOUTHERN OAK	767	1	1	0	96	74	669	0
STARKEY	806	130	94	2	293	256	277	0
ST. PETERSBURG CHALLENGE	167	11	2	0	34	20	104	1
SUNSET HILLS	424	55	60	1	293	219	14	0
SUTHERLAND	813	29	3	0	249	208	526	0
TARPON SPRINGS	628	116	6	1	248	179	260	0
TARPON SPRGS FUND.	244	34	0	0	210	163	0	0
WALSINGHAM	837	72	69	1	198	163	334	0
WESTGATE	639	81	68	1	287	230	204	0
WOODLAWN	713	138	45	5	401	299	113	9
ELEM. SCH. TOTALS	40672	4901	3452	108	16,864	12,930	14,632	25
PERCENTAGE		12.05%	8.49%	0.27%	41.46%	31.79%	35.98%	0.06%

NOTE: GULFPORT AND TYRONE ELEMENTARY SCHOOLS DID NOT RESPOND.

SOURCE: THE SCHOOL BOARD OF PINELLAS COUNTY

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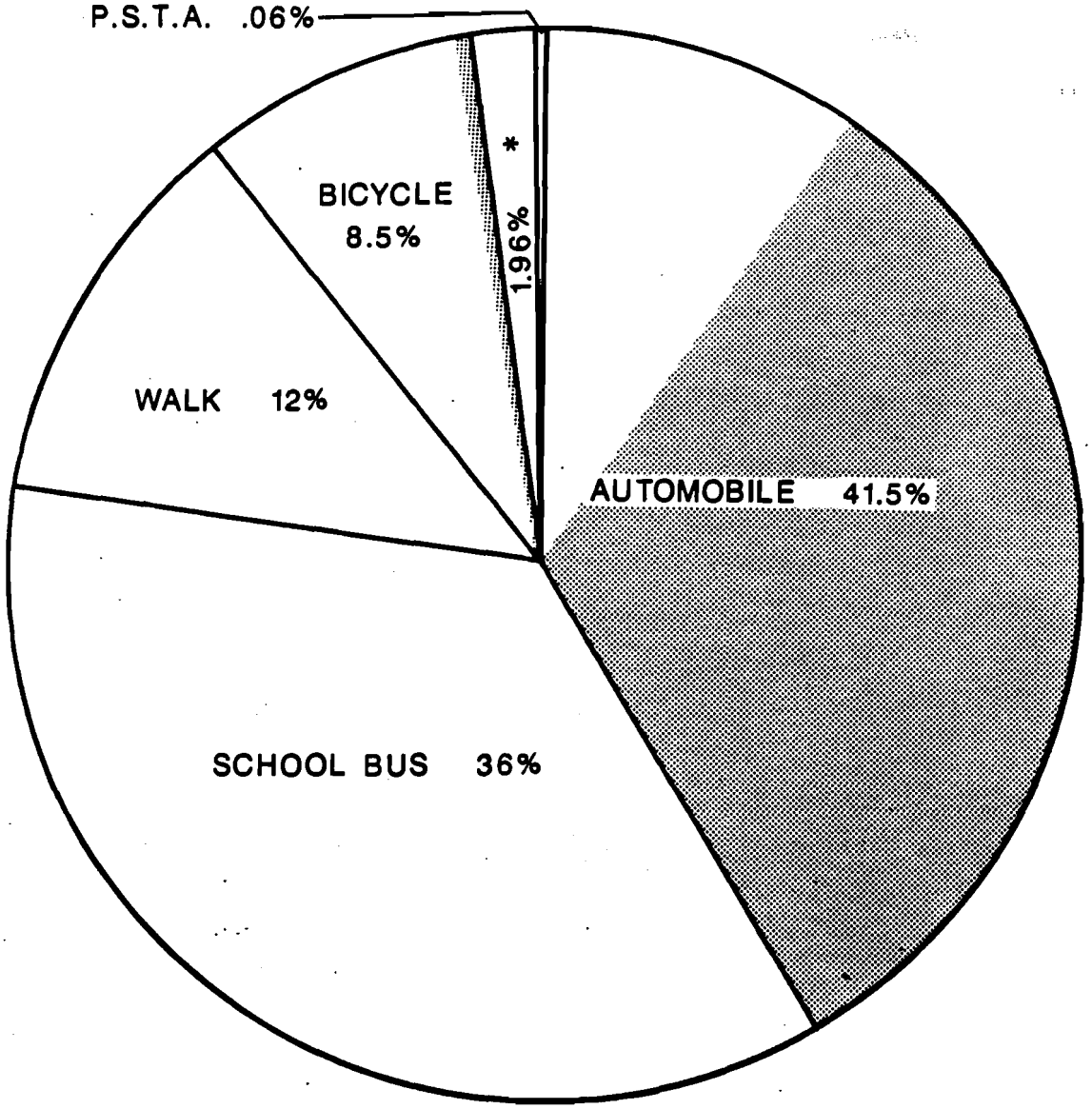
PINELLAS COUNTY TRANSPORTATION SURVEY ELEMENTARY SCHOOLS



* NO RESPONSE FROM EITHER GULFPORT OR TYRONE ELEMENTARY SCHOOLS.

▒ THOSE WHO USED SAFETY DEVICES WHEN USING AUTOMOBILES OR BICYCLES (SEAT BELTS/HELMETS).

P.S.T.A.: PINELLAS SUNCOAST TRANSIT AUTHORITY.

Figure A

October 18, 1990, (See Table 3) twenty schools responded. Of the 16,799 students in this particular age group, 51.02% arrived by school buses and 25.29% arrived by car. The number of students who walked and biked were nearly equal - 10.19% and 10.74% respectively. (See Figure B).

Perceived traffic hazards, crossing of busy arterials, and safety are major causes why parents do not permit their children to walk or bike to school. The concern over drugs, molestation and other crime elements weigh heavily in a parent's decision to permit their children to provide their own transportation to school.

The present mandated court order requiring a school bus for those children residing only beyond the two-mile radius of the school places undue expectations for children K-3 residing within that radius. Parent patrols along the school route and parent/child "walk-to-school" days to assure the younger children at the beginning of the school year of the safe routes would help reduce anxiety for both parents and children.

D. WHY PEOPLE WON'T WALK

A Pedestrian Survey within Pinellas County was conducted in the Fall of 1990. Approximately 3500 surveys were distributed to employees of Pinellas County, of which 818, or 23%, were completed and returned.

Additionally, 1100 surveys were mailed to senior citizens 60 years of age and older. Seventy-six, or 6.9% were returned. This populous, combined with the students polled, represented an equitable cross-section of the Pinellas County area. (See Table 4).

While exercise and fresh air were among the more popular responses to the question of what was liked most about walking, more diversed responses were cited regarding what was liked least about walking. The summer heat and humidity was a primary response, and competition among traffic, animals, and concern for safety, were also frequent responses.

TABLE 3

PINELLAS COUNTY MIDDLE SCHOOLS

SCHOOLS	NO.OF STUDENTS	(1) WALKED	(2) BIKED	(3) HELMET	(4) CAR	(5) ST/BLT	(6) SCH/BUS	(7) CTY/BUS
AZALEA	823	76	60	0	218	107	355	7
BAY POINT	635	147	69	1	247	107	385	1
CLEARWATER DISCOV.	345	35	13	0	52	29	191	1
DUNEDIN HIGHLAND	1,040	163	172	0	259	125	448	1
FITZGERALD	992	108	103	5	184	96	591	14
KENNEDY	797	86	61	0	233	104	401	0
LARGO	909	115	68	0	209	106	517	0
LEALMAN DISCOVERY	314	8	12	0	53	28	234	0
MADEIRA BEACH	844	20	70	2	158	87	501	1
MEADOWLAWN	682	186	96	5	146	70	217	27
OAK GROVE	851	48	124	1	289	188	322	0
OSCEOLA	752	53	159	0	210	85	60	1
PALM HARBOR	1,188	105	207	0	366	180	477	0
PINELLAS PARK	862	147	79	2	160	51	513	3
SAFETY HARBOR	1,346	65	68	0	257	148	968	0
SEMINOLE	1,120	110	294	0	443	270	373	0
16TH STREET	894	69	35	1	104	47	708	2
SOUTHSIDE FUND.	391	27	2	0	338	179	23	16
TARPON SPRINGS	1,259	89	13	0	162	76	899	0
TYRONE	755	55	99	1	161	82	388	3
MIDDLE SCH.TOTALS	16,799	1,712	1,804	18	4,249	2,165	8,571	77
PERCENTAGE		10.19%	10.74%	0.11%	25.29%	12.89%	51.02%	0.46%

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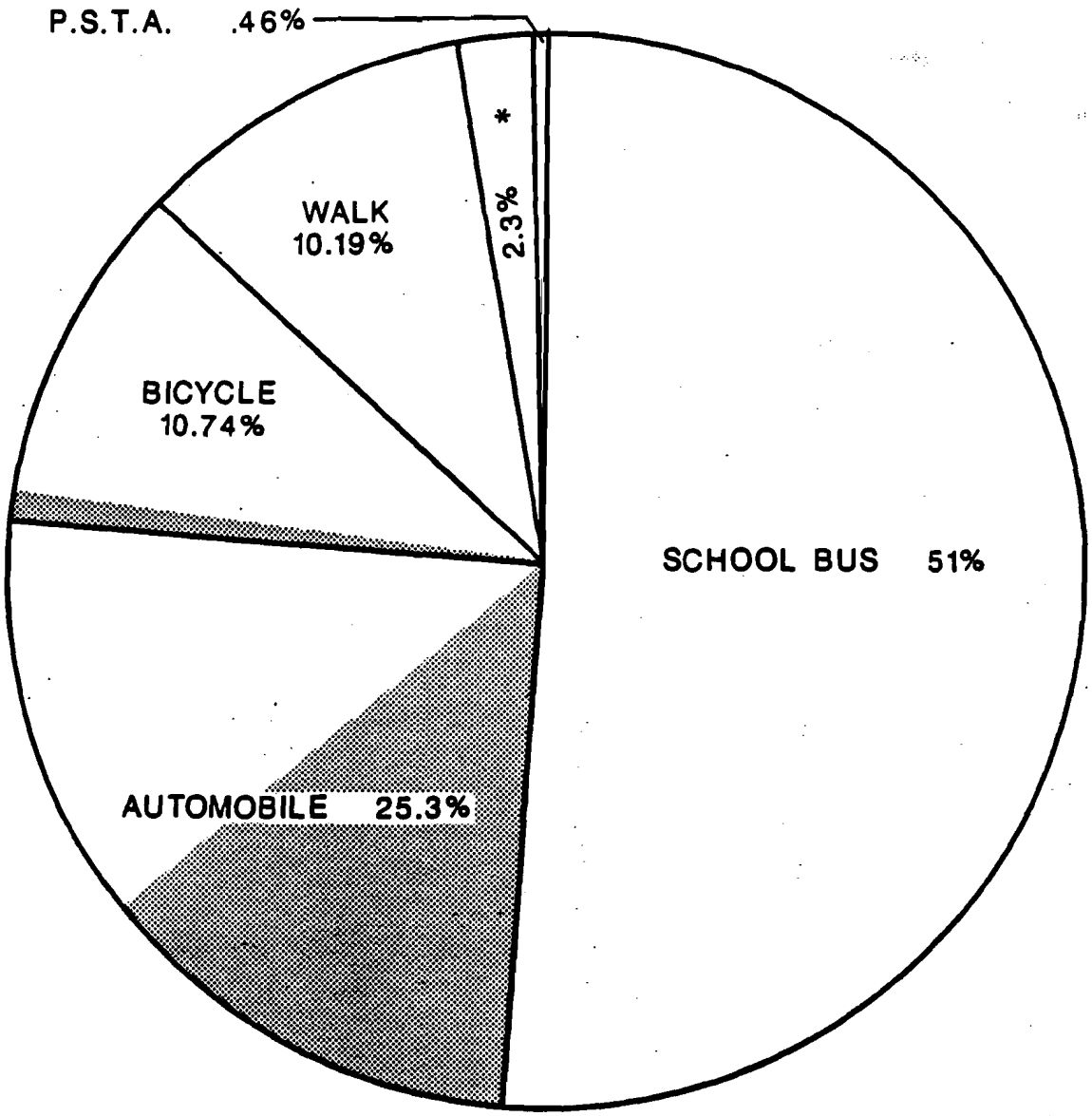
PINELLAS COUNTY TRANSPORTATION SURVEY MIDDLE SCHOOLS



* NO RESPONSE FROM RIVIERA MIDDLE SCHOOL.

THOSE WHO USED SAFETY DEVICES WHEN USING AUTOMOBILES OR BICYCLES (SEAT BELTS/HELMETS).

P.S.T.A.: PINELLAS SUNCOAST TRANSIT AUTHORITY.

Figure B

TABLE 4

PINELLAS COUNTY PEDESTRIAN SURVEY

Category	Total No.	Comments
1. Average No. of Trips	6.91	
2. Average Trip Length		2.34 miles or 26.44 minutes
3. Like Most About Walking	466	a. Exercise
	158	b. Scenery, fresh air, being outdoors, away from home, office
	193	c. Relaxation, close to nature, time to think, helps aches & pains
	43	d. Visiting with friends, family time
	90	e. Other (economical, meet people stimulating
4. Like Least About Walking	196	a. Traffic, exhaust fumes
	165	b. Heat, (weather)
	143	c. Lack of sidewalks
	88	d. Time(not enough/too much)
	77	e. Loose animals and insects
	249	f. Other (safety/turning traffic walk lights not long enough, unswept sidewalks/curbs, tall shrubbery, boring)
5. Government Aid Suggestions	173	a. Enforcement(increased safety)
	495	b. More sidewalks (or lights)
	152	c. Designated pedestrian(trails)
	96	d. Education (Ped/right-of-way)
	94	e. Other (scenic vistas, mixed-uses, no turn-on-red light)
6. Known Someone Mugged or Bothered While Walking	25	a. Mugged
	77	b. Bothered/solicitors (Beggers)
	92	c. Verbal harassment
	14	d. Followed
	99	e. Other
7. Known Someone Struck by Car While Walking		Yes 80 No 728

E. PEDESTRIAN ACTIVITY

The lack of interesting things to view retards walking, as well as the fact that if there were more people walking the feeling of isolation would be curtailed.

Pedestrian oriented areas where people are encouraged to walk for pleasure can be made inviting with plants, trees and landscapes, thereby creating a space where people feel comfortable. Studies reveal that people pick up their pace at an unattractive stretch, and lower their pace when among attractive sights. People feel secure and prefer space created by exterior buildings and outside items. They find it more pleasing to have "outside rooms" - space created by narrow streets and taller buildings - and will gravitate towards this type of environment for walking. The perception and psychological appeal of the "outdoor room" is lost when the ratio of the width exceeds six times the height of the buildings.

While the average lunch-time walk by an office worker is estimated to be nine minutes, slumping retail centers and office towers placed too far from employment centers are not utilized by the lunch-time office worker. Inevitably, he/she will stop and shop on their way home from work, or on weekends.

Regardless what the destination of the pedestrian is, the main goal is pedestrian access. Suggested guidelines in criteria sections of zoning provisions should stimulate pedestrian access by providing landscaped walkways and arcades between major buildings within a development, adjacent developments or buildings, and major buildings and streets providing public transportation facilities. Sidewalks, walkways and passenger areas at bus stops that are paved with all-weather material can encourage people to walk.

Barriers such as berms and walls, large landscaped areas or parking lots between major buildings entrances and bus stops, walking distances beyond 750-1000 feet, and unsafe conditions all discourage pedestrian transportation.

CHAPTER III

PEDESTRIAN ACCIDENT INVENTORY AND ANALYSIS

Introduction and Chapter Overview

Walking is the most vulnerable of all transportation modes, lacking the strength of a steel vehicle, and even the speed of a motorcycle and bicycle.

If transportation deals with the movement of people and goods, then pedestrian transportation deserves equal status with automobile and mass transit. Every trip involves walking, making it the most pervasive form of transportation. Despite the flexibility of pedestrians, they are more vulnerable to failures in the transportation system, particularly when they result in collisions with motor vehicles.

TABLE 5

PINELLAS COUNTY PEDESTRIAN ACCIDENTS

YEAR	NON-FATAL	FATAL
1985	471	37
1986	478	34
1987	411	32
1988	469	35
1989	450	36

*Source: Florida Department of Highway Safety and Motor Vehicles

This chapter presents a detailed picture of the local safety problems reflected in these statistics. A study was made of all pedestrian accident reports filed by local law enforcement officers in 1989 and part of 1990. Through this analysis, basic information was obtained about accident locations, the frequency with which various types of accidents

occur, and the sex and age groups of pedestrians involved in these accidents. This data is useful in identifying countermeasures, or strategies for accident prevention. Countermeasures can then be incorporated into the comprehensive pedestrian transportation plan.

Knowledge of the most common types of pedestrian accidents, accident locations, and the age of these pedestrians involved, can help develop specific countermeasures which can be monitored to measure results. The ongoing analysis provides an indication of the effectiveness of a local pedestrian transportation plan.

The first section in this chapter contains background information on the development of the pedestrian accident analysis procedures. The second section outlines the methodology used to analyze local accident reports. The third section contains three charts which summarize the overall results of the accident analysis. A comparison of local, state, and national data is presented in the fourth section. Findings and conclusions are discussed in the fifth section, and the final section contains recommendations for further action.

SECTION I:

Background on Nationwide Pedestrian Accident Analysis

With the dramatic growth in population and tourism in our county, the growth of our senior population, and the rising popularity in walking, the 90's are expected to see a corresponding increase in pedestrian accidents. Through the 1984 Florida legislation action and Federal DOT policy requiring pedestrian ways be given full consideration in the planning of transportation facilities at all levels, initial steps are being taken toward accident reduction. The recent amendments were in response to changes in Federal regulations in 1984 to aid senior adults and the handicapped pedestrians.

Florida has the second highest rate of pedestrian fatalities in the country with a rate of 5.12 per 100,000 residents in 1988. This is almost twice the national average of 2.81 per 100,000 population.

Fatalities among the older residents of the state are particularly high, accounting for 23 percent of all pedestrian fatalities. The number of fatalities and injuries has increased 18 percent since 1980.

The quality of life is being threatened by automobile noise, pollution, and traffic congestion. At a time when more people are inclined to walk for exercise, it is becoming increasingly difficult to simply to cross a street, especially when that street is a six-lane arterial with no pedestrian signals, raised medians, or crosswalks.

Additionally, walking is a significant form of transportation because it makes economic sense. Walking conserves fuel. If suitable conditions exist in a community, walking can replace the auto for many short trips and thereby improve air quality. The average walking trip is .6 miles, yet a short auto trip of .5 miles can consume up to 5 times more fuel per mile traveled than longer trips. And a short auto trip of just 1/4 mile provides only a 10 percent overall fuel economy. A model shift from car to foot for trips up to 1/2 mile could contribute significantly to a reduction in gasoline, land consumption, and air pollution.

In a recent survey of local pedestrian/bicycle coordinators, those surveyed indicated that an average of approximately 3 percent of work trips are made on foot. The same survey indicated that 3.2 percent of shopping trips and 15 percent of all school trips are walking trips.

These figures are somewhat lower than what has been reported nationwide. National studies indicate that approximately 4.5 percent of all work trips are on foot. The frequency of walking work trips is related to city size. Nationally, cities with populations under 250,000 and cities with populations over 1 million are more likely to show increased walking for work trips (4 percent and 6.2 percent respectively). The proximity of residence to employment centers seems to be the strongest influence over the popularity of walking. Cities with populations of 500,000 to 1 million experience the lowest frequency for walking work trips (2.5 percent of all work trips).

SECTION 2:

Methodology

To perform an effective, statistically-valid analysis of pedestrian accidents, a minimum of 300 accident reports is recommended. To determine the frequency of all accident types, NHSTA research has recommended coding a minimum of 800-1000 accident reports, or three to five years' worth of accidents. There are 37 types of accidents, some of which occur only infrequently. The Pinellas County study focuses on 1989 and 1990 available reports to-date since this data is the most recent available.

A total of 420 accidents were analyzed using the NHSTA classification method. As can be seen from Table 5, this number differs from state records. It is thought that the Department of Highway Safety and Motor Vehicles did not receive copies of all of the accident reports filed with local law enforcement agencies in 1989. Furthermore, while the number of fatal accidents listed by the state is 36, this study makes reference to only 21 fatalities. Reports are updated by the investigating officer if a death results sometime after the accident. This study did not have access to all of the updated accident reports and as such, it can be assumed that 15 deaths occurred after the accident reports had been prepared but were not available for our accident typing activities. The study results discussed in this chapter are based upon locally gathered data and not upon state records.

SECTION 3:

Overall Results of the Study

The results of the local accident-typing process are summarized in Tables 6,7, and 8. Table 3 lists the general accident classes in order of magnitude, while Table 8 lists the most common individual accident types. As seen from Table 8, the most common types of accidents account for approximately 16.19 percent of all accidents that occurred in 1989.

