

MEAN STREETS

2002



Photo by Fred Kent of Project for Public Spaces (www.pps.org)

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Executive Summary

Where it's most dangerous to walk

4,955 people died in the year 2001 while walking down the street in the United States, up from the toll of 4,843 in 2000. This is the first increase in deaths since 1995. An estimated 78,000 pedestrians were injured in traffic crashes during each of those two years. While only about 5 percent of all trips are made on foot, about 12 percent of all traffic deaths are pedestrians, making walking one of the most dangerous modes of travel. This report looks at where Americans are dying as pedestrians, what makes the streets dangerous for those on foot, and how the states are responding to those dangers.

The pedestrian danger index (PDI) shows where it is most dangerous to step out of your door to take a walk. It looks at the rate of pedestrians deaths, relative to the amount that people walk in a community. The PDI shows that the most dangerous places to walk are metropolitan areas marked by newer, low-density developments, where wide, high-speed arterial streets offer few sidewalks or crosswalks. The most dangerous metropolitan area for walking in 2000/2001 was Orlando, followed by Tampa, West Palm Beach, Memphis, Miami, Jacksonville, Houston, Phoenix, Dallas-Ft. Worth, and Nashville.

Lack of investment

Unfortunately, despite the pleas of mayors and local elected officials, few federal transportation dollars are being spent on pedestrian safety in most of these areas. STPP analyzed state spending of federal transportation funds, and found that in nine of the top ten most dangerous metropolitan areas, state spending of federal dollars on creating a safe walking environment is well below average. The ten areas listed above are spending an average of 62 cents per person on pedestrian facilities or safety programs, significantly below the national average of 87 cents per person each year.

Because state Departments of Transportation typically control the vast majority of federal funds (94 cents of every federal transportation dollar), federally-funded roads have tended to be designed and built with little regard to local needs. This often results in wide, high-speed arterials (the type of roads that the state DOTs are most familiar with) running through towns and neighborhoods. Unfortunately, these are the same roads which are the most deadly for pedestrians.

STPP's analysis shows that the states are not investing enough of their federal transportation dollars to protect people who walk. While 12

percent of all traffic deaths are pedestrians (13.6 percent if bicyclists are included), less than one percent (0.7 percent) of federal transportation construction, operations, and maintenance funds are spent to ensure a safe walking environment. No state spends more than 2.7 percent of their federal transportation funds on sidewalks, crosswalks, traffic calming, speed humps, multi-use paths, or safety programs for cyclists or pedestrians. This is in spite of a 40 percent increase in federal transportation dollars flowing to the states in the last few years, and regulations that make it easier to use what were once "highway funds" on a wider variety of transportation projects.

In addition, the states have lost the opportunity to spend \$700 million on bicycle and pedestrian projects through a program in the federal law. The program, Transportation Enhancements, is designed to support bicycle and pedestrian projects. The states have under-spent the funds available for the Transportation Enhancement program by about \$700 million since fiscal year 1998.

Roads built for speed

Rather than investing in pedestrian safety, many state departments of transportation often choose to build roads that turn out to be dangerous for people on foot. In looking at why some metropolitan areas rank high on the pedestrian danger index, STPP's analysis found that two-thirds of the roads where the most pedestrians are killed are located in the top ten most dangerous areas as ranked in the PDI. The deadliest roads tend to be high-speed arterials, with few accommodations or protections for pedestrians. For example, the road with the highest overall fatalities, US 19 in the Tampa-St. Petersburg-Clearwater metro area, is a six to eight-lane principal arterial with a speed limit of 45 mph. It has few sidewalks or crosswalks, and is lined by strip malls and big box stores set far back from the street. While designed for access via automobile, people do walk on this street, and an average of 11 pedestrians die on this stretch of road each year.

People at higher risk

For the first time, the federal fatality statistics include a look at the racial and ethnic background of those killed. While the record is not complete (data is not available for 37 percent of deaths), it does show that ethnic and racial minorities are over-represented in pedestrian deaths. African-Americans make up more than 20 percent of pedestrian deaths, even though they represent just 12 percent of the total population.

Children also face higher risks as pedestrians. Pedestrian injury is the second leading cause of unintentional injury-related death among children ages 5 to 14. This is true even though the evidence shows that fewer children are walking. Only about 10 percent of children walk to school, down from 50 percent in 1969. Forty percent of parents asked about the barriers to children walking to school cited traffic as a major concern. About 70 percent of children's trips are made in the back seat of a car.