PEDESTRIAN ACCIDENT ANALYSIS

Summary and Profiles

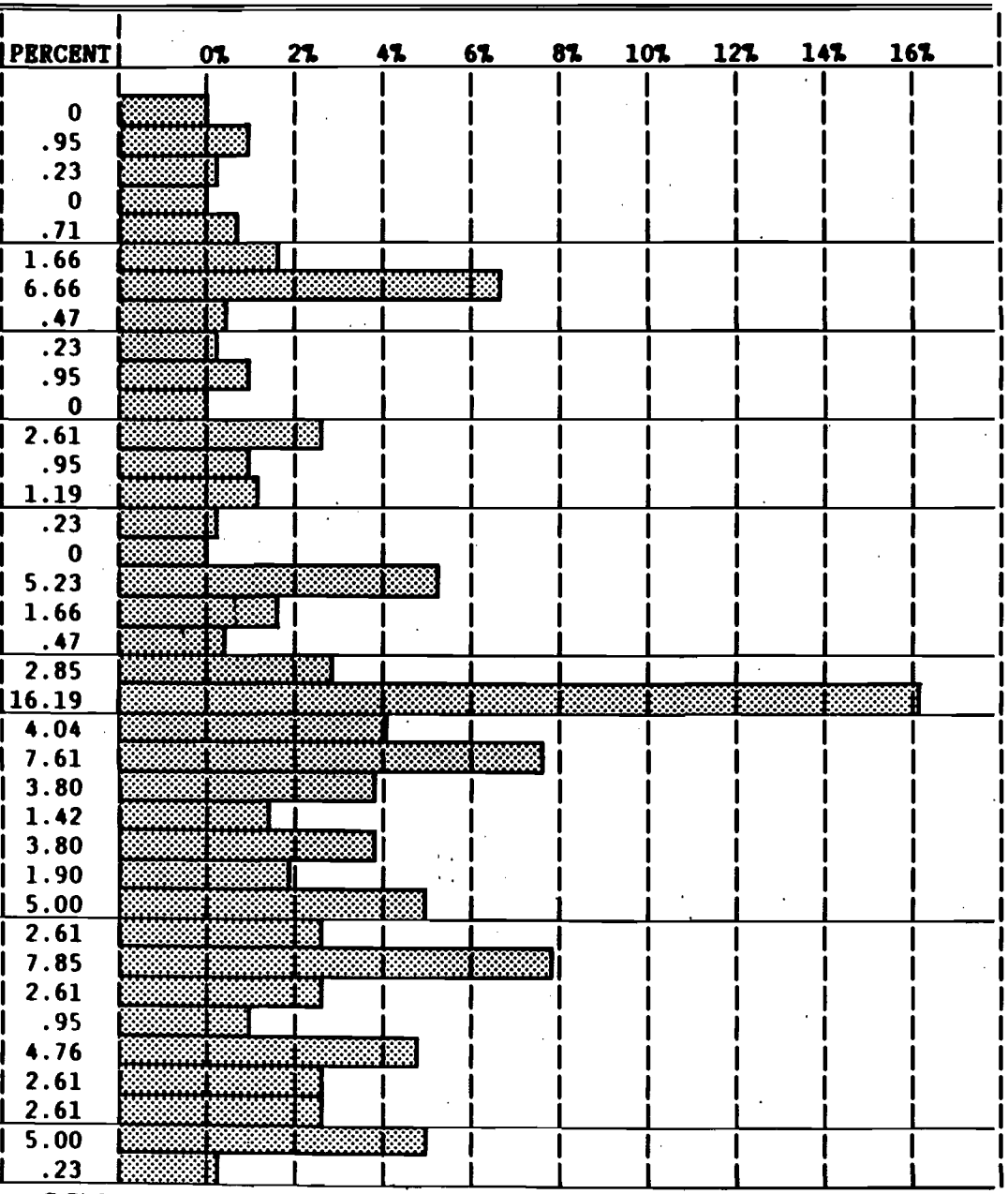
Covering Period 1-1-89 to 12-31-89

Total Accident Cases Analyzed: 420

TABLE 6

* National Highway Traffic Safety Administration Accident Codes

CLASS	* CODE	ACCIDENT TYPE	COUNT	PERCENT
1	110	Commercial Bus-related	0	0
	120	School Bus Related	4	.95
	130	Vendor/Ice Cream Truck	1	.23
	140	Mailbox Related	0	0
	150	Exit/Entering Parked Vehicle	3	.71
2	210	Driverless Vehicle	7	1.66
	220	Backing Vehicle	28	6.66
	230	Hot Pursuit	2	.47
3	310	Walking to/from Disabled Vehicle	1	.23
	320	Disabled Vehicle Related	4	.95
	330	Emergency/Police Related	0	0
4	410	Working on Roadway	11	2.61
	420	Play Vehicle Related	4	.95
	430	Playing in Roadway	5	1.19
5	510	Hitchhiking	1	.23
	520	Expressway Crossing	0	0
	531	Walking Along Road With Traffic	22	5.23
	532	Walking Along Road Against Traffic	7	1.66
	539	Walking Along - Can't Specify	2	.47
6	610	Pedestrian Waiting to Cross @/near curb	12	2.85
	620	Pedestrian Not in Roadway	68	16.19
7	710	Multiple Threat at Intersection	17	4.04
	720	Vehicle/Turn Merge	32	7.61
	730	Intersection Dash	16	3.80
	740	Trapped	6	1.42
	750	Pedestrian walks into vehi. @ intersec.	16	3.80
	760	Intersection - Driver Violation	8	1.90
	790	Intersection - Other	21	5.00
8	810	Multiple Threat - At Intersection	11	2.61
	821	Dart Out - First Half	33	7.85
	822	Dart Out - Second Half	11	2.61
	829	Dart Out - Can't Specify	4	.95
	830	Midblock Dash	20	4.76
	840	Pedestrian Walks into Vehicle Midblock	11	2.61
	890	Midblock - Other	11	2.61
9	910	Other - Weird	21	5.00
	920	Inadequate Information	1	.23



SOURCE: THE PINELLAS COUNTY PLANNING DEPARTMENT

TABLE 7

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PEDESTRIAN ACCIDENTS BY GROUP CLASSIFICATION

Accident Class	Total Number	Percent Of All Accidents
Accident occurred at or within 50 feet of an intersection (7)	116	27.61
Accident occurred midblock (more than 50 feet from an intersection (8)	101	24.04
Pedestrian struck on/near curb, roadway edge, or other nonroadway location (6)	80	19.04
Striking vehicle was driverless, backing in pursuit, or an emergency vehicle (2)	35	8.33
Pedestrian was struck while hitchhiking, crossing limited expressway, walking/running alongside road without sidewalks (5)	32	7.61
Other type or inadequate information (9)	22	5.23
Pedestrian struck while working or playing in roadway or a play vehicle (4)	20	4.76
Motorist struck pedestrian going to/from or crossing near bus/bus stop; ice cream vendor rural residential mailbox; exiting/ entering a stopped/ parked vehicle (1)	8	1.9
Pedestrian was struck by motorist while going to/from or while near/next to a disabled vehicle, an active police or emergency vehicle (3)	6	1.42
TOTALS	420	99.94

SOURCE: THE PINELLAS COUNTY PLANNING DEPARTMENT

TABLE 8

ELEVEN MOST COMMON TYPES OF ACCIDENTS IN PINELLAS COUNTY

Accident Type	Total Number	Percent Of All Accidents
1) Pedestrian struck when not in roadway (620)	68	16.19
2) Pedestrian struck before crossing first half of roadway (821)	33	7.85
3) Vehicle/turn merge (720)	32	7.61
4) Backing Vehicle (220)	28	6.66
5) Walking along road with traffic (531)	22	5.23
6) Intersection-other (790)	21	5.0
7) Other-weird (910)	21	5.0
8) Midblock dash (830)	20	4.76
9) Multiple threat at intersection (710)	16	3.8
10) Pedestrian walks into vehicle at intersection (750)	16	3.8
11) Intersection Dash (730)	17	4.04
TOTAL	294	69.94

SOURCE: THE PINELLAS COUNTY PLANNING DEPARTMENT

SECTION 4:

A Comparison of Local, State, and National Data

Figure C, 1989 National Pedestrian Fatalities, depicts the five states with the highest numbers of pedestrian fatalities for the given period. Clearly it can be seen that Florida has the second highest pedestrian rate of 5.77 per 100,000 population.

A continuing dramatic increase in pedestrian injuries and fatalities has occurred beginning in 1982 (Figure D). This is continuing to inch upward in years hence.

Table 9 shows pedestrian injuries and fatalities, plus accident rates (per 10,000 population) in the individual counties of Florida. The county with the highest accidents is Dade County followed by Broward, Hillsborough, Palm Beach, Orange, and Pinellas which ranked sixth in the state for both injuries and fatalities.

Pedestrian Safety by Sex and Age

Pedestrian safety is of particular concern for senior adults and for children. Figures E and F depict the pedestrian fatalities and the pedestrian injuries respectively for 1989 in Pinellas County.

With Pinellas County's large senior population, it is noteworthy to point out that while senior adults are generally involved in fewer pedestrian accidents than other age groups, they are much more likely to die as a result of the accident than victims in other age groups.

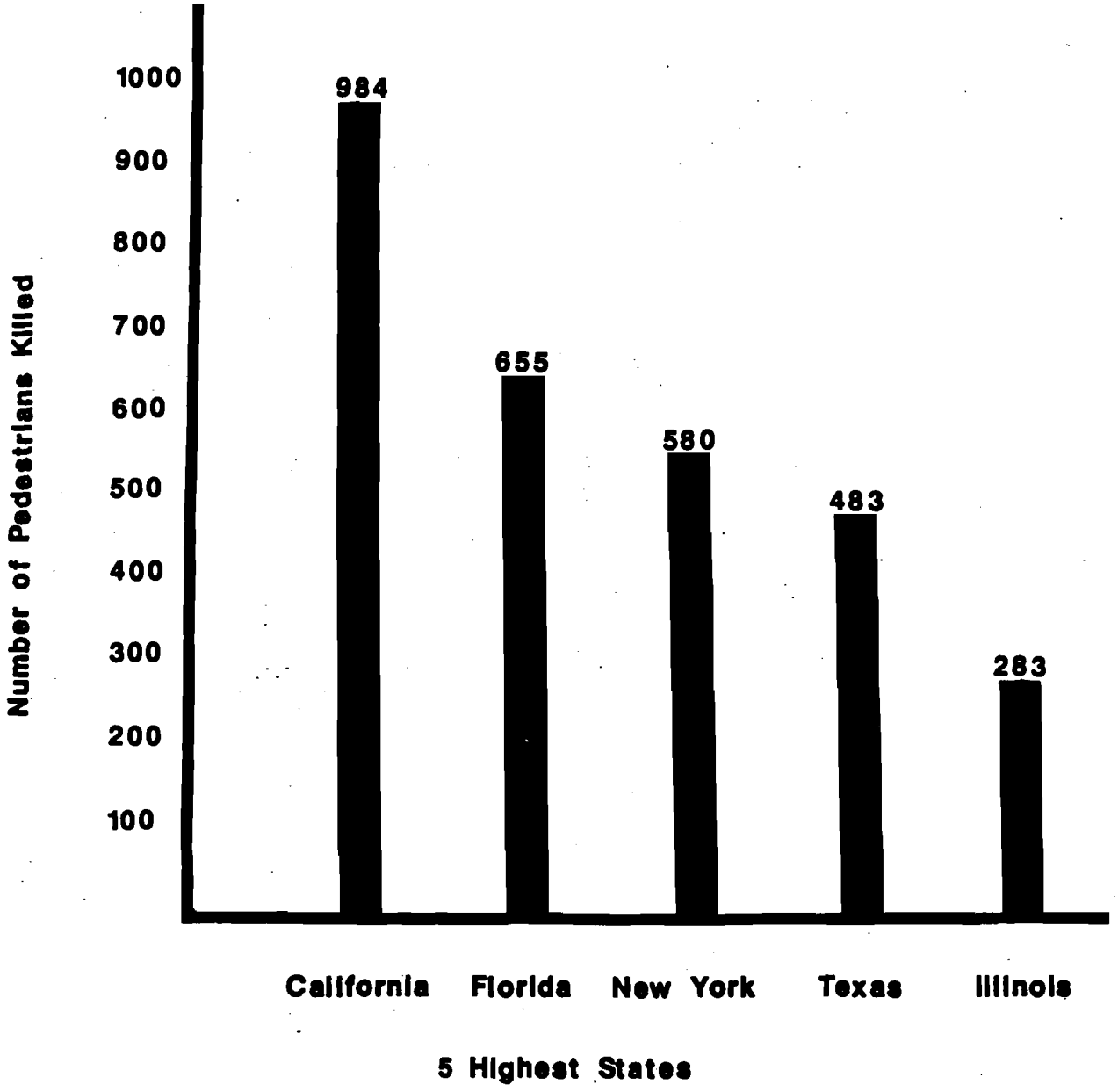
Children are heavily involved in pedestrian accidents; in fact, in 1989 children under 16 accounted for eight percent of all pedestrian fatalities in Pinellas County, as compared to seven percent statewide.

The group classification with the highest number of pedestrian injuries is males between 25 and 34 years old; the second highest group is males between 10-14 years old; and, following closely for third is the age group between 5 and 9 years of age. The highest pedestrian injuries

Figure C

1989 NATIONAL PEDESTRIAN FATALITIES

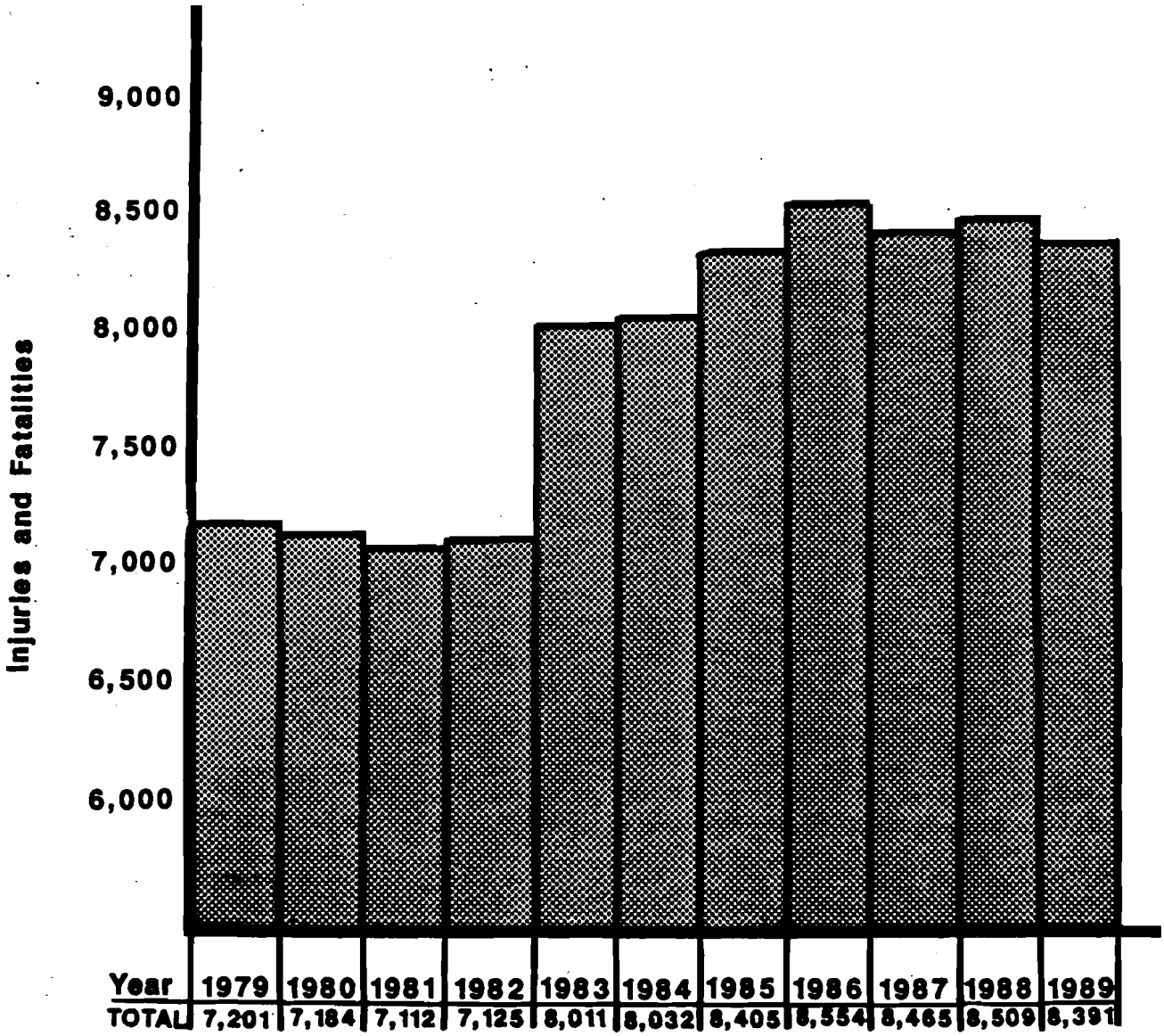
States with highest number of pedestrian fatalities



SOURCE: FDOT

Figure D

FLORIDA PEDESTRIAN INJURIES AND FATALITIES



SOURCE: DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES

Table 9

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1989 PEDESTRIAN INJURIES

	No. of Injuries	Population	Rate Per 10,000 Population
1. Dade	1870	(1,873,100)	9.983
2. Broward	978	(1,242,400)	7.872
3. Hillsborough	574	(841,000)	6.825
4. Palm Beach	573	(865,500)	6.62
5. Orange	548	(654,000)	8.379
6. Pinellas	450	(855,400)	5.26
7. Duval	440	(686,300)	6.411
8. Volusia	339	(360,000)	9.416
9. Polk	275	(410,900)	6.692
10. Brevard	203	(403,500)	5.03

1989 PEDESTRIAN FATALITIES

	No. of Fatalities	Population	Rate Per 10,000 Population
1. Dade	110	(1,873,100)	.587
2. Broward	68	(1,242,400)	.547
3. Hillsborough	42	(841,000)	.499
4. Palm Beach	39	(865,500)	.45
5. Orange	38	(654,000)	.581
6. Pinellas	36	(855,400)	.42
7. Duval	28	(686,300)	.407
8. Polk	26	(410,900)	.632
9. Charlotte	25	(99,200)	2.52
10. Brevard	24	(403,500)	.594

SOURCE: DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES

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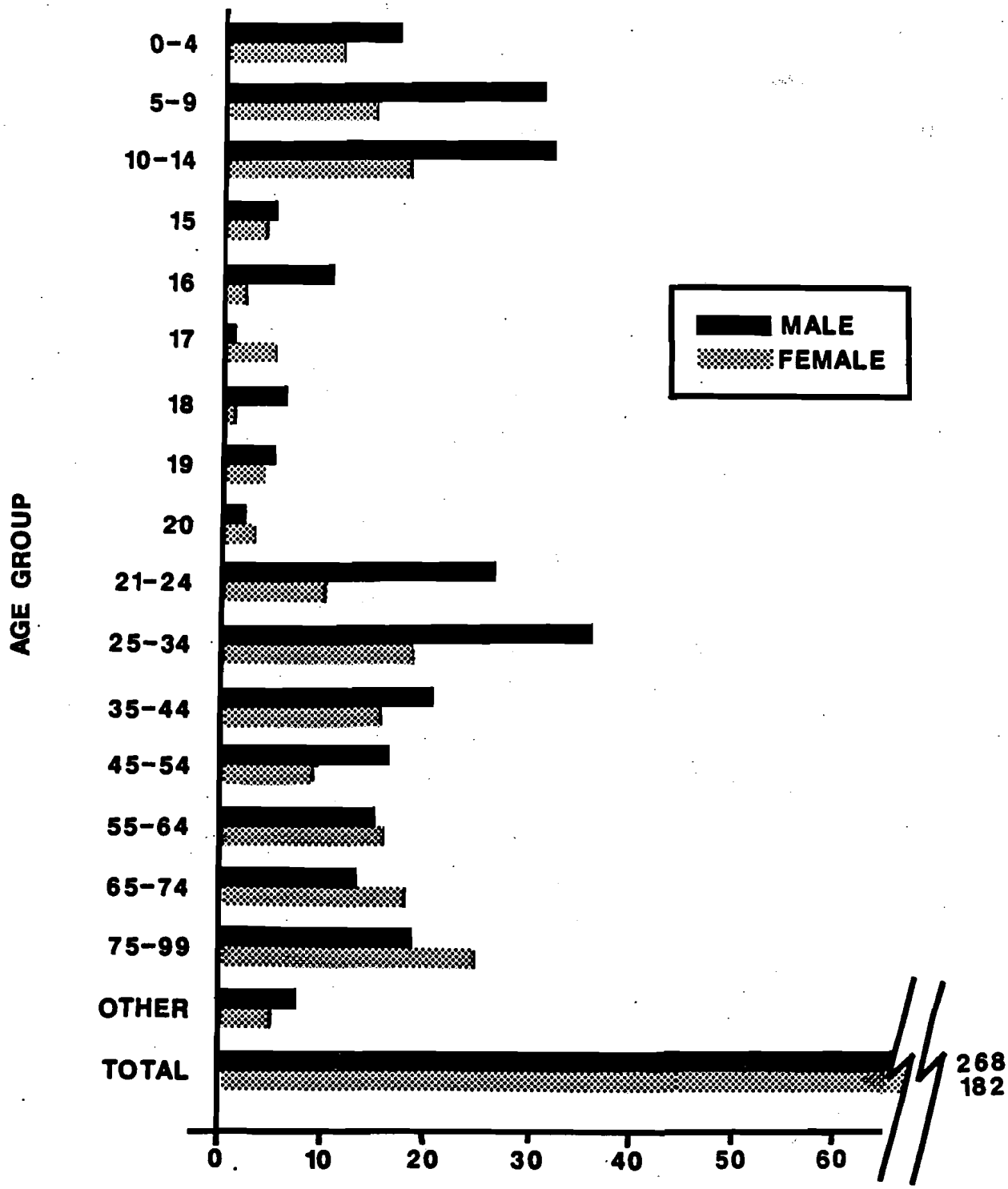
Figure E

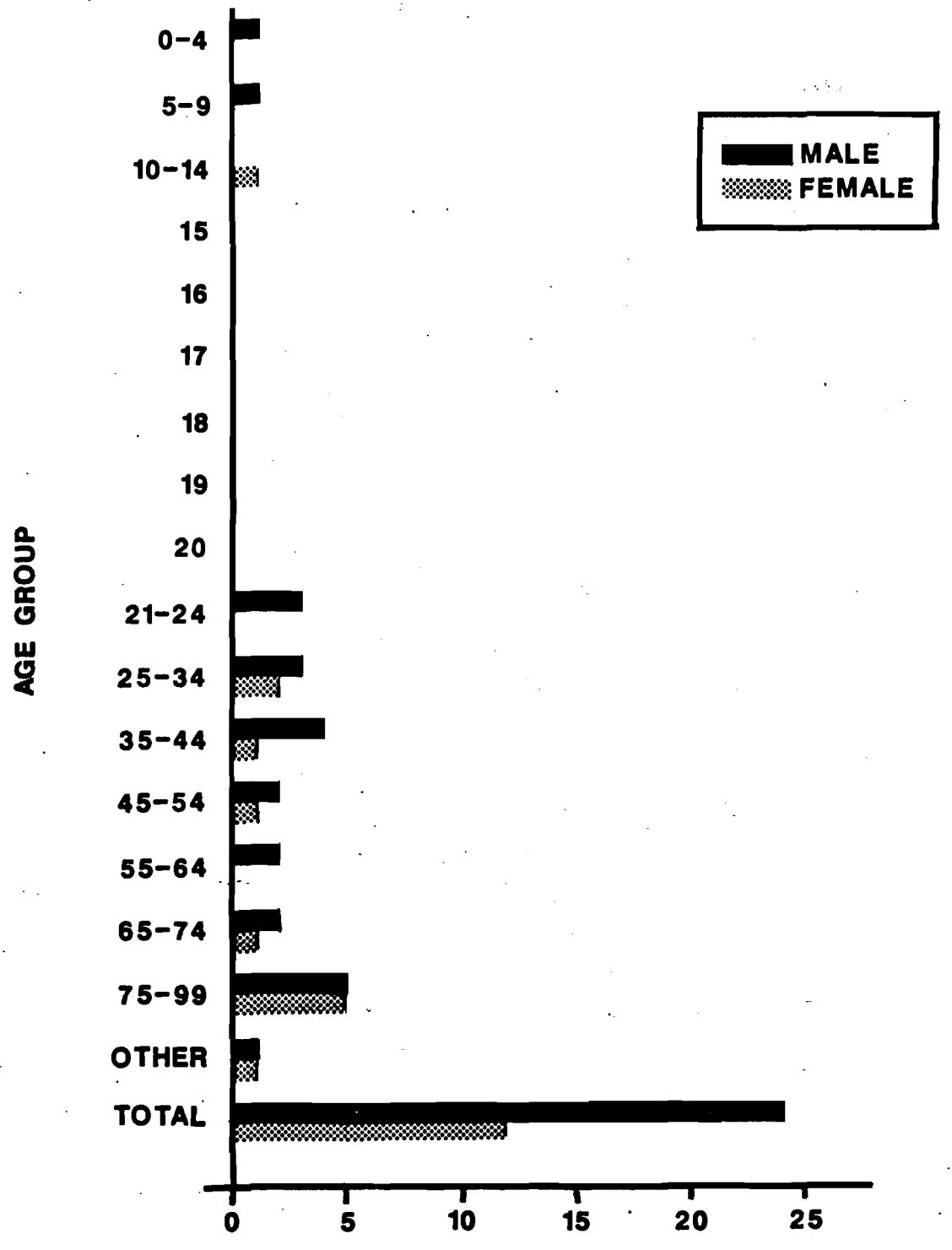
1989 PINELLAS COUNTY PEDESTRIAN INJURIES BY SEX AND AGE



SOURCE: DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES

Figure F

1989 PINELLAS COUNTY PEDESTRIAN FATALITIES BY SEX AND AGE



SOURCE: DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES

among the female population is in ages over 75 years old; second highest is 25 to 34 years of age. Age categories of 10–14 and 65–74 ranked third. See Figure G.

The highest male fatalities, as well as the highest female fatalities, occurred in the age category of over 75.

Accident Classifications

The accident class termed "other" contains many unrelated types of accidents which account for a proportion of non-fatal accidents in Pinellas County, Florida, and the United States. Due to the miscellaneous composition of this accident class, it cannot be meaningfully ranked or compared to the other accident classes. Included in the "other" category are accident situations not covered by any of the specific categories of accidents or those where insufficient information was available to specify the accident type.

The non-roadway accident, where the pedestrian is struck when not in/near a roadway (i.e. in a parking lot, driveway, private road, gas station, alley, sidewalk, yard, garage, ball field) is one of the more common types of local accidents as shown on Table 8.

Crossing Not at Intersection accidents account for the largest percentage of fatal and non-fatal occurrences in Pinellas County, as well as state and nationwide. The majority of the accidents occur when the pedestrian is struck before crossing half of the roadway (dart-out) and the motorist's view of the pedestrian was blocked until an instant before impact. Within the Crossing Not at Intersection class, the multiple threat emerges as one of the most common accident types at all three levels, although the proportion of such accidents is highest in Pinellas County. This incident occurs when the pedestrian enters the roadway in front of standing/stopped traffic, and is struck by a vehicle heading in the same direction as standing traffic; driver's vision is blocked by standing traffic.

Figure G

1989 PINELLAS COUNTY INJURIES AND FATALITIES

	INJURIES		FATALITIES	
	MALE	FEMALE	MALE	FEMALE
0-4	17	12	1	0
5-9	32	15	1	0
10-14	33	18	0	1
15	5	4	0	0
16	11	2	0	0
17	1	5	0	0
18	6	1	0	0
19	5	4	0	0
20	2	3	0	0
21-24	27	10	3	0
25-34	37	19	3	2
35-44	21	16	4	1
45-54	17	9	2	1
55-64	15	16	2	0
65-74	13	18	2	1
75-99	19	25	5	5
NOT/STD	7	5	1	1
TOTALS	268	182	24	12

SOURCE: DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES

Crossing at Intersection category, which includes the vehicle/turn merge type of accident where the pedestrian and vehicle collide while the vehicle is in the process of turning/merging, accounts for a significant percentage of occurrences in Pinellas County. These accidents occur while the pedestrian is crossing properly at an intersection within the crosswalk designation. The motorist is moving forward to check for oncoming traffic or turning, and collides with the pedestrian.

The Right Turn on Red type accidents also occur frequently in Pinellas County.

As can be seen in Table 10, the majority of Pinellas County's 1989 pedestrian fatalities and injuries occurred while pedestrians were crossing streets. This fact is also true at the state and national levels.

In 1989, walking along the road <u>with</u> traffic accounted for 2.7 percent of the pedestrian fatalities (1 person) and 6.3 percent of the pedestrian injuries (30 people). This was more than three times the frequency for accidents involving a pedestrian walking along the road against traffic, which is the recommended practice.

<u>SECTION 5</u>:

<u>Findings and Conclusions</u>

Pinellas County has a notably larger senior population than most of Florida. The fact that senior adults are more likely to be involved in an accident occurring at an intersection could account for the high number in this category, (twenty-five percent of all senior adult pedestrian fatalities as compared to only 10 percent of children four and under.)

A growing pedestrian safety problem is the incidence of alcohol involvement in fatal pedestrian accidents. The Insurance Institute for Highway Safety reports that 50 percent of pedestrians 16 years and older

MPC

Table 10

1989 PINELLAS COUNTY PEDESTRIAN BEHAVIOR IN ACCIDENTS

ACTIONS	FATALITIES	%	INJURIES	%
Crossing at intersection	1	2.7	90	18.5
Crossing NOT at intersection	26	72.2	173	35.6
Walking along road with traffic	1	2.7	30	6.3
Walking along road against traffic	0	0	9	1.8
Standing/Playing in road	0	0	34	7.0
Pushing or working on vehicle	0	0	4	.8
Other working in road	1	2.7	6	1.2
Other	6	17	138	28.4
Not stated	1	2.7	2	.4
TOTAL	36	100.0	486	100.0

* Column 1 figures are included in Column 3 totals. (I.e. 90 total injuries, 1 fatality)

SOURCE: THE PINELLAS COUNTY PLANNING DEPARTMENT

Figure H

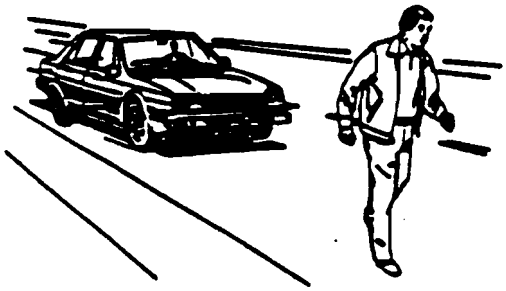
PEDESTRIAN ACCIDENT TYPES

More than 70 percent of all pedestrian traffic collisions have been found to be characterized by one of the following types:

Accident Type: DART OUT

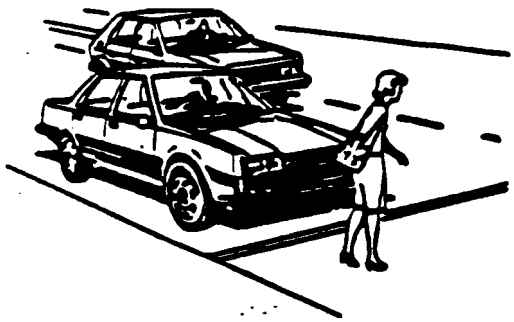
The pedestrian enters the street midblock and is struck by, or walks, or runs into a moving vehicle, typically in residential neighborhoods.

Accident Type: WALKING ALONG ROAD-WAY



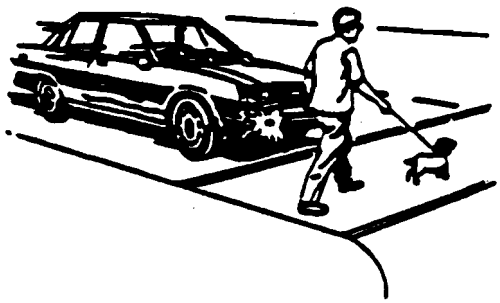
The pedestrian is struck by a vehicle while walking along the edge of the roadway or the shoulder. This occurs most often on country roads after dark.

Accident Type: MULTIPLE THREAT



The pedestrian, crossing a multilane street, is permitted to cross by one or more vehicles that stop or slow down in order to yield. The pedestrian is then hit by another vehicle traveling in the same direction that passes the yielding vehicle. The yielding vehicle(s) forms a visual screen between the pedestrian and the striking vehicle.

Accident Type: VEHICLE TURN / MERGE



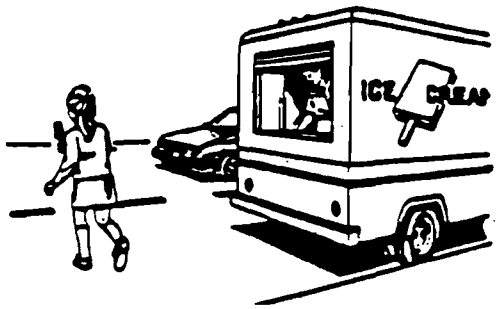
The driver is turning into and merging with traffic, and his vehicle strikes a pedestrian who is generally headed in a direction different from the driver's focus of attention.

PEDESTRIAN ACCIDENT TYPES

SOURCE : NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

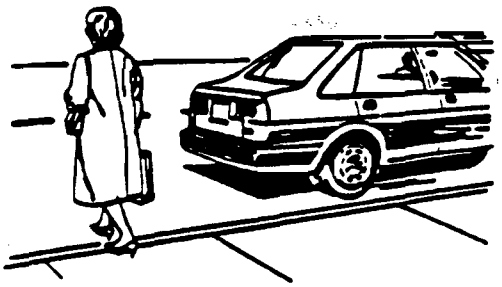
Figure I

Accident Type: ICE CREAM VENDING TRUCK



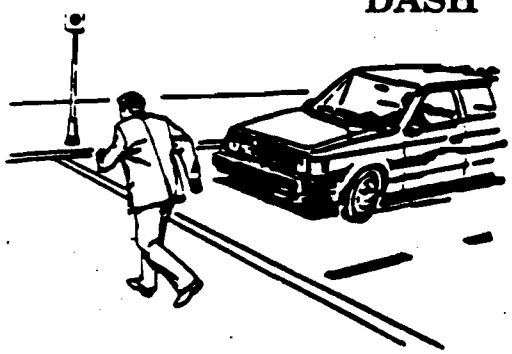
The pedestrian is struck going to or from an ice cream vending vehicle. This accident occurs almost exclusively in residential areas. Most occur as the pedestrian is leaving the vending vehicle.

Accident Type: BACKING-UP



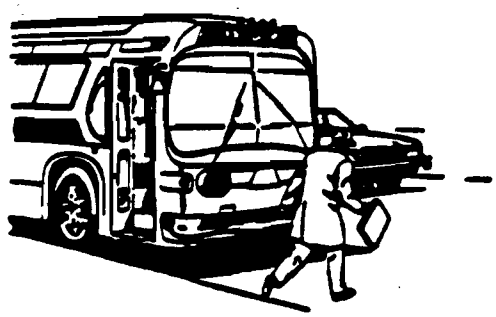
A pedestrian is struck after failing to see a vehicle backing up, or not being seen by the driver of the backing vehicle.

Accident Type: INTERSECTION DASH



Similar to the dart out, this type of accident occurs in or near a marked or unmarked crosswalk. A person runs across the intersection, is seen too late by the driver, and is struck.

Accident Type: BUS STOP



A bus has stopped to discharge passengers. A person leaves the bus, begins to cross the road in front of the bus, and is struck by an overtaking vehicle.

PEDESTRIAN ACCIDENT TYPES

SOURCE: NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

killed in nighttime crashes with motor vehicle crashes in 1988 were legally intoxicated. (blood alcohol concentration of 0.1 or higher). When looking at all adult pedestrian fatalities, the percentage of those killed who are legally intoxicated drops only to 38 percent. The blood alcohol concentrations of fatally injured pedestrians tend to be double that of other traffic fatalities.[1]

Dealing with the alcohol problem in pedestrian crashes is complicated by the fact that there are no legal restrictions against walking after drinking. Further, widely publicized campaigns to deter drunk driving may in fact be contributing to the accident problem for pedestrians.

The preceding comparisons of local, state, and national accident data indicate that the Pinellas County accident experience is similar in most respects to Florida and/or the United States.

There can be many behavioral and environmental factors which can contribute to a pedestrian accident. In many cases, the pedestrian does something unsafe, such as running out into the street without looking for traffic, or walking at night without reflective clothing or a flashlight. Motorists also do unsafe things such as drinking and driving, rendering them incapable of controlling their vehicles. Another common behavioral error of motorists is failing to check for pedestrians before turning, especially in right turn on red situations.

Seasonal Variation

Figure J illustrates a seasonal variation in accident frequency, with accident rates rising in March, July and November. Increasing accidents over the summer months may reflect school vacation activity and longer daylight hours. Pinellas County follows the national trend with increased accidents over the summer months. However, there is no seasonal trend apparent in Florida accidents as a whole.[2]

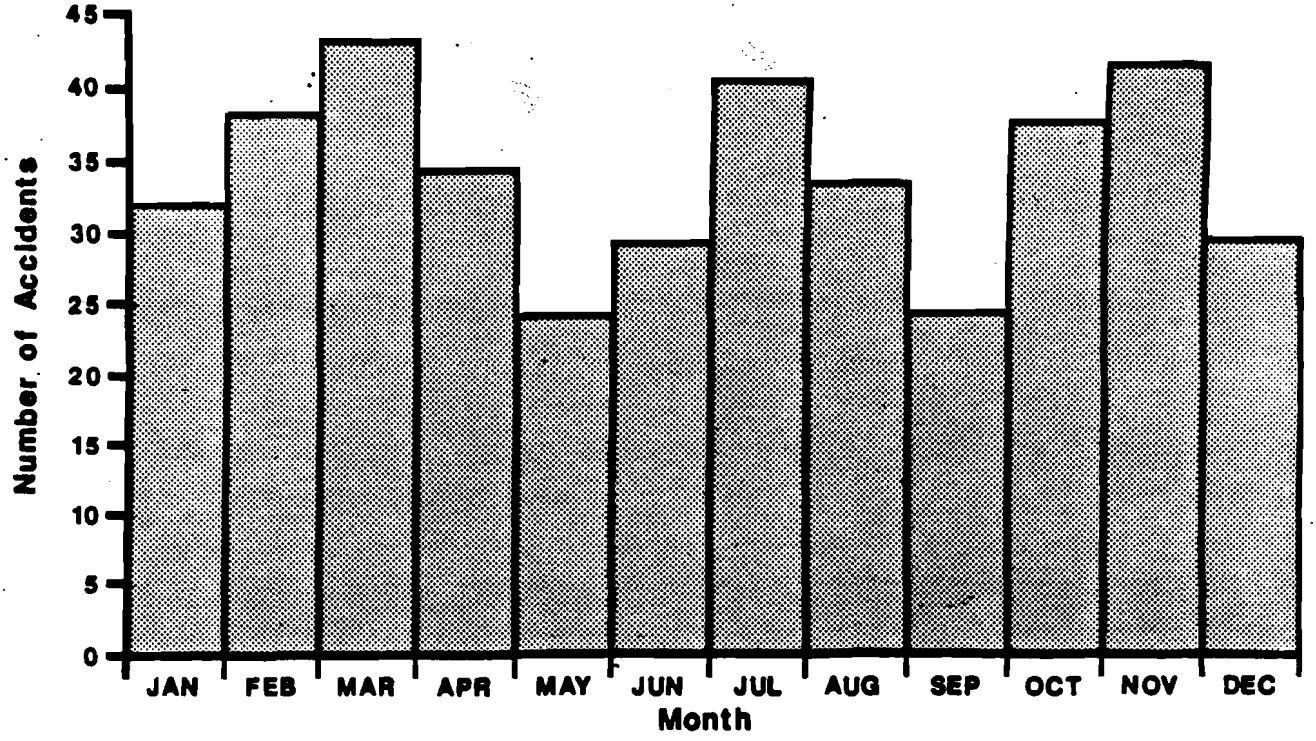
[1] Walk Alert Program Guide, (National Safety Council, 1971, p. 39)

[2] Kimberly-Horn and Associates, Inc. "Plan Development Materials" Orlando, 1983, p. 33

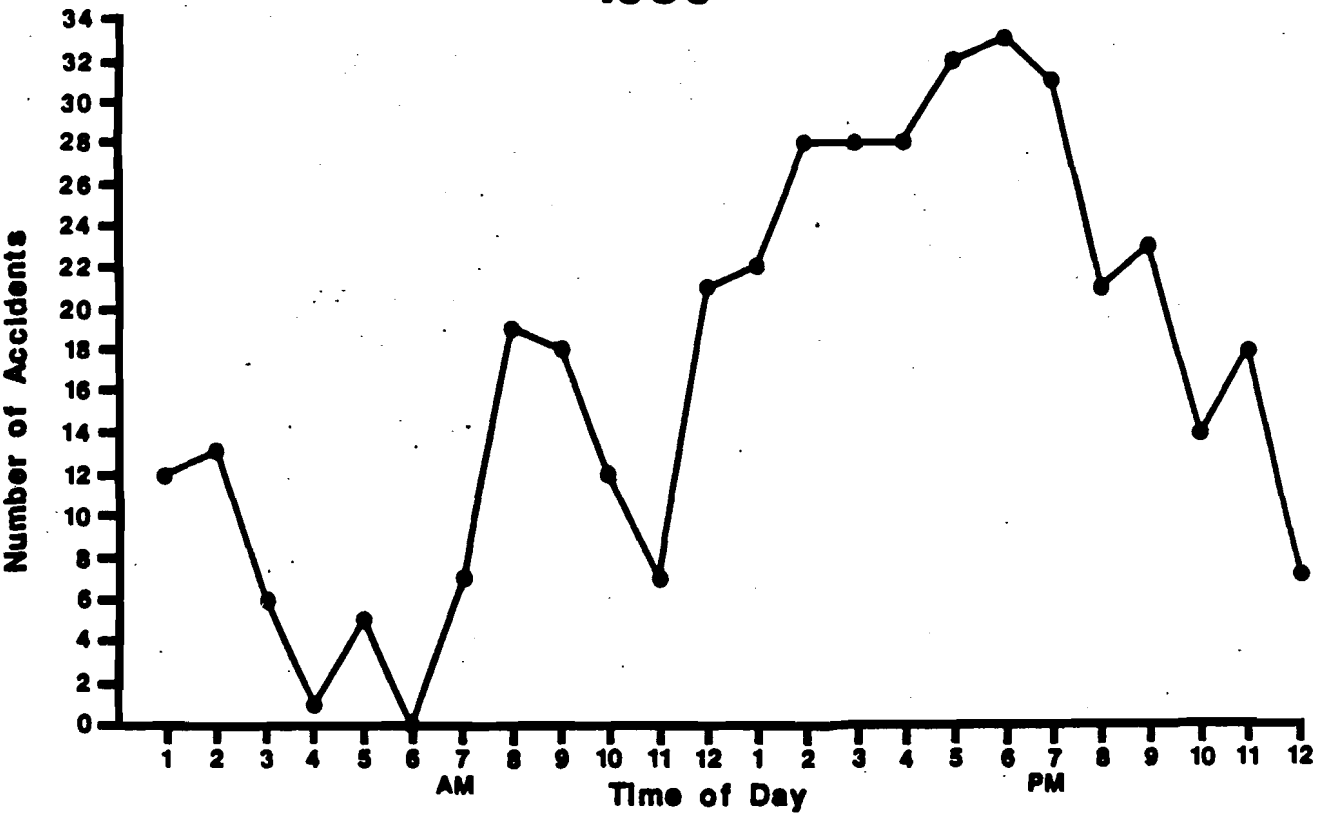
MPC

Figure J

SEASONAL VARIATION IN ACCIDENT COUNTS 1989



ACCIDENT FREQUENCY PER TIME OF DAY 1989



SOURCE: THE PINELLAS COUNTY PLANNING DEPARTMENT

Injuries and Fatalities

Table 11 groups pedestrians according to severity of injury. Over half of the people involved in pedestrian accidents were uninjured. Accident reports indicated that an additional 9.4 percent of accident victims had possible injuries.

Ages of Accident Victims

With regard to the ages of pedestrians involved in accidents, a general, rather than detailed comparison was made for local, state, and national data because different age ranges were used in analysis of Pinellas County data. In Pinellas County, as on a state and national level, the 25–34 age group accounted for the highest percentage of non-fatal accidents. However, there were no fatalities in Pinellas County among the ages of 15–20 in 1989, while nearly 5 percent of the state fatalities fell within this range. Because the national figures include age groups 15–54, no national figures are available for the age group 15–20. In addition, the six fatalities in the category of children 14 or younger in Pinellas County for 1989 was far below the 45 at the state level and 48 at the national level. Referencing non-fatal incidences, Pinellas County made up 7 percent of the state for children 14 and under. There were no national figures available. In comparison to national and state figures for fatality accidents of ages 55 and over, Pinellas County had 15 fatalities as compared to the national of 218 and statewide of 206. Considering the senior population and tourist activity in Pinellas County, these figures reflect a low ratio as compared to the state and national statistics.

Pedestrian-initiated accidents, specifically those in the Not Crossing at Intersection category, were found to predominate among Pinellas County pedestrians under the age of 10. While pedestrian-initiated accidents are also common among 10 to 15 year olds, the proportion of pedestrian-initiated accidents increases dramatically within the age group. Beginning with the 16 to 24 age group, the older the pedestrian becomes, the less likely he or she is to be involved in a

pedestrian-initiated accident, and the more likely his or her involvement in a motorist-initiated accident. Table 11 depicts the number of accident victims in each age group for each of the eight general classes of pedestrian-related accidents.

TABLE 11

NUMBER OF PEDESTRIANS BY SEVERITY OF INJURY

Injury:	None	Possible	Non-incapacitated	Incapacitated	Fatalities
Number:	565.0	99	185	152	36
Percent:	53.7	9.4	17.6	14.4	3.4

Of the 36 fatal accidents in Pinellas County during 1989, 26 occurred while crossing not at intersections. Nighttime accidents that involved pedestrian fatalities occurred more frequently.