The health risk of walking less

While walking presents some dangers, not walking may hold more hazards. As children have been walking less, the percentage of children who are obese or overweight has soared. The same is true for adults: the portion of people who walk to work dropped by 26 percent between 1990 and 2000, at the same time that the percentage of the population who are obese or overweight jumped more than 60 percent. The Surgeon General's Call to Action on the obesity epidemic calls for providing safe and accessible sidewalks, walking, and bicycle paths. Physical inactivity is also associated with a heightened risk for many diseases, including heart disease, diabetes and pancreatic and breast cancer.

The medical costs of physical inactivity are estimated at about \$76 billion per year. Meanwhile, the federal transportation program, which weighs in at about \$46 billion per year, spends less than one percent of that – about \$250 million annually – on creating safer places to walk and bicycle.

Recommendations for state and federal action

The effort to create a better walking environment would be much more effective if state and national transportation agencies embraced walking as a transportation priority by adopting the following recommendations:

- Match the Level of Funding to the Level of the Problem.
- Create Walk-Friendly Streets.
- Give Funding to Those Who Own the Roads.
- Include Safe Routes to School Program in TEA-3.
- Require Better Data Collection.
- Require Better Pedestrian Performance Measures.
- Prioritize Access by Foot.

Introduction

In 2001 nearly 5,000 Americans died while crossing the street, walking to school, or waiting at a bus stop. The National Highway Traffic Safety Administration (NHTSA) estimates that 78,000 more were injured; on average a pedestrian is killed or injured in a traffic crash every 7 minutes. These seemingly safe, everyday acts ended the lives of more than 500 children under the age of 16 in 2001. This report, analyzes data from the Fatality Accident Reporting System (FARS) maintained by NHTSA to determine where pedestrians are dying, and why. It also looks at the investment in pedestrian safety through analysis of state spending patterns of federal highway funds, which are recorded in the Fiscal Management Information System (FMIS) maintained by the Federal Highway Administration.

In 2001, 112 more pedestrians were killed in traffic crashes than in 2000. This increase in deaths occurred even as evidence indicates that fewer people are walking regularly. Newly-released Census figures on how Americans travel to work shows that the share of work trips made on foot declined by 26 percent in the last decade. In 1990, nearly 4.5 million Americans walked to work. Ten years later, in 2000, that figure declined to 3.8 million. The broader Nationwide Personal Transportation Survey shows that walking overall dropped from 9.3 percent of all trips in 1977 to just 5.4 percent in 1995. The death rate, combined with the decline in walking, indicates that U.S. streets may be getting less safe for pedestrians.

In what may be a vicious circle, the decline in walking can be attributed to the decline in safe, convenient and inviting places to walk, to a lack of investment in safe pedestrian facilities, and to the increasing number of Americans living in places where walking is more dangerous. More and more Americans are living in sprawling suburban and exurban areas where walking is difficult at best. From 1990 to 2000, according to the Census, the number of people living on the edge of metropolitan areas grew by 18 percent. These areas are generally characterized by wide arterial streets with fast-moving traffic, few sidewalks or crosswalks, and stores, shops, and offices accessible only by car. These are also the environments that our study show to be the most deadly for walkers.



Photo by Dan Burden

**4,955
pedestrians
were killed in
2001; 512 of
those killed
were children
under the age
of 16**

Where Pedestrians Are Dying

In order to compare metro areas by their relative risk of death for pedestrians, STPP created the Pedestrian Danger Index (PDI) which is a measure of the average yearly pedestrian fatalities per capita (for the years 2000 and 2001), adjusted for the number of walkers.¹ This gives us a measure of pedestrian fatalities that controls for exposure to walking.²

According to the Pedestrian Danger Index, the top ten most dangerous large metro areas for walking were: Orlando; Tampa–St. Petersburg–

Clearwater; West Palm Beach–Boca Raton; Memphis; Miami–Ft. Lauderdale; Jacksonville; Houston; Phoenix–Mesa, AZ; Dallas–Ft. Worth; and Nashville. Orlando’s pedestrian death rate of 3.3 deaths per 100,000 persons is remarkable given that its walk-to-work rate, 1.3 percent, is well below the national average. This combination of a high death rate, and low rate of walking, gives Orlando the top PDI ranking.