TABLE 12

PEDESTRIAN FATALITIES

	Month/Day	Jurisdiction	Lighting Conditions	Age	Accident Type *
1)	08/03	Clearwater	Dark	24	822
2)	07/09	Tarpon Springs	Dark	70	610
3)	11/15	St. Petersburg	Dark	55	821
4)	07/22	Pinellas Park	Daylight	Unknown	821
5)	06/23	Clearwater	Dark	18	531
6)	11/14	Tarpon Springs	Daylight	10	610
7)	11/06	St. Petersburg	Daylight	7	822
8)	07/04	Clearwater	Dark	35	730
9)	11/11	Clearwater	Dark	46	840
10)	03/17	Redington Shores	Dark	38	821

* Refer to Pg. 11

TABLE 12

PEDESTRIAN FATALITIES

Month/Day	Jurisdiction	Lighting Conditions	Age	Accident Type *
11) 01/12	St. Petersburg	Dark	24	910
12) 04/02	St. Petersburg	Daylight	24	910
13) 06/30	Pinellas Park	Daylight	44	840
14) 08/13	St. Petersburg	Dark	33	840
15) 07/14	Clearwater	Dark	Unknown	750
16) 11/16	Kenneth City	Dark	33	790
17) 08/10	St. Petersburg	Daylight	82	829
18) 11/22	St. Petersburg Bch.	Daylight	81	620
19) 12/07	Clearwater	Daylight	91	790
20) 12/06	Madeira Beach	Daylight	84	750
21) 12/29	St. Petersburg	Dark	88	840

* Refer to Pg. 11

TABLE 13

PINELLAS COUNTY/AGE GROUPS

EIGHT GENERAL ACCIDENT CLASSES

	AGE GROUPS											
	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	NOT STATED	TOTALS
Crossing not at Intersection	14	34	21	14	13	17	11	8	11	27	3	173
Crossing at Intersection	3	4	8	9	8	5	6	8	7	30	2	90
Walking along the road with traffic	1	0	3	10	1	4	4	1	1	3	2	30
Walking along the road against traffic	0	0	2	0	3	1	0	1	0	2	0	9
Pushing/ Working on vehicle	0	0	0	1	1	0	2	0	0	0	0	4
Other Working In Road	0	0	0	0	1	2	1	0	1	1	0	6
Standing/ Playing In Road	4	5	3	4	5	6	4	1	0	1	1	34
Other	8	5	15	6	13	26	14	10	12	23	6	138
Not Stated	0	0	0	0	0	0	0	0	1	1	0	2
TOTALS	30	48	52	44	45	61	42	29	33	88	14	486
Percent of Service - Department of Safety & Motor Vehicles	6.17	8.86	10.7	9.10	9.25	12.55	8.64	5.96	6.79	18.10	3.88	100.0

As can be expected, a much larger proportion of elderly pedestrians, 65 years of age or older, are involved in fatal and non-fatal accidents in Pinellas County, statewide and nationwide as well. Data of fatal pedestrian accidents within Pinellas County show that younger pedestrians are most frequently involved in Crossing Not at Intersection accidents, while the elderly are more often involved in Crossing at Intersection-related accidents. Many of the elderly victims reportedly had severe vision and/or hearing impairments. Additionally, their slow movements are often due to physical inabilities that may have been contributing factors in accidents involving the elderly.

Accident Location

With regard to accident location, the distribution between accidents occurring at Crossings Not at Intersections is nearly doubled versus accidents that occur while Crossing at Intersections. Thirty-five percent of the accidents occurred at midblock location, 18% occurred at an intersection, and 28% occurred when the pedestrian was not in a roadway (i.e. parking lot, driveway, private road, gas station, alley, sidewalk, yard, garage, ball field, etc.). Figure K illustrates the general distribution of accident locations throughout Pinellas County. Although the overall pattern is scattered, there is a heavy concentration of accidents in downtown and southernmost St. Petersburg. Accidents are concentrated in certain other locations and corridors as well. A more detailed analysis of accident locations is needed to evaluate the role that facilities play in Pinellas County's accident experience. There is no doubt, however, that pedestrian safety, and certainly their pleasure and convenience, could be greatly enhanced through well-designed roadways with pedestrian considerations.

SECTION 6:

Recommendations for Ongoing Activities

In the introduction of this chapter, it was stated that information gained from local accident analysis would be useful in the development of engineering countermeasures for pedestrian accidents. It is clear from the analysis conducted by Applied Science Associates, Inc. in their statewide Florida Pedestrian System Plan that most accidents can be

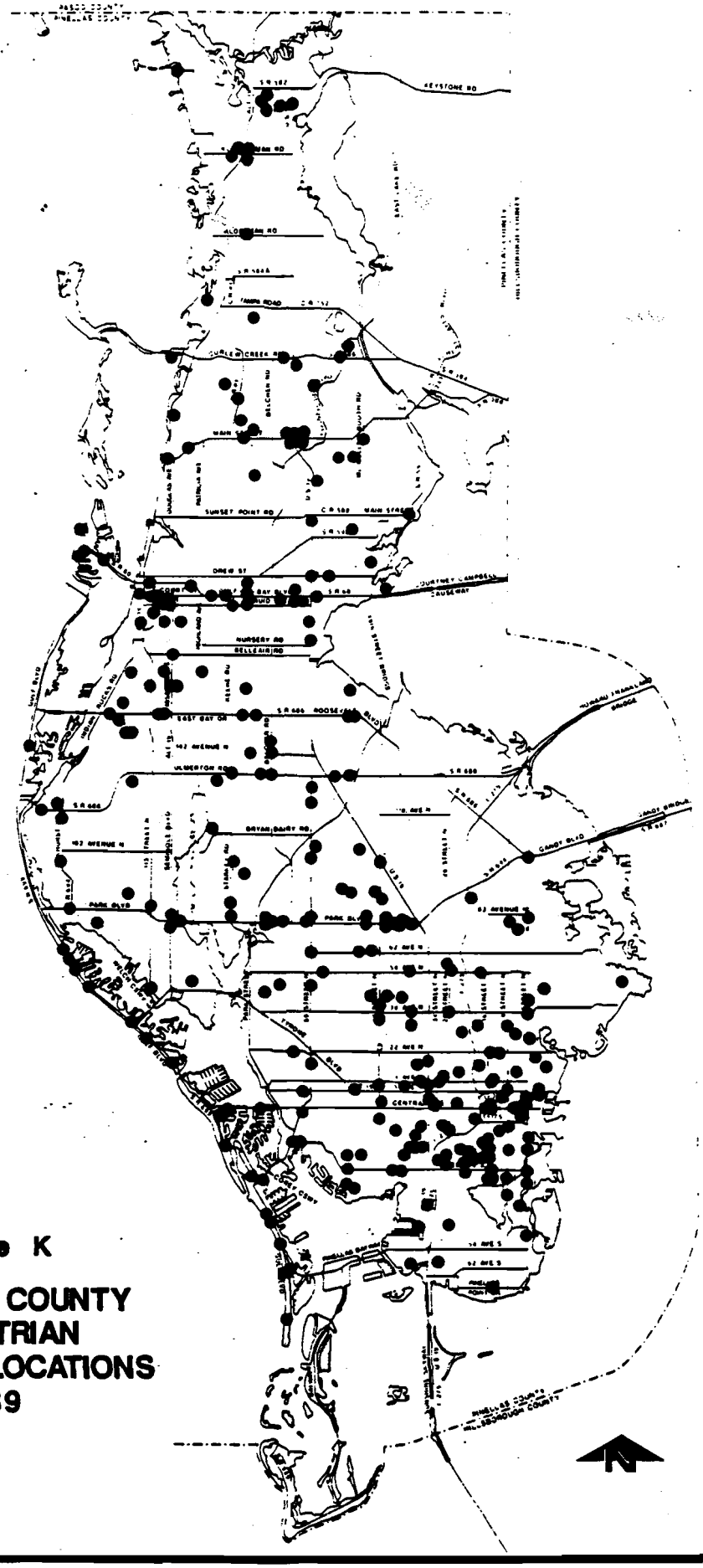


Figure K

PINELLAS COUNTY PEDESTRIAN ACCIDENT LOCATIONS 1989

avoided through behavioral changes on the part of the pedestrians and motorists, and that physical conditions have little bearing on the situation. Local accident analysis supports this observation. The accident experience in Pinellas County seems heavily related to a pronounced lack of pedestrian understanding of safe walking techniques and potential hazards. This theory is further documented by the fact that so few motorists are cited by law enforcement personnel when involved in a pedestrian/motorist accident when the pedestrian is at fault. The problem, however, is further compounded by a lack of motorist understanding of potential pedestrian/motor vehicle conflicts.

Based upon the prominent types of pedestrian accidents that occur in Pinellas County, it is recommended that:

1) Grade school and adult level pedestrian educational programs be established that emphasize the following accident countermeasures:

   a) Walking against traffic.

   b) Use of lighting equipment and safety devices, such as flashlights, and retro reflective clothes for night walking, and bright clothing for daytime walking.

   c) Safe roadway entry.

   d) Recognition of and coping with visual obstructions.

   e) Elimination of invalid assumptions that often lead to accidents, (for example, when a motorist looks straight at a pedestrian, he or she always sees that pedestrian.)

   f) Selective search and threat detection and the recognition of hazard cues.

g) Increasing pedestrian responsibility skills such as scanning for right turning vehicles on red at intersections, crossing at intersections, and making safety searches when exiting a vehicle/bus.

2) Analysis of Pinellas County accident data be performed on an annual basis in order to document trends in accident occurrence.

risk of disability or death through a preventable injury than through all childhood diseases combined. Leading all other injuries to children is being hit by a car, either as a pedestrian or as a bicyclist.[3]

Pedestrian accident statistics for both children and adults have led to articulation of pedestrian safety issues and brought close scrutiny of the accident problem. As a result, traditional approaches to pedestrian safety education have come under fire, with the conclusion that children have been done a great disservice by irrelevant and often erroneous safety courses, and by the insufficient amount of instruction provided. The average Florida child receives about $1 worth of traffic safety skills education between birth and age 15. (vs. $45,000 in K-12 for basic schooling, and $200 for Drivers Education, when taken).[4] For children 9-13, 95% of accidents are due to improper behavior due to lack of training. These include dart out, walking with traffic, sudden midblock dash, and multiple threat situations where the pedestrian enters the roadway in front of standing/stopped traffic and the driver's vision was block by the standing traffic.

An examination of safety programs across the United States found many to be based upon faulty assumptions. Historically, it has been thought that a few hours of teaching traffic rules is enough. Numerous other nations have proven this concept wrong. They can prevent up to 80% of these injuries with a modest investment in time and money that is quickly paid back to society.

[3]"The Unprotected Child in Traffic," Injury Facts (FDOT Bicycle & Pedestrian Program)

[4]Ibid

Another faulty assumption is that sidewalks are a safe and common choice for children to play in the beginning years. However, there are substantial risks involved. Parked cars, shrubs, and buildings hide pedestrians. Backing accidents and the frequent non-detection of children are major causes for concern.

Simple observation shows that walking provides children with a form of independent transportation. Their play activity is now recognized as essential to physical, mental, and social development. Walking/running, as a major ingredient in play activity, should be viewed as behavior requiring traffic education both on the part of the children and motorists.

Programs should track safety not only in the classroom, but also in real life scenarios. Experience shows that the two concepts are intertwined. Driver education courses, for example, must include both classroom instruction and behind-the-wheel training in real world situations. By contrast, pedestrian education is often presented in terms of learning traffic laws. As a result, minimal attention is devoted to basic skills and hazard avoidance techniques, and children find themselves ill-prepared to deal with traffic.

The limited amount of time devoted to pedestrian safety education is as much a problem as poorly designed educational materials. Children throughout Pinellas County, as well as statewide, commonly receive virtually no instruction, and if any is presented, it is extremely brief and usually incorporated into the bicycle education curriculum at Grades 1 or 2.

The Sheriff's Department and the Police Departments of Clearwater, Dunedin, St. Petersburg and Largo have long-standing bicycle programs, but a minimal pedestrian safety program. For instance, the Sheriff's Office does not provide for any pedestrian safety in their current bicycle program which targets second graders in unincorporated schools. St. Petersburg Police Department gives one 1-hour lesson a year to only first grades; Dunedin Police Department gives one 55-minute lesson to

first and second grades each year; Largo Police Department does nothing specific; and Clearwater Police Department has a successful "Officer Friendly" program in its 12th year targeted towards pre-school and K-1 that specifically addresses pedestrian safety. They visit approximately 52 pre-schools in the Clearwater area twice a year and 17 elementary schools three times a year.

In classroom situations involving K through 5, pedestrian safety is limited as opposed to other programs devoted to child abuse, drugs, water safety, bicycle safety, and other concerns.

Obviously, police efforts are severely limited by personnel and time constraints and the necessity of addressing many other worthwhile topics. Local accident data indicate that the occasional and limited instruction provided each year by law enforcement personnel is not enough to prepare children for the realities of traffic.

Problems with Law Enforcement

In a nationwide study of the causes of pedestrian accidents, research found that in virtually all pedestrian/motorist accidents, the pedestrians made a conscious choice to operate under their own set of traffic principles. In doing so, these pedestrians failed to assume responsibility for their own welfare and the lives of others as well. Children often observe and mimic adults and their disregard for the law.

Yet police involvement in pedestrian safety has not extended from the schools to the streets. Police officers, on the whole, literally look the other way when they see pedestrian traffic infractions. Police resources are severely limited and there is not much community support for pedestrian enforcement campaigns when violent crime and drug use is on the rise. They may feel, too, that it looks bad to be "harassing" pedestrians instead of arresting criminals and other serious violators of the law. Police officers who would consider issuing citations often face departments lacking the facilities, staff and policies needed to process pedestrian violators. Thus, lack of public and professional support and outmoded ideas combine to make pedestrian law enforcement a low priority for police.

Current Approaches to Education and Enforcement

Traffic safety education, including pedestrian safety principles and practices, should be required for all school-aged children aged five through 13 according to recommendations by the Florida Department of Transportation. Walking is an essential mode of transportation for school-aged children. Yet, because of the low priority accorded this mode of transportation and the demands placed on classroom time, traffic safety education is an oft-neglected curriculum element in most schools.

The current amount of instruction - one hour per year for Grade 1 and/or Grade 2 - is not adequate to prepare children to operate independently in traffic. Yet the fact that it is given such minimal attention by the schools conveys the impression that there is very little to be worried about. Unfortunately the accident data portray a very different picture.

The leading cause of death of children in the United States and in Florida, Pinellas County included, is motor vehicle accidents. Because of efforts requiring that children be restrained when riding in an automobile, the majority of children killed, are killed while walking or bicycling. The critical skills and knowledge needed to safely negotiate in traffic must be conveyed to these children in a serious educational program involving classroom instruction and actual practice.

An important side effect of early traffic safety education effort is that children will be better prepared to assume the responsibilities of motor vehicle operators and perhaps less likely become traffic statistics during their first driving years.

With the formation of the Pedestrian Transportation Advisory Committee in July, 1990, Pinellas County started to expand their involvement in pedestrian transportation education and law enforcement. PTAC representatives from the Sheriff's Office, Police Departments, AAA, National Safety Council, and concerned citizens were instrumental in taking a look at the pedestrian issues in Pinellas County.

As a result of a grant from the Governor's Energy Office, a joint participation agreement with the Florida Department of Transportation and the Pinellas Metropolitan Planning Organization was executed in February 1990, and a full-time bicycle/pedestrian program planner's position was implemented.

The MPO pedestrian program planner initiated the first collection and analysis of countywide pedestrian accident reports that occurred in 1989, and that portion of the 1990 reports as they became available. These reports, forwarded through the Florida Department of Transportation from the Department of Highway Safety and Motor Vehicles in Tallahassee, were reviewed and coded using the Manual Accident Typing for Pedestrian Accidents, published by the U.S. Department of Transportation. Reports revealed that investigating officers often neglected to issue citations to pedestrians who were in obvious violation of the law and, consequently, concluded that pedestrians and motorists alike operate on the assumption that pedestrians are not serious participants in the traffic system.

Adult Pedestrian Education

Since the onset of the senior population growth in Pinellas County during the past decade, accidents involving the elderly have mounted. The percentage of pedestrians 65 years of age and older involved in 1989 pedestrian/motor vehicle accidents exceeded that of any other age classification in both injuries and fatalities. In fact, according to the Walk Alert Program Guide, people 65 and older account for 12 percent of our total population, yet they make up 22 percent of all pedestrian fatalities in this country. People in this age group are not necessarily involved in more pedestrian accidents, but because of physical vulnerabilities, they are much more likely to die from injuries that occur in these accidents.

While older people are generally law-abiding, they are often involved in pedestrian accidents when they are crossing with a "Walk" signal at an intersection. More than half of these accidents involve a turning vehicle. Alcohol use is usually not a factor in pedestrian accidents involving the elderly. However, there are physical changes which cause the elderly to have more difficulty maneuvering in traffic.

These include decreased vision, hearing, peripheral vision, and mobility, and slower reaction time.

Reaching the adult population with information about pedestrian safety is important to ensure their welfare.

Following are some recommended priority messages for use in educational programs for older adults:

*Search behavior

- Always stop at the curb/edge of the road before entering the street or roadway.
- Always look left-right-left whenever and where ever you cross. And keep on looking to the left-right-left until you have crossed the street safely.
- Watch out for cars backing out of parking lot spaces and driveways.

*Being seen (conspicuity)

- Wear brightly colored clothing during the day to be more conspicuous to drivers; drab or gray outer garments make you less visible.
- Walking at night is much more dangerous for the pedestrian than walking during the day. When older adults are out after dark, they should carry a flashlight and wear retro-reflective materials that outline the human form to enhance their conspicuity.

*Traffic signs, signals and markings

- Green lights, "Walk" signals and crosswalks do not mean that it is safe to cross. Rather, these traffic control devices mean to stop and look to the left-right-left to be sure that it is safe to cross.

- A flashing "Don't Walk" signal means to wait to cross the street if you have not already started across. If you are in the street already, continue walking and complete the cross.
- When sidewalks are not available, walk facing traffic and keep as far to the left of the roadway as possible.
- Midblock crossings (with proper search behavior) are acceptable on residential streets.
- Do not jaywalk (cross midblock) on heavily traveled streets.

*Disabled vehicle

- If your vehicle becomes disabled while you are driving, pull off the roadway as far as possible and activate your emergency flashers.
- Get your passengers and yourself out of your vehicle on the side away from traffic and move as far as possible away from traffic.
- If you seek help, walk facing traffic as far to the left of the roadway as possible so traffic can see you and you can see approaching traffic.
- The best protection for a pedestrian at night is to use a flashlight and wear outer garments with retro-reflective material on them so that approaching traffic can see you.

*Intersections

- Walk directly across the street; do not walk diagonally.
- Scan over the shoulder to check for turning vehicles in additional to looking left-right-left.

*Visual screens

- If you cannot see what may be coming because your vision is blocked by something, go out to where you can see (e.g., outside edge of a parked car), stop and look left-right-left all over again.
- The above message is applicable for all visual-screen situations (e.g., multiple threat, school/commercial bus stop).

*Commercial bus stop

- Remain on the sidewalk or shoulder after getting off the bus.
- Never cross behind the bus. Wait for a walk signal before crossing. When there is no walk signal, cross after the bus has passed.
- When crossing with a walk signal in front of the bus, stop at the far edge of stopped bus. Look left-right-left for approaching vehicles.

Reaching Older Adults

Offering a pedestrian educational safety program is accomplished through written materials (i.e. handouts, booklets), presentations combined with other agenda activities, involving people in discussions, and role playing. The educational process should concentrate on the positives, focusing on what people can do rather than on their vulnerabilities.

Many nutrition sites - where the elderly go to senior centers daily for low-cost, government-subsidized meals - sponsor educational programs in conjunction with the meals. Additionally, churches, recreation centers, retirement homes and villages, senior centers, and national organizational meetings such as AARP and the National Council of Senior Citizens are excellent sites for reaching older adults.

Motorist Education

A need for motorist education was indicated by the results of the accident analysis in Chapter III. Currently, one hour of pedestrian safety is incorporated into the driver's education curriculum that's taught in our high schools throughout Pinellas County. In addition, questions relating to pedestrian safety are included on the drivers license exam and the Florida Handbook for Drivers addresses pedestrian issues for motorists.

Incorporating pedestrian safety education into existing driver training programs has numerous advantages. Driver education students are a captive audience with a strong motivation to learn based upon

their desire to obtain driving privileges. Students benefit from face-to-face interaction with teachers and have sufficient time to learn. Finally, education can be imparted before undesirable behavior becomes entrenched, and such programs are implemented at relatively low cost.

Recommendations for Ongoing Activities

Education programs should be offered to people of all ages from pre-school children to senior adults. Education programs should stress the benefits of walking while emphasizing the safe behaviors that must be followed.

From the preceding discussions, it becomes apparent that there are many entities within Pinellas County, in addition to the Metropolitan Planning Organization, that are involved or should be involved in pedestrian safety.

It is the MPO's role with their PTAC, to promote pedestrian safety by facilitating the implementation of worthwhile programs by the appropriate agencies. The following objectives and actions are directed toward this task:

1. Objective: Improve pedestrian-related skills and knowledge.

    a. Work with school officials to bring a full-pledged pedestrian safety program into the curriculum of Pinellas County schools.

    b. Upgrade existing pedestrian education programs presently offered on a limited basis by law enforcement agencies.

    c. Organize a PTAC speaker's bureau to inform PTA's in school districts adopting in-school training programs of the merits of the approach and the need for parental reinforcement of program principles.

d. Make information available to parents to acquaint them with the types of accidents which involve young pedestrians, and give them ideas on what preventative steps they can take.

e. Develop pamphlets on effective pedestrian procedures in formats suitable for K through 12 grades.

f. Develop an information flyer on the educational needs of grade school-age pedestrians and distribute to schools, teachers, and parent organizations.

2. Objective: To improve pedestrian behavior and reduce accidents.

a. Encourage all law enforcement agencies to take advantage of educational materials available from the State Bicycle/ Pedestrian Coordinator's Office for training their officers to enforce pedestrian laws.

b. To continue site review responsibilities for incorporation of sidewalks in all new roadways and reconstruction projects.

c. Encourage law enforcement to enforce pre-existing laws for "jaywalking", which appears to be number one cause of pedestrian related accidents in Pinellas County as well as nationwide.

d. As an alternative to monetary fines, urge the courts to allow for pedestrian education courses at violator's expense much like the present defensive driving school system.

CHAPTER V

ENGINEERING

Introduction and Chapter Overview

When people think of a pedestrian plan, they commonly envision a document containing a map of designated sidewalk networks with a list of needed improvements and cost estimates for those improvements. The document usually consists of the project details and may include the results of sidewalk or road surveys of potential routes and questionnaires to pedestrians in the community about trip purposes, popular destinations, and preferred routes. This chapter does contain a sidewalk inventory of this type. While sidewalk funding is an expensive proposition, Pinellas County is further ahead than other Florida communities which have plans sitting on the shelf without the life-blood implementation money. This is not to say Pinellas County has an unlimited sidewalk funding program. Five hundred thousand dollars ($500,000) a year is placed in the annual budget for routes to school sidewalk construction, and it is not nearly enough to cover the need. There are far more sidewalk requests than funds. With the limited funds, each request is reviewed for urgency, necessity, and/or desirability to establish priority. (See Appendix "B").

In 1984, state and county officials decided to expand pedestrian considerations in the design of state and county transportation projects. Over a period of years, as roads are widened or whenever rework is done, sidewalks are given consideration. The process will be slow and incremental, but it will occur. This approach is based upon the concept that pedestrian transportation is to be integrated into the transportation system. The idyllic concept to elevate pedestrian transportation to that equal of bicycles and motor vehicles requires

adherence to traffic laws by pedestrians. For this reason, the education of pedestrians and motorists, and enforcement of traffic laws by law enforcement receives equal, if not greater, emphasis than engineering strategies in this document.

Previous planning efforts within Pinellas County are summarized in the first section of this chapter, along with the sidewalk projects for FY 90-91 within Pinellas County and some positive direction being taken by several communities throughout the County. The second part of the chapter presents a short critique of traditional engineering measures used to accommodate pedestrians. The next section addresses roadway design, followed by a brief discussion on school zones and the School Safety Committee.

The final section contains recommendations for future actions.

Summary of Previous Local Planning Efforts

Planning for sidewalk facilities in Pinellas County occurred long before the 1984 legislation action. County government and virtually all of Pinellas County's municipalities have incorporated non-motorized transportation elements into their comprehensive plans (see Appendix "C"). All of the local plans contain a standard hierarchy of recommended pedestrian transportation which generally states that: "The provision of motorized and non-motorized vehicle parking and the provision of bicycle and pedestrian ways shall be regulated." Additionally, most of the local plans provide review of all proposed development and redevelopment in site plans for the accommodation of bicycle and pedestrian traffic needs. Municipalities are beginning to initiate bicycle and/or pedestrian plans. Some are as follows:

a) City of St. Petersburg shall develop a bicycle and pedestrian plan by 1992;

b) City of Tarpon Springs shall develop a comprehensive sidewalk program by 1990 which addresses proper maintenance and construction of new sidewalks;

c) By 1995, the city of Belleair Bluffs shall provide crosswalks and sidewalks on roadways of high pedestrian usage, as needed;

d) City of Oldsmar shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate. One (1) mile of bicycle and pedestrian ways shall be provided by 1995.

e) City of North Redington Beach shall provide for a safe, convenient, and efficient non-motorized transportation system by 1993.

Communities Sidewalk Focus

Because of limited sidewalk funds within community budgets, many are directing their focus to specific projects.

The city of Clearwater employs a field crew with a concrete truck on a year-round basis to replace and repair sidewalks. The FY 89-90 budget was $25,000. There is an additional $50,000 budgeted for sidewalk development within city property and dedicated park land. Clearwater's school contracts are nearing completion, but the focus of their program for FY 90-91 is a 6' wide, concrete, multi-purpose facility connecting in and about the new Center Foundation on Belcher Road.

The FY 89-90 budget in Largo's Capital Improvement Program encompasses correction of hazardous routes, school areas, and various citizen requests. The lack of right-of-way and permitting issues pose the most difficulty for Largo as it continues to build out.

In 1980-81, Largo initiated the "Safe School Walking Route" program for Anona, Mildred Helms, and Ponce de Leon schools. Today, all sidewalks around schools are in place. The focus of their funds for FY 90-91 will cover the following three projects:

East side of Highland - Rosery to E. Bay Drive
West side of Seminole - 8th Ave. S.W. to 20th Terr. S.W.
South side of Wilcox-Vonn Road to 137th Ave.

Largo implemented a 5-year plan in 1975 and, as a result of this plan, all city maintained streets have sidewalk projects complete.

The city of Dunedin allocates $80,000 in FY 90-91 for sidewalk repairs and maintenance. An additional $14,500 is budgeted for new sidewalks. The older sections of the community have sidewalks in place and all new development requires incorporation of sidewalk facilities. The Garrison Jones Elementary School on Garrison Road is a major sidewalk project for this community in FY 90-91.

The city of Pinellas Park budgets $75,000 for installation and replacement of sidewalks in FY 90-91. Their major focus is on link improvements and fill-ins on major and minor arterials. Their 5-year sidewalk plan is updated annually and directs major roadways built to urban systems to have sidewalks and ramps. Additionally, the city of Pinellas Park allocates $12,000 a year for the integration of a Ramp Program to retrofit existing sidewalks along Park Boulevard at intersections from 40th St. to 66th Street North for wheelchair and handicap accessibility.

The city of St. Petersburg Bay Plaza Redevelopment Project includes sidewalk renovation. In the retail core bound by 1st Avenue North to 1 Avenue South and Beach Drive to 3rd Street South, the installation of paver brick sidewalks, pedestrian street lighting, aesthetically pleasing landscaping and sidewalk seating will invite pedestrian activity and encourage citizen interactions of those attending stadium events. City ordinances require property owners to maintain sidewalks adjacent to their property. The city also maintains the following seven sidewalk programs: Individual Basis, Full Block Minimum, Partial Block, Full Payment, School Sidewalk Program, Hexagon Block Sidewalk areas, and City Repair of Extremely Hazardous Sidewalks.

Pinellas County Sidewalk Focus

Pinellas County's sidewalk program, incorporated in the 6-year Capital Improvement Program for 1990/91 to 1995/96, is almost entirely in support of the "School Sidewalk Program" (see Figure L). A $500,000 a year account for new funding for construction of new sidewalks servicing

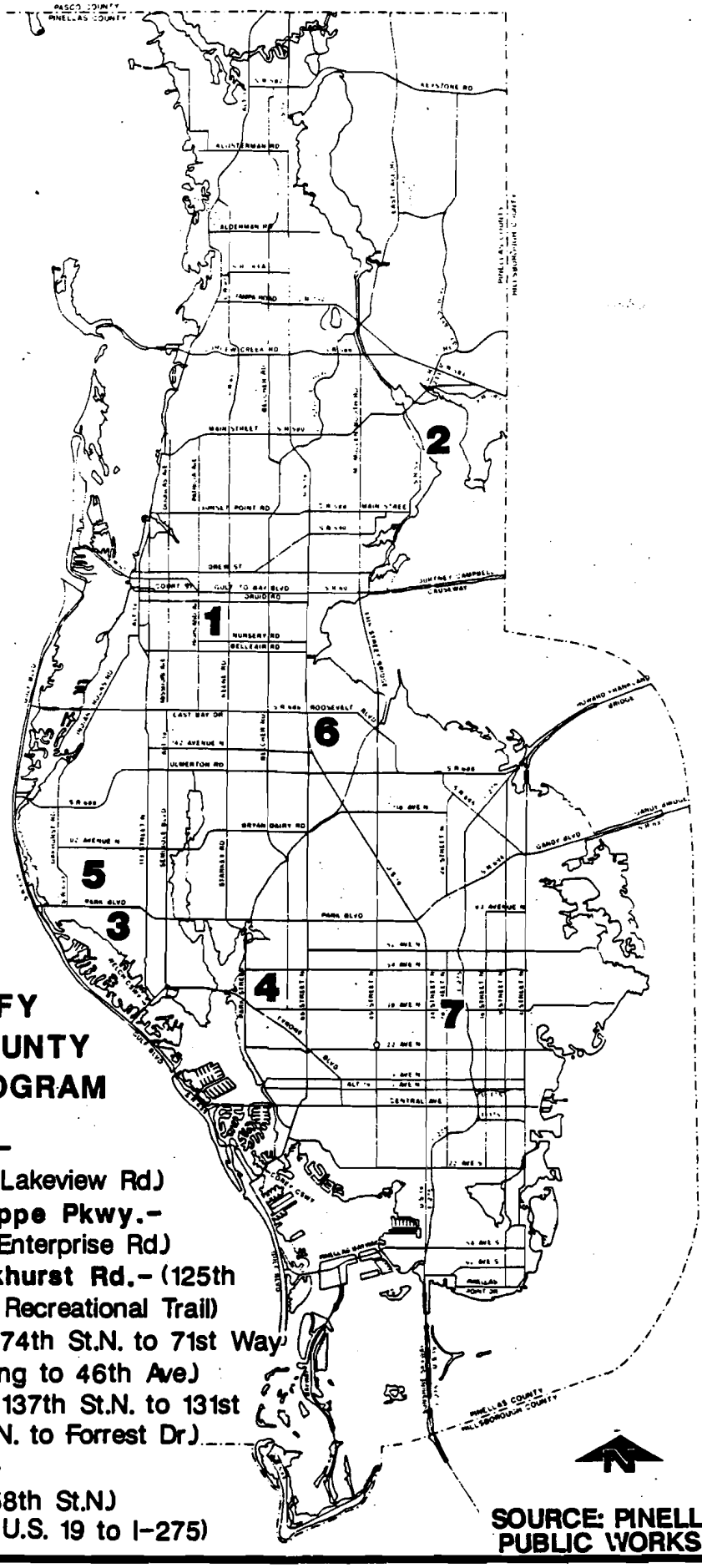
Table 14

SIDEWALKS

MPC

1989	**15th STREET (Palm Harbor):** from Ohio Ave. to Nebraska Ave.-		
	Sidewalk Cost-	$ 20,596.18	
	Drainage Cost-	300.00	
	Total-	**$ 20,896.18**	Distance: **2234** feet.
	91st STREET N.: from 76th Ave.N. to 78th Place N.-		
	Sidewalk Cost-	**$ 16,865.95**	Distance **1104** feet.
	131st Street N.: from 110th Ave.N. to 114th Ave.N. & 116th Ave.N. to Walsingham Rd.-		
	Sidewalk Cost-	$ 21,320.83	
	Drainage Cost-	62,879.28	
	Total-	**$ 84,200.11**	Distance **2269** feet.
1988	**Five projects:** 58th Street N.,66th Street N., Starkey Rd.N., Starkey Rd.S.,& Curlew Creek Rd.-		
	Sidewalk Cost-	$138,991.90	
	Drainage Cost-	423,159.37	
	Total-	**$562,151.27**	Distance **15,060** feet.
	28th Street N.: from 40th Ave.N. to 46th Ave.N.-		
	Sidewalk Cost-	$ 23,216.97	
	Drainage Cost-	13,350.37	
	Total-	**$ 36,567.34**	Distance **1878** feet.
	Oak Street: from Whitney Rd. to North Rd.-		
	Sidewalk Cost-	**$ 23,739.77**	Distance **2582** feet.
	Belleair Rd.: from Belcher Rd. to Havana Dr.-		
	Sidewalk Cost-	$ 26,136.46	
	Drainage Cost-	16,875.19	
	Total-	**$ 43,011.65**	Distance **1865** feet.
	86th Ave.N.: from Starkey Rd. to West End-		
	Sidewalk Cost-	$ 32,200.37	
	Drainage Cost-	2,676.82	
	Total-	**$ 34,877.19**	Distance **3278** feet.
1987	**Starkey Rd.:** from 100th Ave.N. to north of Bardmoor Pl.N.: -		
	Sidewalk Cost-	$ 56,502.27	
	Drainage Cost-	16,743.94	
	Total-	**$ 73,246.21**	Distance **2385** feet.
	Various school sidewalks in 1987:		
	Sidewalk Cost	$130,772.32	
	Drainage Cost-	45,022.92	
	Total-	**$175,795.24**	Distance **14590** feet.

SOURCE: PINELLAS COUNTY PUBLIC WORKS DEPARTMENT



1990/1991 FY PINELLAS COUNTY SIDEWALK PROGRAM

1. **Highland Ave.-** (Nursery Rd. to Lakeview Rd.)
2. **S.R. 590/Philippe Pkwy.-** (Fairview St. to Enterprise Rd.)
3. **74th Ave./Oakhurst Rd.-** (125th St.N. to Pinellas Recreational Trail)
4. **46th Ave.N.-**(74th St.N. to 71st Way N. & 74th-existing to 46th Ave.)
5. **94th Ave.N.-**(137th St.N. to 131st St.N. & 131st St.N. to Forrest Dr.)
6. **150th Ave.N.-** (62nd St.N. to 58th St.N.)
7. **38th Ave.N.-**(U.S. 19 to I-275)

SOURCE: PINELLAS COUNTY PUBLIC WORKS DEPARTMENT

Figure L

schools along county maintained roads represents the majority portion of total funds ($2,500,000) of the $4,225,450 budgeted over the next six years.

All public roadways in Pinellas County should include sidewalks on both sides of the roadway if it is above the classification of a minor collector. The lack of well-designed sidewalks pose the most significant detriment to safe and practical modes of pedestrian transportation. All other roads should have a sidewalk on at least one side.

ITE SURVEY

In January, 1991, Pinellas County participated in the Institute of Transportation Engineers' nationwide survey evaluating and summarizing current policies, guidelines and practices relating to the design of pedestrian facilities (see Figure M). Using FDOT "Green Book" and/or "Roadway and Traffic Design Standards" the Engineering Department acknowledges existing policies in all 19 pedestrian topic areas listed and indicated additional guidance needed for four specific areas, those being pedestrian refuge islands, grade separated crossings, neighborhood traffic control measures, and bus stop locations.

Information on agency policies and guidelines relative to school traffic control and devices, grade separated crossings, and bus stop locations are also detailed in Figure M.

CURRENT STATE-OF-THE-ART

Traffic Operations

Post, Buckley, Schuh & Jernigan, Inc. and Dr. John Fruin, P.E., in a final report dated March, 1988, researched current developments in the "State-of-the-Art" pertaining to pedestrian design standards. The first group of pedestrian design standards addresses the field typically identified as traffic operations. This category relates to the features most affected by operational characteristics pertaining to pedestrian treatments. The second group addresses roadway design.

ITE COMMITTEE 5A-5: DESIGN OF PEDESTRIAN FACILITIES

STATE-OF-THE-PRACTICE SURVEY

BACKGROUND INFORMATION

1. State/City/County name: Pinellas County

2. Person responding: Gene E. Jordan, P.E. Title: Director, Public Works

   Address: 440 Court Street, Clearwater, FL 34616 Phone Number (813) 462-3185

   Would you like a summary of the survey results? Yes ___ No ___

3. Size of P.C. jurisdiction (square miles): 280 sq.mi.

4. Population of P.C. jurisdiction (1989): 856,704 Metropolitan Population: _____

5. Total street miles maintained (1989): 1460

6. Total annual motor vehicle accidents reported (1989): 26,000

7. Total annual pedestrian accidents (1989): 486

8. The following is a list of pedestrian design topics that Committee 5A-5 is studying. For each topic, does your agency have:

   (1) Formal policies/guidelines/practices (please attach)
   (2) Need improved policies/guidelines/practices

PEDESTRIAN TOPIC AREAS	* (1) EXISTING POLICIES	(2) NEED ADDED GUIDANCE
(A) Handicapped Facilities	X	
(B) Sidewalks and Paths	X	
(C) Signalization	X	
(D) Pedestrian Refuge Islands		X
(E) Crosswalks and Stop Lines	X	
(F) Barriers	X	
(G) Right-Turn-on-Red	X	
(H) School Practices	X	
(I) Grade Separated Crossings		X
(J) Street Closures	X	
(K) Neighborhood Traffic Control Measures		X
(L) Left-Turn Phasing	X	
(M) Bus Stop Locations		X
(N) Curb Parking Restrictions	X	
(O) Highway Signing and Pavement Stencils	X	
(P) Roadway Lighting	X	
(Q) Expressway Ramps	X	
(R) Construction Zone Facilities	X	
(S) Intersection Design	X	

* Use FDOT "Green Book" &/or "Roadway And Traffic Design Standards"

Figure M

2. Does your agency have a policy/guideline on the use of flashing devices for school crossings? Yes ___ No X. If yes, please describe.

(A) How many flashers are used: 20

(B) What are the criteria for use: Proximity to school & request of sheriff

(C) What types are used. (School speed limits/general warning): School speed limit (15 MPH)

(D) Are they pedestrian actuated, fixed time, or key operated: 17 Key operated, 3 Time clock

(E) Have there been any studies to evaluate their effectiveness (motorists behavior, accidents, etc.): Yes ___ No X. If yes, please attach.

3. Does your agency conduct annual field reviews of school traffic control devices? Yes ___ No X.

GRADE SEPARATED CROSSINGS

1. Does your agency have a policy for installation of grade separated pedestrian crossings? Yes ___ No X. If yes, please attach. _____

2. (A) How many grade separated crossings are within your jurisdiction? 4 existing, 2 proposed There are 4 facilities on state roadways.
There are 2 proposed over county roadways.

(B) How many of these are primarily for school children? N/A

(C) How many are (1) overpasses all ; (2) underpasses _____ .

(D) Who pays for their installation (i.e. your agency, business, school districts)? Our agency would if on our facility.

(E) What percentage of crossing pedestrians typically use the grade separated crossing (based on crossing studies)? Unknown

(F) What measures are used to direct or "capture" pedestrians at grade separated crossings? Fences

(G) Have other problems (vandalism to cars, crime, difficulty with wheel chairs/bikes, etc.) occurred at these crossings? Please describe.
N/A - however fence enclosure is part of design criteria to protect pedestrians from falling onto roadway & to reduce the ability of large objects from being thrown and or dropped from overpass.

** BUS STOP LOCATIONS

1. What percent of your bus stops are:
(A) Near-side ___ (B) Far-side 90% (C) Midblock 90%.*

2. Do you have a program of converting near-side bus stops to far-side?
Yes X No ___.

3. How does your transit/bus operating agency view the far side bus stop with respect to their service? It is felt that far-side stops are more inviting to users by improving their safety & the safety of the motoring public. Especially regarding mid-block stop which allows the bus to pull in closer to the roadside, eliminating the protrusion of the rear end of the bus from conflict with thru traffic.

*These are stops located outside city limits on rural type roadways.

** Information provided by Mr. Mike Siebel, Director of Operations, PSTA

SOURCE: PINELLAS COUNTY PUBLIC WORKS DEPARTMENT

a Stop Location

The location of bus stops on the far-side, or after, the intersection, rather than the near side, or before, is a relatively inexpensive means of improving pedestrian safety. This is shown in Figure N. Near-side operations can conflict with turning vehicles and other intersection traffic, causing waiting passengers to block corner pedestrian movement. Far-side bus operations result in both unobstructed pedestrian/driver sight lines and safer crossing behavior.

b. Crosswalk and Pavement Markings

Several studies, most notably by Bruce Herms of the city of San Diego, have shown that marked crosswalks can be more hazardous than unmarked crosswalks. It appears this results from a lack of caution used by pedestrians in falsely thinking a marked crosswalk provides more safety.

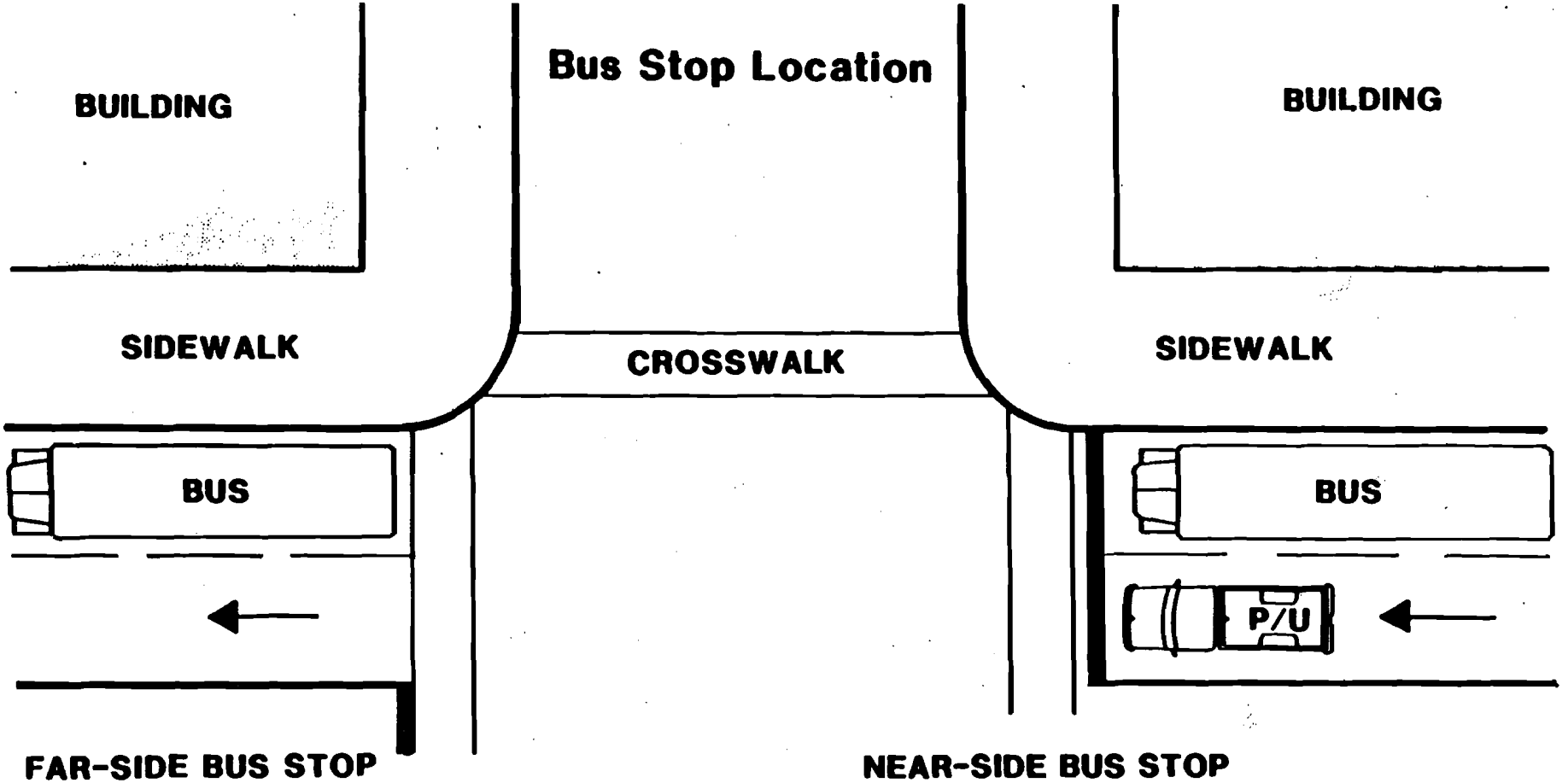
Recent research by Charles V. Zegeer, Staff Association, Highway Safety Research Center, University of North Carolina, indicates that offsetting vehicle stop bars helps to prevent right turning vehicles from blocking crosswalks in order to gain adequate sight distance. By offsetting the left and through stop bars back from the right turn lane stop bar, the right turning driver can see around adjacent vehicles and prepare to make a right-turn-on-red without obstructing the crosswalk. As a further example, the City of Seattle, Washington uses a "zig-zag lane" longitudinal line marking on high speed or obscured approaches to crosswalks to alert motorist of potential conflicts with pedestrians.

c. One-Way Streets

One-way street system conversion has been found to result in significant urban pedestrian accident reductions. One-way street systems generally increase vehicle speeds and street capacities while reducing pedestrian/motorist conflicts because of reduced turning conflicts. Pedestrian-vehicle turn conflicts are

MPO

BUS STOP LOCATIONS



FAR-SIDE BUS STOP

- IMPROVED PEDESTRIAN / DRIVER SIGHT LINES
- BUS CLEARS INTERSECTION AND TURNING VEHICLE CONFLICTS
- WAITING AND LOADING CLEAR OF CORNER

NEAR-SIDE BUS STOP

- PEDESTRIAN / DRIVER SIGHT LINES OBSTRUCTED
- BUS CONFLICTS WITH TURNING VEHICLES, OTHER INTERSECTION TRAFFIC
- WAITING PASSENGERS CAN OBSTRUCT CORNER.

SOURCE: FDOT

Figure N
-71-

eliminated on two sides of every intersection in a one-way grid network (except for RTOR), in effect giving the pedestrian an exclusive crossing phase on these sides. Figure O shows a diagram of one-way intersection. This characteristic should be considered when designating safe crossing locations for school access and other special user populations.

d. Pedestrian Signalization Warrants

The existing pedestrian warrant or design standard for installing traffic signals requires a minimum of 100 pedestrians/hour for any four hours; or 190 pedestrians or more during any one hour crossing a major street at an intersection or mid-block location during an average day. (See Appendix "E", 4C-5 Warrant 3).

The current warrants are based on five criteria. These criteria are: appropriateness and reasonableness, complexity, data requirements, flexibility, and acceptability.

e. Traffic Signal and Timing

Studies have found that accident rates were significantly higher for intersections with pedestrian signal heads. Accident rates were also significantly lower for intersections with exclusive pedestrian signal phasings and indications than locations with concurrent pedestrian-vehicle phasing and heads, or without pedestrian signal heads. Early pedestrian release phasing requires a separate signal head for the right turn vehicle movement. This concept begins the walk interval and terminates it prior to the onset of the protected right turn movement. This phasing operation produces reduced delay for pedestrians but increase overall intersection vehicle delay. The late release pedestrian signal phasing delays the display of WALK signals for a predetermined time in order to clear queued right turn traffic. This alternative increases the right turn lane capacity, however, total delay is increased for low vehicular volume intersections. When the curb lane is mostly right turn

MPO

ONE-WAY STREET CONFLICTS

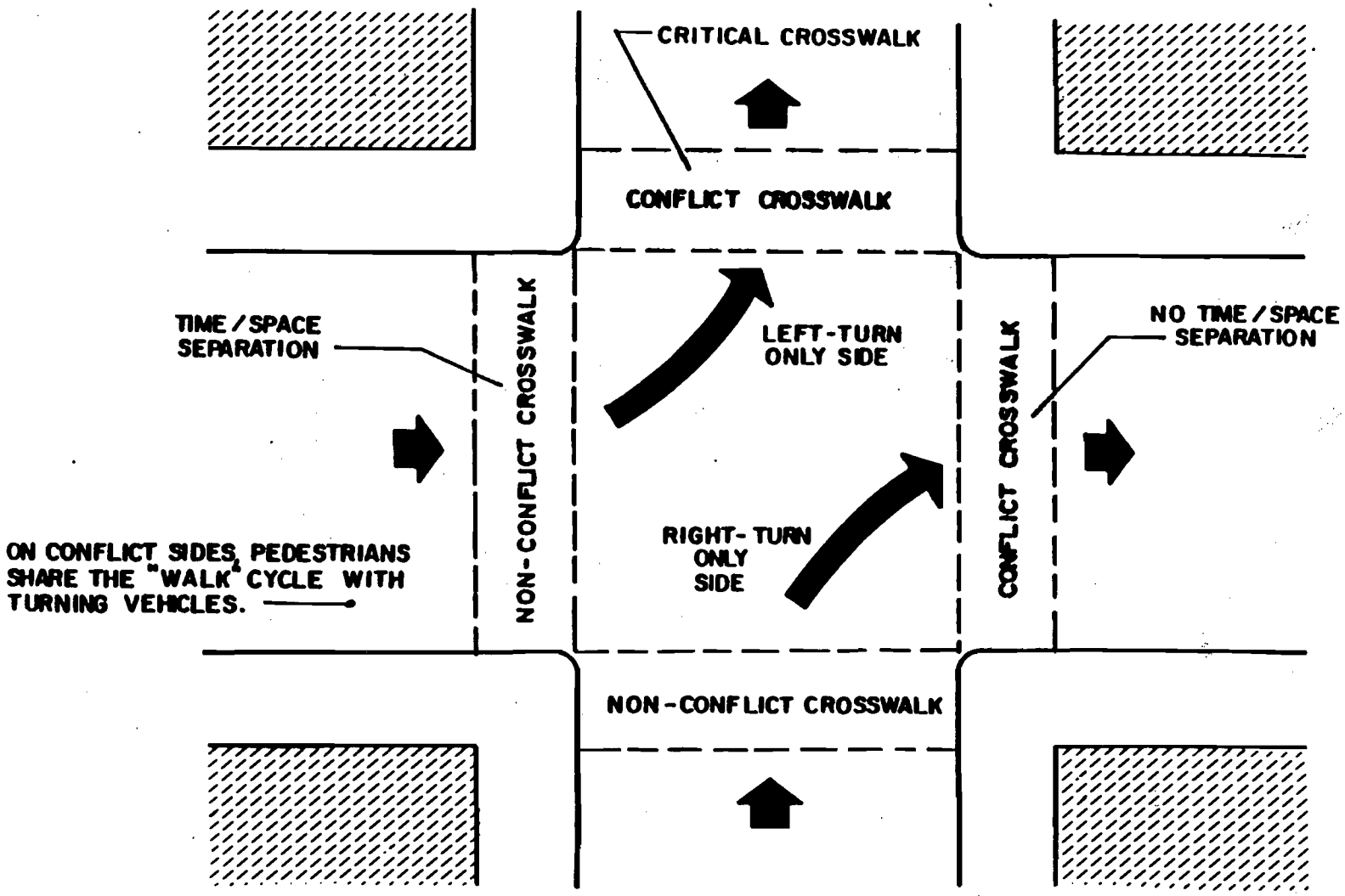


Figure O
- 73 -

SOURCE: FDOT

traffic and the pedestrian volume is heavy, total delay is usually reduced (see Appendix "F", 4D-7).

f. Pedestrian Signal Actuation

Research on pedestrian signal actuation has centered primarily around two goals. They are: improve user awareness as to the purpose of the push-buttons, and improve the accessibility and visibility of push-button devices (see Appendix "F", 4B-29). The effectiveness of the signs used in conjunction with push-buttons has been found to be highly dependent on their placement. Such signs are more effective if the sign indicates to the pedestrian which push-button is for a particular approach. Currently, this type of sign is not approved by the MUTCD, but it is used in Florida (see Figure P). Several signs have been tested through the sponsorship of FHWA to more clearly advise the driver and pedestrian of right-of-way. A warning sign "Yield To Pedestrians When Turning" was found to be effective for reducing right turn vehicle/pedestrian conflicts. This sign is currently used in Broward County, but is not approved for use by the MUTCD. The warning sign "Pedestrians Watch For Turning Vehicles" was also found to be effective in reducing right turn vehicle conflicts.

g. Street Closings

Street closings may ultimately take the form of urban pedestrian malls, auto restricted zones, residential neighborhoods designed to restrict vehicle movement, or temporary closings for special events, school access and play streets. Street closings can improve pedestrian safety by providing horizontal separation of pedestrians and vehicles, or by limiting speed, traffic volumes and vehicle/pedestrian conflicts. Besides improving the street environment and pedestrian safety, the auto restricted zone is considered an important strategy for promoting the use of public transit, reducing air pollution and total vehicle-miles traveled.

PUSH - BUTTON SIGNING

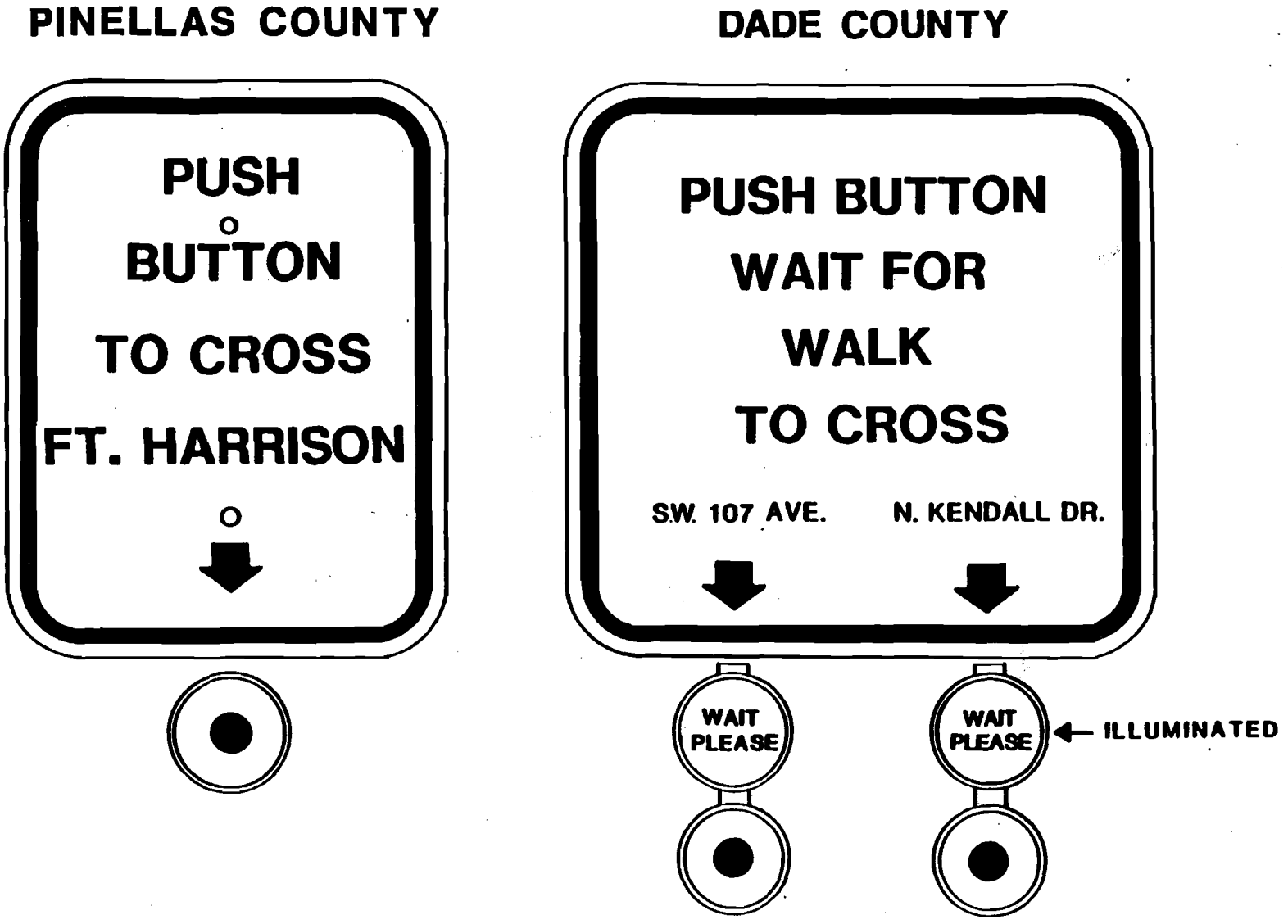


Figure P
-75-

SOURCE: FDOT

h. Turn Prohibitions

The RTOR law has been controversial since its adoption. Advocates have argued that RTOR reduces congestion, and that accidents due to RTOR are minimal. Opponents state that RTOR is hazardous to pedestrians and bicyclists, particularly children, elderly and the handicapped. Accident studies have not been able to substantiate either argument. Certainly it appears that the potential for pedestrian accidents is increased with RTOR. Using the 1985 Highway Capacity Manual techniques, an increase in pedestrian volume from 50 to 200 per hour results in only a 6% to 14% reduction in vehicular capacity for the right turn maneuver.

Roadway Design

Well-planned, thought-out design features can guide the pedestrian to the safest point. Designing roadway facilities to enhance pedestrian activities are addressed in the following topics:

A. Crossing Barriers

Crossing barriers can take three forms in order to prevent or channelize pedestrian movements. They are:

* Median Barriers - Typically chainlink fences used in median with or without guard rail to restrict pedestrian travel to intersections. For aesthetic and safety reasons, the use of median barriers should be minimized since they can limit or inhibit emergency service access across a median.

* Sidewalk Barriers - located at the curbside to discourage movements. This type of barrier includes fences, handrails, shrubbery, bollards, chains, street furniture, and planters.

* Roadside Barriers - High fences or walls, typically along the right-of-way, used primarily for controlled access facilities, bridges, and high speed roadways where there is little horizontal separation between the driving lanes and the sidewalk. Schools,

high pedestrian volume generators, and downtown business districts are good areas for barriers because they reduce "dart-out" pedestrian accidents.

Barriers are least effective where:

* Inadequate number of pedestrian crossings are provided;
* On-street parking limits the effectiveness of barriers;
* Barriers create sight distance obstructions.

All of Pinellas County's 24 municipalities urge removal of hazardous objects, installation of curb-cuts and ramps, and other safety measures. In this way, sidewalks can be made somewhat safer for use by young children, and perhaps elderly tricyclists. While this type of sidewalk bicycle use is appropriate, sidewalks should not be signed as bicycle routes.

The preceding discussion emphasizes that the provision of sidewalk facilities can create rather than alleviate unsafe pedestrian conditions, if such facilities are poorly designed and located. This situation has assumed added significance in recent years, with the erosion of the concept of sovereign immunity. At one time government entities, like kings, could not be sued by individuals for personal injury or negligence. This no longer holds true. Governments can now be held liable for failure to correct hazardous conditions on sidewalk facilities that are the result of poor design or even lack of adequate maintenance. Municipalities within Pinellas County have removed, or are in the process of removing, hazardous conditions in order to avoid liability. For the ultimate safety of the pedestrian, it is better for governments to do nothing than to provide inferior facilities.

Facilities for the Handicapped

The term "handicapped" encompasses not only people with sensory and physical impairments, but also includes young children and those with poor depth perception, but otherwise normal vision, or anyone else who is

unable to judge the distance, speed, and closing times of approaching vehicles.

The following measures are successfully applied where greater numbers of these special persons warrant:

* Curb Ramps - Curb cuts which provide mobility for those using wheelchairs and can benefit others using carriages, cyclists, and persons with joint impairments.

* Special Signals - Extended "WALK" lights actuated by push-buttons, used where larger populations of senior adults are present to allow more crossing time. Audible bells, buzzers, horns or clicking sounds have been installed to aid the blind; however, because of critical reliance by the blind on hearing, these signals can mask the important sounds of vehicular traffic. Because the blind are known to have added difficulties with RTOR vehicles, turn restrictions should be considered where there is greater crossing activity by blind persons.

* Special Signs - "CAUTION DEAF CHILD" signs is an example of a special type sign that can be used in places which such handicapped persons frequent. In addition, braille maps, instructions, and warnings posted near intersections are used where needed.

* Crosswalk Guidestrips - Raised markings which can assist the blind in staying within the crosswalks.

* Overpass and Underpass Ramps - Grade separation is recognized as the most positive form of pedestrian protection. However, to access to these structures, those in wheelchairs and others with limited stamina require accessible ramps with intermediate level rest areas.

* Accessible Walking Routes - Handicapped-accessible networks and school access routes require, in addition to wheelchair curb

ramps, adequate sidewalk widths, regular pavement surfaces, and freedom from overhanging obstructions and other impediments which could confuse and potentially injure the blind, or limit the mobility of others.

* Grade Separation - Grade separations can reduce pedestrian and vehicle delay, increase highway capacity and reduce pedestrian accidents. Candidate locations include large schools, shopping centers, recreational areas, and activity centers adjacent to arterials which form barriers to residential "generators," particularly where the arterial is wide and traffic volumes and operating speeds are high. Ideally, the separation structure should be on the normal path of pedestrian movement, increase convenience due to elimination of crossing delays and conflicts, and not require the pedestrian to divert long distances.

* Safety Islands - Safety islands should be considered for streets wider than four moving traffic lanes, with medium to heavy traffic volumes and high operating speeds. Raised safety islands with cut-throughs are preferred to islands defined only be pavement markings.

* Sidewalks - Sidewalks improve pedestrian safety particularly for young children and nighttime pedestrians. Design considerations include land use activity, pavement materials, need for vertical or rolled type curbing, the width of the sidewalk, and the setback distance of the sidewalk from the street. Concrete paving is preferred over asphalt or block paving because it maintains its walking surface integrity longer. Pinellas County adheres to the recommended practice of placing sidewalks two feet from right-of-way and uses five foot widths for sidewalks separated from curb by buffer strip.

* Street Lighting - Improves driver's visibility of the pedestrian at night, particularly under bridge structures and buildings. Roadway lighting is most effective on internal streets with high traffic volumes, intersections, areas of high nighttime pedestrian

activity, high crime areas, residential streets with high volumes of children or elderly, and high nighttime accident locations.

School Zones

Pinellas County's School Safety Committee's ultimate goal is to develop and distribute a "Safest Route to School" map for each facility and is in support of AAA's Route to School project. This includes the engineering studies for crosswalks, signs, pavement markings and traffic control devices. To bridge the gap on school safety matters, which have evolved over the past decade as a result of Pinellas County's growth, the School Safety Committee has been reorganized and now meets on a regular quarterly scheduled basis. This committee provides the channel for eliminating conflicting priorities and allows for the development of improved policies and procedures. Through this committee's ability to facilitate inter-agency cooperation and the coordination of resources from the Florida Department of Transportation, the Pinellas County Sheriff's Office, the Pinellas County School Board, and our Traffic Engineering Department, pressing situations can be resolved in an efficient and timely manner.

One of the most pressing and controversial problems with which traffic engineering and enforcement agencies are faced concerns the safety of children walking to and from school. The question facing these agencies is how can the school traffic safety problem be best handled with a minimum of friction between vehicles and pedestrians and with maximum effectiveness.

One study provided an investigation of the effect of school speed zone flashers in Kentucky. It was found that school zones with crossing guards and police enforcement were far more effective than those where the school flashers were used alone.

State Statute 234.061 specifies that the local school board shall determine the walking zone for each school.

Recommendations for Ongoing Activities

1. Objective: Assure that major and minor arterials provide appropriately for pedestrian needs.

a. Adopt policies which support current Florida Department of Transportation design standards for incorporating pedestrian considerations in the design of county and local roads.

b. Review new and rework roadway construction projects to assure that pedestrian transportation needs are adequately considered.

c. Review accident reports in the area to identify high accident locations which could indicate possible design deficiencies.

d. Identify existing gaps between facilities which are adequately designed to accommodate pedestrian activity; and provide for systematic filling of these gaps based upon safety considerations and priorities related to potential demand.

e. Continue to develop a prioritized program for incorporation of needed facilities into the Capital Improvement Program.

f. Identify activity areas for pedestrian transportation and provide for pedestrian-actuated crossing signals.

g. Provide public and private sector planning/engineering agencies with the latest Florida DOT and AASHTO standards, and encourage review of site plans, capital improvement programs, etc. for pedestrian transportation.

h. The School Board shall be required to participate in pedestrian transportation, that is, pay for pedestrian safety improvement along routes that students are required to walk.

i. Promote changes in the law that would require school districts to provide bus transportation when safe walking routes are unavailable according to FDOT & AASHTO Standards as follows: (1) Grades K-3 for 1/4 mile; (2) Grades 4-6, a 1/2 mile; (3) 7-9, 1-mile; (4) 10-12, 2-miles.

j. Promote changes in the law that would require school districts to comply with FDOT & AASHTO in review of hazardous walk routes (i.e. FS 234 & FS 235).

CHAPTER VI
ENCOURAGEMENT

INTRODUCTION AND CHAPTER OVERVIEW:

The objective of encouragement activities is to promote the increased public awareness of pedestrian transportation and to advocate the consideration of pedestrians in on-going programs and projects. Encouraging walking as a mode of transportation may seem unnecessary since walking is the most basic form of exercise. Yet walking has not reached its full potential as a means of transportation in Pinellas County or in Florida as a whole. Table 15 lists numerous factors which may affect walking for the pedestrian populace.

TABLE 15
FACTORS ASSOCIATED WITH WALKING

Physical Environment	Social Environment	Transportation Alternatives	Population Characteristics
Size and density of urban areas affecting trip	Use of time affecting trip purpose	Types	Income
Climate	Crime	Convenience	Age
Terrain	Peer group support for walking	Cost	Physical condition
Hours of daylight		Comfort	Knowledge & perception of transportation options
Air quality		Safety	Trip Mode preferences
Safety hazards		Visibility	Valuation of time
Traffic volumes			Valuation of exercise
Existing facilities for walking			Fear of accidents
Aesthetics			

High traffic speeds, high traffic volumes, lack of sidewalks, and perceptions of high accident risks are major deterrents to pedestrian use. Parking restrictions in downtown areas and suburban employment centers to discourage automobile traffic and to provide an environment more conducive to walking are encouraged to assist in pedestrian transportation. Additionally, walking and mass transit make an ideal transportation combination when conditions are right, and can encourage pedestrian transportation. Encouraging pedestrian access to mass transit stations reduces the need for automobile parking.

Previous chapters describe engineering, education and enforcement programs that would counteract these deterrents and encourage walking if implemented. Designing transportation facilities with pedestrians in mind will improve walking conditions and perceptions of safety. Through education programs, children and adults will learn to become more responsible pedestrians and, as a result, create less conflict with motorists. Actual reductions in accidents will occur also through the police enforcement of safer pedestrian habits.

Construction of the Pinellas Trail will provide tremendous safe recreational opportunities for walking enthusiasts, as well as the casual stroller. And when completed in 1992, the Trail will serve as a pro-active solution to pedestrian transportation since it links communities and business districts in many areas. The Pinellas Trail is a viable means for encouraging pedestrian transportation. It will be used for work, school, and social trips.

In addition to the projects mentioned above, other actions will be needed to fully integrate pedestrians into the countywide transportation system. This chapter addresses the provision of incentive programs, land use considerations, and safety agency incentives. The final section contains recommendations for further action in these areas by the MPO.

INCENTIVE PROGRAMS

Metropolitan governments throughout the United States, including Florida, are recognizing walking as a viable commuting alternative. For

this reason, there is a wide-spread effort to elevate the pedestrian mode of transportation to that of motor vehicles and bicycles. There is a growing awareness that pedestrian commuting should be promoted in order to work toward the goals of improving air quality, reducing traffic congestion, and reaping the health benefits of exercise. The cities of Seattle (Washington), Milwaukee (Wisconsin) and San Diego (California) were forerunners in developing a basic framework for pedestrian encouragement programs during the 1970's. Since that time, communities throughout the United States have begun pedestrian safety programs.

The city of Seattle, Washington retrofitted their sidewalks for wheelchair ramps throughout the city. The city also adopted a standard construction plan and locational criteria for their placement at intersection corners. Television spots are used quite extensively to transmit traffic-related information in order to identify and encourage the needs of its populace. There are attempts to have a kindergarten "Walk Day" where parents will show new students the route for them to take to school in an effort to encourage safe walking.

In Milwaukee, Wisconsin local community organizations and the Safety Commission are involved in awards and incentive programs for students serving as safety cadets. Recognition luncheons for representative students of award-winning schools are held by four community organizations. Other incentives to keep cadets on the job are a mid-year trip to Wisconsin Dells, attendance at a Milwaukee Brewers game, award certificates and ballpoint pens distributed to students at the schools.

San Diego, California, uses special incentive awards and activities similar to those used in Milwaukee. These include scholarships, summer camp, Christmas barbecue picnics, special outings to pro-baseball/pro-football games, and the zoo. The effectiveness of this program can be measured by the fact that in 42 years since its inception there have been no fatalities and only two child injuries in a school crossing.

SAFETY AGENCY INCENTIVES

The Pedestrian Protection Program sponsored by the American Automobile Association is now entering its 52nd year. Concern for the pedestrian -- often a forgotten area in the traffic safety field -- has been a major effort with AAA. In 1939, 107 cities nationwide submitted reports on their pedestrian program activities and casualty records. By 1990, over 2,700 cities participated and returned detailed forms. Cities are classified and divided into groups according to their population. Each is reviewed and evaluated in two major categories: (1) pedestrian death and injury record; (2) the extent of municipal pedestrian safety activities in seven program areas (8) accident records, legislation, enforcement, traffic engineering, safety program coordination, school traffic safety, public information and education. Four Pinellas County communities were winners of 1990 AAA Pedestrian Protection Program Awards. These awards were based on 1989 statistics. The city of Largo, compared with 198 other cities nationwide with populations of 50,000 to 100,000, won a special citation for Outstanding Pedestrian Accident Record Award (SPCAR). Dunedin, South Pasadena and Treasure Island received Pedestrian Safety Citation Awards (PSC), which are issued to cities that ~~are~~ have under 10 years without a pedestrian fatality.

School's Open Program, Halloween Safety, Traffic Safety Poster Contest, and School Safety Patrol are additional incentive programs offered by AAA.

CHAPTER VII

CONCLUSIONS

This chapter summarizes the conclusions, objectives, and actions developed in the preceding chapters.

A. ENVIRONMENT

Objective: Provide adequate separation of pedestrians and vehicles on all public roadways.

a. Provide a safe walking environment for pedestrians that does not require pedestrians to share space with vehicles (except for controlled crossing paths).

b. Provide pedestrians the support facilities necessary which permits pedestrian travel that is safe, efficient, and free of barriers that impede or prohibit pedestrian travel.

c. Maximize opportunities to develop pedestrian facilities for recreational purposes.

d. Review accident reports in the area to identify high accident locations which could indicate possible design deficiencies.

e. Identify existing gaps between facilities which are adequately designed to accommodate pedestrian activity; and provide for systematic filling of these gaps based upon safety considerations and priorities related to potential demand.

f. Continue to develop a prioritized program for incorporation of needed facilities into the Capital Improvement Program.

g. Identify activity areas for pedestrian transportation and provide for pedestrian-actuated crossing signals.

h. Provide public and private sector planning/engineering agencies with the latest Florida DOT and AASHTO standards, and encourage review of site plans, capital improvement programs, etc. for pedestrian transportation.

i. Require the School Board to participate in pedestrian transportation by paying for pedestrian safety improvements along routes that students are required to walk.

j. Promote changes in the law that would require school districts to provide bus transportation when safe walking routes are unavailable according to FDOT & AASHTO standards and distances exceed the following: (1) Grades K-3, 1/4 mile; (2) Grades 4-6, 1/2 mile; (3) 7-9, 1-mile; (4) 10-12, 2-miles.

k. Promote changes in the law that would require school districts to comply with FDOT & AASHTO in review of hazardous walk routes (i.e. FS 234 & FS 235).

B. SAFETY

1. Pinellas is the second smallest county in Florida with 280 square miles, but the most densely populated of all counties in the state with 3,000 persons per square mile. Our pedestrian accident injuries and fatalities rank sixth statewide and most likely will continue to increase.

2. The accident experience in Pinellas County seems heavily related to potential hazards and a pronounced lack of behavioral factors on the part of the pedestrian .

3. The problem is compounded by a lack of motorist understanding of potential pedestrian/motor vehicle conflicts (i.e. right-turns-on red).

4. Pedestrian safety is also being compromised by a serious number of accidents occurring not in the roadway (i.e. sidewalks, parking lots, driveways).

Based on the types and quantities of pedestrian accidents occurring in Pinellas County and analysis of the effectiveness of pedestrian accident prevention programs in other areas, the MPO will:

1. Encourage the establishment of grade school and adult level pedestrian educational programs that emphasize recognized accident counter-measures.

2. Continue the analysis of Pinellas County accident data on an annual basis in order to document trends in accident occurrence.

C. EDUCATION AND ENFORCEMENT

1. Conventional pedestrian safety education has many shortcomings.

2. There is a pervasive lack of pedestrian law enforcement throughout Pinellas County.

3. The "Florida Pedestrian Training Program" developed by the State Bicycle/Pedestrian Office can provide effective in-school pedestrian safety education.

In recognition of the MPO's responsibility to promote pedestrian safety by facilitating the implementation of worthwhile programs by the appropriate agencies, the MPO will work toward the following objectives and actions:

1. Objective: Improve pedestrian-related skills and knowledge.

   a. Work with school officials to bring the Florida Pedestrian Training Program into the kindergarten, first, and second grade curricula of schools throughout Pinellas County.

b. Organize a PTAC Speaker's bureau to inform PTA's in school districts adopting in-school training programs of the merits of the approach and the need for parental reinforcement of program principles.

c. Make information available to parents to acquaint them with the types of accidents which involve young pedestrians and give them ideas on what preventative steps they can take.

d. Develop pamphlets on effective pedestrian skills in formats suitable for junior high and high school students.

e. Develop an information flyer on the educational needs of grade school-age pedestrians and distribute to schools, teachers, and parent organizations.

f. Enlist the support of local newspapers to run articles on the materials from the K-2 grade education program once it is underway.

2. Objective: Improve motorist awareness of pedestrians.

a. Develop pedestrian related segments which could be included in the Driver's Education Program.

b. Encourage the inclusion of pedestrian safety questions on state driver's license examinations.

D. ENGINEERING

1. Pedestrian facilities must be well designed and used in the appropriate situation in order to enhance pedestrian safety.

2. Safe use of roadway facilities requires pedestrians to adhere to traffic laws and to acquire the skills necessary for safe pedestrian transportation.

3. The incorporation of pedestrian considerations into the existing road system will be a gradual and incremental process.

In view of the impact engineering decisions have on motorist/pedestrian conflicts and in consideration of currently accepted facility design standards, the MPO will:

1. Objective: Assure that major and minor arterials provide appropriately for pedestrian needs.

   a. Adopt policies which support current Florida Department of Transportation design standards for incorporating bicycle/pedestrian considerations in the design of county and local roads.

   b. Review new roadway construction projects to assure that pedestrian transportation needs are adequately considered.

   c. Adopt an Annual Sidewalk Construction Contract that provides for construction of sidewalks in areas that meet the criteria:

      1. Sidewalk construction would not require changes to existing drainage systems, ditches, or pipe culverts;

      2. Adequate right-of-way exists;

      3. The proposed area of construction is not environmentally protected (wetlands, etc.)

      4. Contract would include basic design criteria (i.e. size, material specifications, alignment & provisions for coordinating with utilities in the event of unavoidable conflicts.

5. The contract would establish a per square foot cost for sidewalk construction (i.e. maintenance of traffic, grading, sodding, replacement or relocation of sprinkler systems) and all other costs incidental to sidewalk construction.

d. Review accident records in the area to identify high accident locations which could indicate possible design deficiencies.

e. Identify existing gaps between facilities, which are adequately designed to accommodate pedestrian activity; and provide for systematic filling of these gaps based upon safety considerations and priorities related to potential demand.

f. Develop a prioritized program for incorporation of needed facilities identified into the Capital Improvement Program.

g. Identify activity areas for pedestrian transportation and provide for pedestrian actuated-crossing signals.

h. Provide public and private sector planning/engineering agencies with the latest Florida DOT and AASHTO standards, and encourage review of site plans, Capital Improvement Programs, etc. for pedestrian transportation.

i. Establish with state government a multi-disciplinary (e.g. local Planning, Transit, ROW, Legal, Design & Engineering, Maintenance, Operations, etc.) Bicycle/Pedestrian and Transit Oversight Committee to provide for bicycle, pedestrian and transit considerations in the design, construction, reconstruction, maintenance, operation and management of the transportation system, pursuant to Chapters 335.065 and 334.044 F.S.

Additionally, the exceptions to the inclusion of bicycle and pedestrian amenities are limited to those stated in

chapter 335.065(b), and for purposes of public record, the project file must include all reports, meeting minutes, and correspondence.

j. Provide walk-to-school routes for all schools in all municipalities of Pinellas County. Each jurisdiction shall provide the routes to school from their areas to the Pedestrian Transportation Advisory Committee, beginning with selected routes for new schools and for rezoned schools as redistricting occurs.

k. All public roadways in Pinellas County should include sidewalks on both sides of the roadway if it is above the classification of a minor collector. All other roads should have a sidewalk on at least one side.

E. ENCOURAGEMENT

In consideration of the wide spectrum of benefits anticipated as a result of pedestrian encouragement activities, the MPO will:

1. Objective: Promote public awareness of pedestrian transportation and advocate the consideration of pedestrians in on-going programs and projects:

   a. Develop and distribute pamphlets outlining the benefits of walking.

   b. Provide recreation and police departments, service organizations, community groups, etc. with a list of available pedestrian films, pamphlets, and educational materials.

2. Objective: Promote incentives for walking.

   a. Incorporate a growing awareness that walking should be

promoted in order to work toward goals of improving air quality, reducing traffic congestion, and to reap the benefits of exercise.

APPENDIX A

DEMOGRAPHIC, CLIMATIC, TOPOGRAPHIC CHARACTERISTICS

DEMOGRAPHIC, CLIMATIC, TOPOGRAPHIC CHARACTERISTICS

This study considers all of Pinellas County peninsula, including the incorporated areas. In terms of land area, the County comprises 280 square miles and is the second smallest county in the state. This includes the incorporated areas of St. Petersburg and Clearwater. The total estimated population of Pinellas County as of April, 1988 was 839,891. This makes Pinellas County the third most populous in the state. However, Pinellas County with 3,000 people per square miles is the most densely populated county followed by Broward and Dade counties.

The largest City is St. Petersburg with a population of 248,700. Clearwater, the second largest city, is located in the upper western portion of the County and has a population of 101,800. The majority of the population resides within the incorporated areas. An additional 30,000 persons are estimated to be seasonal residents. The rapid development and urbanization which has occurred over the last few decades has resulted in nearly 85% of developable land built-out.

The County is 39 miles from northernmost to southernmost and 16 miles from east to west at the widest points. There is approximately 400 miles of shoreline. There is only one major river, the Anclote, whose southern tip extends into Pinellas County. There are many lakes throughout the entire County.

The terrain is largely flat with only small hills in some areas. The highest elevation is 80 feet. The absence of significant elevation change serves as an encouragement to walking.

The climate in Pinellas County allows for walking twelve months a year. During the winter months, the temperatures occasionally dip below that which the average walker finds comfortable. The spring and fall are nearly ideal with warm temperatures, low rainfall and low humidity. The summer weather combines several deterrents to walking: temperatures in the 90's with high humidity and frequent afternoon thunderstorms.

The warm climate, coastal location, and abundance of recreational activities have historically attracted tourists and retirees to the area. Additionally, within the County there are a number of major employment centers. These include the St. Petersburg and Clearwater central business districts, the Gateway, Countryside, Bayside, Tarpon Springs areas, and the St. Petersburg-Clearwater Airport. Other major trip attractors are the University of South Florida, the five campuses of St. Petersburg Junior College, Derby Lane, as well as regional shopping malls.

The medium age of the population is 45.8, which is higher than the national figure. Children 14 years and younger comprised 14% of the 1988 population. Persons 65 or over comprised 25% of the population. Especially for youths and senior citizens, walking can and does serve many transportation needs.

Due to age, disability, income and other reasons, not everyone has an automobile. Certainly transit does not serve everyone, or all needs of those it does reach. These are a few reasons that walking should be encouraged as a viable alternative in our transportation planning. Most land use and transportation planning has been done with only the motor vehicle in mind. This has created an automobile-dependent population.

Florida is expected to become the third most populated state by the year 2000. The state currently ranks fourth. Pinellas County is currently experiencing accelerated growth which is expected to continue. Between 1989 and the year 2000, growth projections for population call for an increase of 15% from 855,427 to 983,444.

This growth is a problem for walking in the area because traffic on every road in the County can be expected to increase. Traffic congestion is already a major problem facing this area. The positive aspect of this situation is that with growth, road improvements can be expected to come more rapidly than might otherwise be expected. As roads are improved, they can and must be cost effectively constructed in a manner that more safely and efficiently accommodates the transportation needs of all users, including pedestrians.

APPENDIX B

PINELLAS COUNTY SIDEWALK
90/91 DESIGN PROJECTS

PROJECTS NOW IN DESIGN PROCESS (IN HOUSE)

74th Ave. (N Side) 125th St. – Seminole Cty Park – 3500'
94th Ave. N. (S Side) 137th St. – 131st St. & 131st St./94th Ave to Forest Dr.
S.R. 590 Philippe Parkway/Enterprise Rd. – Fairview St.
Highland Ave./Nursery – Lakeview
150th Ave. (S Side) 63rd St.– East & Mockingbird Lane West 1100'
Lealman Area Sidewalks
Crystal Beach Sidewalks

LIST OF SIDEWALK PROJECTS FOR 90/91

RECOMMENDED IN HOUSE PROJECTS

125th St./82nd Ave. – Park Blvd. – 1200'	Desirable
CR 95 (N Side)/Langstaff Dr. – School – 1280'	Urgent
& West Lake Rd. – School	Urgent
Orange St.(W Side)/Lagoon Dr.– Pennsylvania Ave–1400'	None
Starkey Rd.(W Side)/78th Ave – Park Blvd – 1300'	None

IN HOUSE PROJECTS THAT COULD BE CONSTRUCTED BY HIGHWAY DEPT WITH MINIMAL PLANS PREPARATION

54th Ave (N Side)/100th Way – 350' West	Necessary
119th St (W Side) Taylor Lake Cir. – 140' South	Urgent
Lancaster Rd (S Side)/Belcher Rd. – Existing 400'	Desirable
Ridge Rd (W Side)/91st Terr – 93rd Ave – 720'	Necessary

RECOMMENDED FOLLOWING PROJECTS BE GIVEN TO CONSULTANTS:

NORTH COUNTY

CR 1 (W Side)/Virginia Ave – Tampa Rd – 1300'	No Priority
Curlew Rd (S Side)/Spanish Pines Subd – Belcher – 800'	Urgent
West Lake Rd (W Side) Tampa Rd – Jeffrey Dr – 1350'	Urgent
& Trailwood Dr – Tampa Rd	Urgent

BELLEAIR

Objective 1.3

The provision of motorized and non-motorized vehicle parking, and the provision of bicycle and pedestrian ways, shall be regulated.

Policy 1.3.2.

The Town shall mark bicycle and pedestrian ways connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4.

The Town shall provide crosswalks on roadways of high pedestrian usage.

Policy 1.3.5.

The property owners are responsible for the installation, maintenance and repair of sidewalks contiguous to their property, in accordance with Town Code of Ordinances.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

BELLEAIR BEACH

The demographic and physical characteristics of the City have not resulted in an identified or perceived need to develop a sophisticated internal bicycle/pedestrian system. The absence of neighborhood retail, commercial or office uses further limits pedestrian and bicycle traffic within the City except for primarily recreational purposes. Certainly, the greatest potential conflict between vehicular and bicycle/pedestrian traffic occurs along Gulf and Causeway Boulevards. However, the future improvement of Gulf Boulevard will provide for sidewalks which will separate pedestrian and vehicular traffic.

BELLEAIR BLUFFS

Objective 1.3.

As an ongoing objective, the provision of motorized and non-motorized vehicle parking, and the provision of bicycle and pedestrian ways shall be regulated.

Policy 1.3.2.

The City shall continue to study the possibility of providing bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4.

By 1995, the City shall provide crosswalks and sidewalks on roadways of high pedestrian usage, as needed.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

BELLEAIR SHORE

There is no provisions for pedestrians in their Traffic Circulation Element.

CLEARWATER

5. **GOAL - THE TRAFFIC CIRCULATION SYSTEM SHALL PROVIDE FOR THE SAFE AND EFFICIENT DELIVERY OF PEOPLE AND GOODS BY VEHICLE, BICYCLE, AND PEDESTRIAN MODES.**

DUNEDIN

II.4 PEDESTRIAN & BICYCLE CIRCULATION

In many areas, the City's pedestrian sidewalk network is either inadequate or in a deteriorated condition. Recognition of a safe pedestrian walking environment separated from road traffic remains a paramount part of the Street Division's function. This has become increasingly important from a public liability standpoint under the current personal injury "lawsuit" atmosphere.

Dunedin has approximately 25,000 lineal feet of sidewalk in need of repair, as of the adoption of this element, which ranges from isolated sections to entire neighborhood blocks. Sidewalks that are cracked, tilted or otherwise deteriorated, have resulted from tree-root intrusion, vehicle encroachment, improper materials or construction, and GTE/Florida Power damage. The repair of defective walks is costing the City $9.00 per foot to repair. Prior to October 1, 1987, the Street Division had expended $121,000 for improvement with an additional $240,000 requested in the F.Y.87 to F.Y.92 Capital Project Request.

There are three principal types of bicycle ways: (1) joint use pedestrian and bike sidewalks, (2) street bike lanes, and (3)

dedicated bicycle rights-of-way. The Florida Department of Transportation's policy is to give special emphasis to the needs of bicyclists and pedestrians alike in the design of roadway systems unless such is not feasible due to inadequate right-of-way conditions.

The previous policy of using sidewalks for pedestrian and bicycle use has been reversed. The potential of conflicts and resulting injuries has put government at liability risk.

GULFPORT

Policy 2.11

The City shall prepare and implement an adequate bikeway and pedestrian plan which connects schools, residential areas, recreational facilities and commercial areas.

Policy 3.3

The City shall require that new or reconstruction roadway projects consider the needs of bicycle and pedestrian traffic.

INDIAN ROCKS BEACH

Objective 1.3.

The provision of motorized and non-motorized vehicle parking and the provision of bicycle and pedestrian ways shall be regulated.

Policy 1.3.2

The City, County, and State shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4

The City, County, and State shall provide crosswalks and sidewalks on roadways of high pedestrian usage in their jurisdiction.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.2

The City shall identify and encourage the use of bicycle and pedestrian ways.

Policy 1.5.3

The City shall review all proposed development and redevelopment for its accommodation of bicycle and pedestrian traffic needs.

INDIAN SHORES

Objective 1.3

As an ongoing objective, the provision of motorized and non-motorized vehicle parking, and the provision of bicycle and pedestrian ways shall be regulated.

Policy 1.3.2

The Town shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4

The Town shall provide crosswalks and sidewalks on roadways of high pedestrian usage.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.3

The Town shall review all proposed development and redevelopment for the site plan accommodation of bicycle and pedestrian traffic needs.

KENNETH CITY

Objective 1.3

The provision of motorized and non-motorized vehicle parking, and the provision of bicycle and pedestrian ways shall be regulated.

Policy 1.3.2

The Town shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas.

Policy 1.3.4

The Town shall provide crosswalks and sidewalks on roadways of high pedestrian usage, as determined by the Town.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.1

The Town shall review all proposed development and redevelopment for its accommodation of bicycle and pedestrian traffic needs.

LARGO

Objective 1.1

Develop a balanced multi-modal transportation system encompassing private motorized vehicles, public transit, bicycle, and pedestrian travel modes that will be low cost, safe efficient, and aesthetically pleasing.

Policy 1.1.3

The City shall maintain a local street inventory to monitor maintenance and identify areas in need of upgrading. The inventory shall be updated annually and include, but not be limited to, the collection of the following data:

1. Pavement width
2. Road condition
3. Curb and gutter
4. Right-of-way width
5. Street segment length
6. Sidewalk
7. Road surface (e.g., asphalt, brick, dirt)

Policy 1.1.4

Sidewalks shall be required in all new development or redevelopment projects.

Policy 1.1.8

The City shall provide or require pedestrian ways for connecting residential areas to recreational areas, schools, and shopping areas within enighborhoods and for access to mass transit terminals.

MADEIRA BEACH

Objective 1.3

The provision of motorized and non-motorized vehicle parking and bicycle and pedestrian ways shall be regulated.

Policy 1.3.2

Through the City's annual operating budget and the land development regulations, the City shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4

Through the City's annual operating budget and the land development regulations, the City shall provide crosswalks and sidewalks on roadways of high pedestrian usage.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.2

Through the City's annual operating budget and the land development regulations, the City shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.5.3

The City shall review all proposed development and redevelopment for the site plans accommodation of bicycle and pedestrian traffic needs.

NORTH REDINGTON BEACH

GOAL 202

ACHIEVE AN ADEQUATE PEDESTRIAN AND BICYCLE CIRCULATION SYSTEM THROUGHOUT THE TOWN BY PROVIDING AN ADEQUATE NUMBER OF SAFE PLACES TO CROSS MAJOR ROADS, PROVIDING SIDEWALKS AND BIKEWAYS, WHERE FEASIBLE, AND DEVELOPING WELL-MARKED PEDESTRIAN CROSSINGS.

Objective 202.1

Provide for a safe, convenient, and efficient non-motorized transportation system by 1993.

Policy 202.101

Provide well-marked pedestrian crossings with adequate crossing times to meet the needs of Town residents.

Objective 202.2

Match pedestrian and bikeway proposals with open space corridors, easements and rights-of-ways.

OLDSMAR

GOAL 1

A SAFE, CONVENIENT AND EFFICIENT MOTORIZED AND NON-MOTORIZED TRANSPORTATION SYSTEM SHALL BE AVAILABLE FOR ALL RESIDENTS AND VISITORS TO THE CITY.

Policy 1.3.2

The City shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate. One (1) mile of bicycle and pedestrian ways shall be provide by 1995.

Policy 1.3.4

Crosswalks and sidewalks on roadways of high pedestrian usage shall be provided.

Measure

The land development regulations will have adequate provisions for parking, bicycle, and pedestrian facilities.

Policy 1.5.2

The City shall identify and encourage the use of bicycle and pedestrian ways.

Policy 1.5.3

The City shall review all proposed development and redevelopment site plans for the accommodation of bicycle and pedestrian traffic needs.

Policy 1.5.4

The City shall, through requirements in the Land Development Regulations, consider bicycle and pedestrian ways in planning future transportation facilities.

PINELLAS PARK

GOAL

1. PROVIDE A SAFE, EFFICIENT, EFFECTIVE AND CONVENIENT MOTORIZED AND NON-MOTORIZED TRANSPORTATION SYSTEM WHICH PROVIDES CAPACITY FOR THE MOVEMENT OF PEOPLE, GOODS AND SERVICES THROUGHOUT THE CITY.

Objective

Provide for safe, convenient and efficient designs for new or improved motorized and non-motorized vehicle transportation facilities to reduce congestion and accidents by 1995.

Policy 1.3.7

Provide for pedestrian and non-motorized human powered vehicles pathway alternatives by incorporating sidewalks, recreational paths or the concept of wide outside roadway lanes into all future urban roadway improvements.

Policy 1.3.8

Design enhancements for existing and future pedestrian and non-motorized human powered vehicular pathways, such as sidewalk ramps, shall be integrated into the development of the transportation system.

Policy 1.3.9

Pedestrian and non-motorized human powered vehicular pathways shall be located on street and highway rights-of-way, utility easements, mass transit or railroad rights-of-way, where appropriate and justifiable, as part of the transportation system.

Policy 1.3.5

Provide for ongoing instrallation and improvements of the sidewalk network within the City.

Policy 1.3.11

The provision for motorized and non-motorized vehicle parking, on site traffic flow, and the pedestrian and non-motorized vehicle pathways will be regulated through the City's Zoning Code and Subdivision Regulations.

REDINGTON BEACH

Objective 1.3

As an ongoing objective, the provision of motorized and non-motorized vehicle parking, and the provision of bicycle and pedestrian ways shall be regulated.

Policy 1.3.2

The Town shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4

The Town shall identify crosswalks and sidewalks on roadways of high pedestrian usage.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.2

The Town shall provide and encourage the use of bicycle and pedestrian ways.

Policy 1.5.3

The Town shall review all proposed development and redevelopment for its accommodation of bicycle and pedestrian traffic needs.

REDINGTON SHORES

Objective 1.3

The provision of motorized and non-motorized vehicle parking, and the provision of pedestrian ways shall be regulated.

Policy 1.3.2

The Town shall provide pedestrian ways for connecting residential areas to recreation areas, and transit terminal areas, as appropriate.

Policy 1.3.4

The Town shall provide crosswalks and sidewalks on roadways of high pedestrian usage, as determined by the Town.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.2

The Town shall encourage the safe operation of bicycles and the protection of pedestrians.

SAFETY HARBOR

Objective 1.3

The provisions of motorized and non-motorized vehicle parking and bicycle and pedestrian ways shall be regulated.

Policy 1.3.2

The city shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, and shopping areas and transit terminal areas, as appropriate.

Policy 1.3.4

The City shall provide crosswalks and sidewalks on roadways of high pedestrian usage.

Measure

Development and enforcement of parking, and sidewalks regulations.

Policy 1.5.2

The City shall identify and encourage the use of bicycle and pedestrian ways.

Policy 1.5.3

The Town shall review all proposed development and redevelopment for the accommodation of bicycle and pedestrian traffic needs.

Policy 1.5.4

The City shall require all new development and redevelopment, including street improvements, to install sidewalks in accordance with the Land Development Regulations.

ST. PETERSBURG

ISSUE: Bicycle and Pedestrian Ways
AS REQUIRED BY CHAPTER 9J-5, F.S., THE CITY'S TRAFFIC CIRCULATION ELEMENT SHOULD CONSIDER BICYCLE AND PEDESTRIAN WAYS IN THE PLANNING OF A SAFE, CONVENIENT, AND EFFICIENT MOTORIZED AND NON-MOTORIZED SYSTEM.

Objective TC11:

By 1992, the City shall develop a bicycle and pedestrian plan. Provisions for non-motorized traffic shall be included in the development ordinances.

Policy TC11.1

The City shall consider provisions for non-motorized traffic, including bicycles and pedestrians, in the site plan review process by inclusion of bicycle parking standards and sidewalk requirements in the land development regulations.

Policy TC11.4

*Considering bicycle and pedestrian planning in the transportation system of the City.

ST. PETERSBURG BEACH

GOAL 1

A SAFE, CONVENIENT AND EFFICIENT MOTORIZED AND NON-MOTORIZED TRANSPORTATION SYSTEM SHALL BE AVAILABLE FOR ALL RESIDENTS AND VISITORS TO THE CITY.

Objective 1.3

Through land development regulations, the City will provide for safe, convenient, and efficient motorized and non-motorized vehicle parking and bicycle and pedestrian ways.

Policy 1.3.2

The city shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, and shopping areas, as appropriate and when feasible.

Policy 1.3.4

The City shall provide crosswalks and sidewalks on roadways of high pedestrian usage.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.2

The City shall identify and encourage the use of bicycle and pedestrian ways.

Policy 1.5.3

The City shall review all proposed development and redevelopment site plans for the accommodation of bicycle and pedestrian traffic needs.

SOUTH PASADENA

GOAL 202

ACHIEVE AN ADEQUATE PEDESTRIAN AND BICYCLE CIRCULATION SYSTEM THROUGHOUT THE CITY BY PROVIDING AND ADEQUATE NUMBER OF SAFE PLACES TO CROSS MAJOR ROADS, PROVIDING SIDEWALKS AND BIKEWAYS, WHERE FEASIBLE, AND DEVELOPING SIGNALIZED AND WELL-MARKED PEDESTRIAN CROSSINGS.

Objective 202.1

Provide longer pedestrian crossing times along Pasadena Avenue and Gulfport Boulevard, and establish bikeways which allow for recreational and transportational needs by 1991.

Policy 202.101

Provide well-marked pedestrian crossings with adequate crossing times to meet the needs of city residents.

Policy 202.102

Match pedestrian and bikeway proposals with open space corridors, easements and rights-of-way.

SEMINOLE

Objective 1.3

The provision of motorized and non-motorized vehicle parking and bicycle and pedestrian ways, shall be regulated.

Policy 1.3.2

Through the City's annual operating budget and the land development regulations, the City shall provide bicycle and pedestrian ways for connecting residential areas to recreation areas, schools, shopping areas, and transit terminal areas, as appropriate.

Policy 1.3.4

Through the City's annual operating budget and the land development regulations, the City shall provide crosswalks and sidewalks on roadways of high pedestrian usage.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.3

The City shall review all proposed development and redevelopment site plans for the accommodation of bicycle and pedestrian traffic needs.

TARPON SPRINGS

9J-5.007(3)(b)

Provide for a safe, convenient, efficient motorized and non-motorized transportation system.

2. Develop a comprehensive sidewalk program by 1990 which addresses proper maintenance and construction of new sidewalks (Goals 3, & 4).

9J-5.007(3)(5)5

Consideration of bicycle and pedestrian ways in the planning of transportation facilities.

23. Require the construction of sidewalks in the approvals of all new development or redevelopment (Objectives 1, & 2).

24. Adopt a sidewalk maintenance and construction program by 1990 (Objective 2).

25. Require the use of pedestrian easements to schools, parks, shopping areas, and other places of activity, in the approval of all new development or redevelopment (Objectives 1, & 2).

26. Construct sidewalks on all new streets or lane additions (Objective 3).

TREASURE ISLAND

Objective 1.3

As an ongoing objective, the provision of motorized and non-motorized vehicle parking and bicycle and pedestrian ways, shall be regulated.

Policy 1.3.2

The City shall consider the provision of bicycle and pedestrian ways in the planning of transportation facilities.

Policy 1.3.4

The City shall provide crosswalks and sidewalks on city's roadways of high pedestrian usage, as determined by the City.

Measure

Development and enforcement of parking, bicycle and pedestrian regulations.

Policy 1.5.2

The City shall continue to identify and encourage the use of bicycle and pedestrian ways.

Policy 1.5.3

The Town shall review all proposed development and redevelopment for the accommodation of bicycle and pedestrian traffic needs.

SOURCE: COMMUNITY COMPREHENSIVE PLANS

APPENDIX D

SUMMARY OF PINELLAS COUNTY PROJECT REQUESTS

CAPITAL IMPROVEMENTS PROGRAM

1990/91 - 1995/96

SUMMARY OF PROJECT REQUESTS CAPITAL IMPROVEMENTS PROGRAM 1990/91 - 1995/96
COUNTY OF PINELLAS, FLORIDA

Classification SIDEWALKS
Department PW - O & E - ENGINEERING DEPT

All costs are in FY 90/91 Dollars

Proj No.	Project Title	Fisc#	90/91 Captl Prog	FY 91/92	FY 92/93	FY 93/94	FY 94/95	FY 95/96	6 Year Total
38	School Sidewalks	4 / 01 / 009 / 001 / 001	Fund/Center: 0405 8410042				Location: Countywide		
CIE: N	Reserve (Blanket Account)								
	Const			500,000	500,000	500,000	500,000	500,000	2,500,000
Description: Reserve account for new funding for construction of new sidewalks servicing schools along County maintained roads.									
9086	Highland Av-Nursery	4 / 01 / 009 / 002 / 001	Fund/Center: 0405 8410042				Location: CR 375 Clearwater Area		
CIE: N	Rd/Lakeview Rd								
	Plans		20,000						
	Const		53,930	121,070					
	Testing		2,000						
	Other		1,000						198,000
Description: Construct new sidewalk & drainage improvements. (School Sidewalk Program).									
921152	94th Av-137th/131st	4 / 01 / 009 / 011 / 006	Fund/Center: 0405 8410042				Location: Largo-Seminole District		
CIE: N	St & 131st St-94th Av/Forrest Dr								
	Const		68,000						
	Testing		1,500						
	Other		1,000						70,500
Description: Sidewalk and Drainage Construction. South Side of 94th Av and East Side of 131st St. (School Sidewalk Program).									
921153	150th Av-62nd St/58th	4 / 01 / 009 / 021 / 002	Fund/Center: 0405 8410042				Location: Largo-Seminole District		
CIE: N	St								
	Const		31,000						
	Testing		1,500						
	Other		1,000						33,500
Description: Sidewalk Construction with Drainage Construction. South Side. (School Sidewalk Program).									
921149	46th Av-74th St/71st	4 / 01 / 009 / 023 / 003	Fund/Center: 0405 8410042				Location: Pinellas Park Area		
CIE: N	Wy & 74th St-Existing/46th Av								
	R/W		20,000						
	Const		55,000						
	Testing		1,500						
	Other		1,000						77,500
Description: Sidewalk and Drainage Construction. North Side of 46th Av and East Side of 74th St. (School Sidewalk Program).									

SUMMARY OF PROJECT REQUESTS CAPITAL IMPROVEMENTS PROGRAM 1990/91 - 1995/96
COUNTY OF PINELLAS, FLORIDA

Classification SIDEWALKS
Department PW - O & E - ENGINEERING DEPT

All costs are in FY 90/91 Dollars

Proj No.	Project Title	Fisc#	90/91 Captl Prog	FY 91/92	FY 92/93	FY 93/94	FY 94/95	FY 95/96	6 Year Total
921146	60th St-110th CIE: N Av/114th Av	4 / 01 / 009 / 026 / 003	Fund/Center: 0405 8410042			Location: Pinellas Park Area			
	R/W			25,000					
	Const			35,000					
	Testing			3,000					
	Other			1,000					64,000
Description: Construct new sidewalk and drainage. (School Sidewalk Program).									
921293	SR 590-Fairview CIE: N St/Enterprise Rd	4 / 01 / 009 / 051 / 002	Fund/Center: 0405 8410042			Location: Safety Harbor Area			
	Const		90,000						
	Testing		900						
	Other								90,900
Description: Construct missing sidewalk link along west side of SR 590 (1430 Feet).									
920895	74th Av/Oakhurst CIE: N Rd-125th St/RR Tracks	4 / 01 / 009 / 055 / 001	Fund/Center: 0405 8410042			Location: Largo-Seminole District			
	Plans		10,000						
	R/W		10,000						
	Const		72,400						
	Testing		4,000						
	Other		1,000						97,400
Description: Construction of Sidewalk with major drainage. (School Sidewalk Program).									
921141	38th Av-US 19/1275 CIE: N	4 / 01 / 009 / 057 / 001	Fund/Center: 0405 8410042			Location: St. Petersburg Area			
	Plans		10,000						
	Const		140,000						
	Testing		2,000						
	Other		1,000						153,000
Description: Replacement of existing sidewalks requested by Highway Division.									
921357	Sidewalk Replacement CIE: N by Contract-(Blanket Account)	4 / 01 / 009 / 063 / 001	Fund/Center: 0405 8410042			Location: Countywide			
	Const		150,000	150,000	150,000	150,000	150,000	150,000	
	Testing		1,500	1,500	1,500	1,500	1,500	1,500	909,000
Description: Replace broken sidewalks and curbing. Work to be done by annual contracts.									

PW-CB-8A-REV 8/08/88

SUMMARY OF PROJECT REQUESTS CAPITAL IMPROVEMENTS PROGRAM 1990/91 - 1995/96
COUNTY OF PINELLAS, FLORIDA

Classification SIDEWALKS
Department PW - O & E - ENGINEERING DEPT

All costs are in FY 90/91 Dollars

Proj No.	Project Title	Fisc#	90/91 Captl Prog	FY 91/92	FY 92/93	FY 93/94	FY 94/95	FY 95/96	6 Year Total
921445	Lakeview Rd-Keene	4 / 01 / 009 / 064 / 001	Fund/Center: 0405 8410042		Location: Clearwater Area				
CIE: N Rd/Highfield Dr									
		Const	30,000						
		Testing	1,500						
		Other	150						31,650
Description: Sidewalk construction on south side of Lakeview Rd from Keene Rd to Highfield Dr. (School sidewalk program).									
Classification Totals		C	493,330	836,570	651,500	651,500	651,500	651,500	3,935,900
		CC	274,550						274,550
		CGC	15,000						15,000
			782,880	836,570	651,500	651,500	651,500	651,500	4,225,450

APPENDIX E

PEDESTRIAN WARRANTS

PEDESTRIAN WARRANTS

4C-5 Warrant 3, Minimum Pedestrian Volume

A traffic signal may be warranted where the pedestrian volume crossing the major street at an intersection or mid-block location during an average day is:

100 or more for each of any four hours: or

190 or more during any one hour

The pedestrian volume crossing the major street may be reduced as much as 50 percent of the values given above when the predominant pedestrian crossing speed is below 3.5 feet per second.

In addition to a minimum pedestrian volume of that stated above, there shall be less than 60 gaps per hour in the traffic stream of adequate length for pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for the pedestrian(s) to wait, the requirement applies separately to each direction of vehicular traffic.

Where coordinated traffic signals on each side of the study location provide for platooned traffic which result in fewer than 60 gaps per hour of adequate length for the pedestrians to cross the street, a traffic signal may not be warranted.

This warrant applies only to those locations where the nearest traffic signal along the major street is greater than 300 feet and where a new traffic signal at the study location would not unduly restrict platooned flow of traffic. Curbside parking at non-intersection locations should be prohibited for 100 feet in advance of and 20 feet beyond the crosswalk.

A signal installed under this warrant should be of the traffic-actuated type with push buttons for pedestrians crossing the main street. If such a signal is installed within a signal system, it should be coordinated if the signal system is coordinated.

Signals installed according to this warrant shall be equipped with pedestrian indications conforming to requirements set forth in other sections of this Manual.

4C-6 Warrant 4, School Crossing

A traffic control signal may be warranted at an established school crossing when a traffic engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at the school crossing shows that the number of adequate gaps in the traffic stream during the period when the children are using the crossing is less than the number of minutes in the same period (sec. 7A-3).

When traffic control signals are installed entirely under this warrant:

1. Pedestrian indications shall be provided at least for each crosswalk established as a school crossing.

2. At an intersection, the signal normally should be traffic-actuated. As a minimum, it should be semi-traffic-actuated, but full actuation with detectors on all approaches may be desirable. Intersection installations that can be fitted into progressive signal systems may have pretimed control.

3. At non-intersection crossings, the signal should be pedestrian-actuated, parking and other obstructions to view should be prohibited for at least 100 feet in advance of and 20 feet beyond the crosswalk, and the installation should include suitable standard signs and pavement markings. Special police supervision and/or enforcement should be provided for a new non-intersection installation.

APPENDIX F

UNIFORM TRAFFIC CONTROL DIVICES

4D-1 Pedestrian Signal Indications

Pedestrian signal indications are special types of traffic signal indications intended for the exclusive purpose of controlling pedestrian traffic. These indications consist of the illuminated words WALK and DONT WALK or the illuminated symbols of a walking person (symbolizing WALK) and an upraised hand (symbolizing DONT WALK).

4D-2 Meaning of Pedestrian Indications

The meanings of pedestrian signal indications are as follows:

1. The DONT WALK indication, steadily illuminated, means that a pedestrian shall not enter the roadway in the direction of the indication.

2. The DONT WALK indication, while flashing, means that a pedestrian shall not start to cross the roadway in the direction of the indication, but that any pedestrian who has partly completed his crossing during the steady WALK indication shall proceed to a sidewalk, or to a safety island.

3. The WALK indication means that a pedestrian facing the signal indication may proceed across the roadway in the direction of the indication. The WALK indication means that there may or may not be possible conflict of pedestrians with turning vehicles.

4. A WALK indication shall not be flashed.

4D-3 Applications of Pedestrian Signal Indications

Pedestrian signal indications shall be installed in conjunction with vehicular traffic signals (which meet one or more of the traffic signal warrants previously set forth) under any of the following conditions:

1. When a traffic signal is installed under the Pedestrian Volume or School Crossing warrant.

2. When an exclusive interval or phase is provided or made available for pedestrian movements in one or more directions, with all conflicting vehicular movements being stopped.

3. When vehicular indications are not visible to pedestrians such as on one-way streets, at "T" intersections; or when the vehicular indications are in a position which would not adequately serve pedestrians. (see Section 4B-28)

4. At established school crossings at intersections signalized under any warrant.

Pedestrian signal indications also may be installed under any of the following conditions:

1. When any volume of pedestrian activity requires use of a pedestrian clearance interval to minimize vehicle-pedestrian conflicts or when it is necessary to assist pedestrians in making a safe crossing.

2. When multi-phase indications (as with split-phase timing) would tend to confuse pedestrians guided only by vehicle signal indications.

3. When pedestrians cross part of the street, to or from an island, during a particular interval (where they should not be permitted to cross another part of that street during any part of the same interval).

4D-4 Design Requirements

Design requirements for pedestrian signals include the following:

1. Pedestrian indications should attract the attention of, and be readable to, the pedestrian (both day and night) at all distances from 10 feet to the full width of the area to be crossed.

2. All pedestrian indications shall be rectangular in shape and shall consist of the lettered or symbolized messages WALK and DONT WALK. Only internal illumination shall be used (fig. 4-3). Symbol designs are set forth in the Standard Highway Signs booklet.

3. When illuminated, the WALK indication shall be white conforming to the document entitled, Pedestrian Traffic Control Signal Indications, * with all except the letters or symbols obscured by an opaque material.

4. When illuminated, the DONT WALK indication shall be Portland orange conforming to the Pedestrian Traffic Control Signal Indications, * with all except the letters or symbols obscured by an opaque material.

5. When not illuminated, the WALK and DONT WALK messages shall not be readily distinguishable by pedestrians at the far end of the crosswalk they control.

6. For crossings where the distance from the near curb to the pedestrian signal indication is 60 feet or less, the letters, if used, shall be at least 3 inches high or the symbols, if used, shall be at least 6 inches high. For distances over 60 feet, the letters, if used, should be at least 4 ½ inches high and the symbols, if used, should be at least 9 inches high.

7. The light source shall be designed and constructed so that in case of an electrical or mechanical failure of the word DONT, the word WALK of the DONT WALK message will also remain dark.

4D-5 Location

Pedestrian signal faces shall be mounted with the bottom of the housing not less than 7 feet nor more than 10 feet above the sidewalk level, and so there is a pedestrian indication in the line of pedestrians' vision which pertains to the crosswalk being used.

The DONT WALK indication shall be mounted directly above or integral with the WALK indication.

Pedestrian signal heads may be mounted separately or on the same support with other signal heads. When mounted with other signal heads there shall be a physical separation between the two heads.

The pedestrian signal head shall be so positioned and adjusted as to provide maximum visibility at the beginning of the controlled crossing.

4D-6 Detectors

(See Section 4B-29, Pedestrian Detectors)

4D-7 Pedestrian Intervals and Phases

Under normal conditions, the WALK interval should be at least 4 to 7 seconds in length so that pedestrians will have adequate opportunity to leave the curb before the clearance interval is shown. The lower values may be appropriate where it is desired to favor the length of an opposing phase and if pedestrian volumes and characteristics do not require the longer interval, the WALK interval itself need not equal or exceed the total crossing time calculated for the street width, as many pedestrians will complete their crossing during the flashing DONT WALK clearance interval.

A pedestrian clearance interval shall always be provided where pedestrian signal indications are used. It shall consist of a flashing DONT WALK indication. The duration should be sufficient to allow a pedestrian

crossing in the crosswalk to leave the curb and travel to the center of the farthest traveled lane before opposing vehicles receive a green indication (normal walking speed is assumed to be 4 feet per second). On a street with a median width sufficient for pedestrians to wait, it may be desirable to allow only enough pedestrian clearance time on a given phase to clear the crossing from the curb to the median. In the latter case, if the signals are pedestrian actuated, an additional detector shall be provided on the island (sec. 4B-29). In some cases of railroad preemption and emergency vehicle priority control, the pedestrian clearance may be abbreviated as described in 4B-22 and 8C-6.

At intersections equipped with pedestrian signals, the pedestrian signals shall be displayed except when the traffic signal is being operated as a flashing device. At those times, the pedestrian indications shall not be illuminated.

4B-28 Provisions of Pedestrians

The design and operation of traffic control signals must take into consideration the needs of pedestrian as well as vehicular traffic. Where minimum numbers of pedestrian movements regularly occur:

1. Signal indications must be visible to pedestrians. This can be accomplished for a given pedestrian movement by:

a. provision of pedestrian signal indications, or

b. a R.Y G. signal face for an adjacent vehicular movement visible to pedestrians, or

c. vehicular indications for conflicting movements that can be conveniently viewed by pedestrians, and from which pedestrians can readily and accurately deduce when they have the right-of-way.

2. There must be an opportunity to cross without excessive delay. Pedestrian actuation shall be installed at traffic control signals where the signal operation does not otherwise provide this opportunity.

3. Pedestrians should be provided with sufficient time to cross the roadway. This may be accomplished by adjusting the signal operation and timing to automatically provide this assurance or via pedestrian actuation.

Where it is desired to prohibit certain pedestrian movements at a traffic control signal, a sign NO PEDESTRIAN CROSSING (2B-36) may be used.

4B-29 Pedestrian Detectors

Pedestrian detectors (usually push buttons) should be conveniently located near each end of crosswalks where pedestrian actuation is required. A mounting height of 3 ½ to 4 feet above the sidewalk has been found best adapted to general usage. Permanent-type signs (sec. 2B-37) shall be mounted above or in unit with the detectors, explaining their purpose and use. At certain locations, it may be desirable to supplement this sign with a larger sign suspended over the sidewalk to call attention to the push button. Where two crosswalks, oriented in different directions, end at or near the same location, the positioning of pedestrian push buttons should clearly indicate which crosswalk signal is actuated by each push button. Additional push-button detectors may be required on islands or medians where a pedestrian might become stranded.

Special purpose push-bottons (to be operated only by authorized persons) should include a housing capable of being locked to prevent access by the general public. Instruction signs are not necessary in this case.

A pilot light or other means of indication may be installed with a pedestrian push button and normally shall not be illuminated. Upon actuation, it shall be illuminated until the pedestrian's green or WALK indication is displayed.

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