	Metro Area	Pedestrian Danger Index
1	Orlando, FL	79.3
2	Tampa–St. Petersburg–Clearwater, FL	67.2
3	West Palm Beach–Boca Raton, FL	65.9
4	Memphis, TN–AR–MS	56.1
5	Miami–Ft. Lauderdale, FL	51.5
6	Jacksonville, FL	51.2
7	Houston–Galveston–Brazoria, TX	42.3
8	Phoenix–Mesa, AZ	41.7
9	Dallas–Ft. Worth, TX	40.8
10	Nashville, TN	39.3

The most dangerous metro areas, all located in the South or West, tend to be marked by lower density development patterns, which include wide, high-speed arterials that are particularly hazardous for walking. Most experienced rapid population growth in the latter half of the 20th Century when development was designed to facilitate fast-moving automobile traffic and new growth tended to follow new highways away from the central city. In fact, a new report from Smart Growth America found that 50 percent fewer commuters walk to work in sprawling areas like the ones listed above.³ And the PDI indicates that when they do walk to work, they face a higher level of risk.

¹ The number of walkers acts as a measure of exposure to the risk of being killed as a pedestrian. It is derived from the 2000 Decennial Census Journey-to-Work data on the share of workers walking to work.

² The Census Journey-to-Work data is limited in that it provides information only on the mode people choose most often to travel to and from work. A better measure of exposure would include all types of trips (including to the store, to school, to the subway, etc.), as well as trips taken by the non-usual mode. Unfortunately a good, nationwide source of that data at the metro area level is not available.

³ According to that report, about 2 percent of commuters walk to work in sprawling metro areas, compared to 3.1 percent in less sprawling metro areas. Reid Ewing, Rolf Pendall, and Don Chen. *Measuring Sprawl and Its Impact*. October 2002. <www.smartgrowthamerica.org/sprawlinde/sprawlinde.html>

Table 1. The Most Dangerous Large Metro Areas for Pedestrians (over 1 million residents)

	Metro Area	Average Annual Pedestrian Deaths per 100,000 Capita (2000-2001)	Percent of Workers Walking to Work	Pedestrian Danger Index	1997-1998 Ranking
1	Orlando, FL MSA	3.3	1.3%	79.3	4
2	Tampa-St. Petersburg-Clearwater, FL MSA	3.7	1.7%	67.2	1
3	West Palm Beach-Boca Raton, FL MSA	2.9	1.4%	65.9	7
4	Memphis, TN-AR-MS MSA	2.3	1.3%	56.1	8
5	Miami-Fort Lauderdale, FL CMSA	2.9	1.8%	51.5	3
6	Jacksonville, FL MSA	2.7	1.7%	51.2	5
7	Houston-Galveston-Brazoria, TX CMSA	2.2	1.6%	42.3	11
8	Phoenix-Mesa, AZ MSA	2.8	2.1%	41.7	6
9	Dallas-Fort Worth, TX CMSA	1.9	1.5%	40.8	9
10	Nashville, TN MSA	1.9	1.5%	39.3	15
11	Charlotte-Gastonia-Rock Hill, NC-SC MSA	1.5	1.2%	39.1	13
12	Atlanta, GA MSA	1.6	1.3%	38.8	2
13	Greensboro--Winston-Salem--High Point, NC MSA	1.8	1.6%	36.9	14
14	Detroit-Ann Arbor-Flint, MI CMSA	2.0	1.8%	35.2	21
15	Las Vegas, NV-AZ MSA	2.5	2.4%	32.5	16
16	St. Louis, MO-IL MSA	1.7	1.6%	32.3	17
17	Louisville, KY-IN MSA	1.8	1.7%	31.9	new
18	Salt Lake City-Ogden, UT MSA	1.8	1.8%	31.2	12
19	Oklahoma City, OK MSA	1.6	1.7%	29.9	18
20	Kansas City, MO-KS MSA	1.3	1.4%	29.6	20
21	Los Angeles-Riverside-Orange County, CA CMSA	2.2	2.6%	27.4	19
22	San Antonio, TX MSA	2.0	2.4%	27.2	24
23	Denver-Boulder-Greeley, CO CMSA	2.0	2.4%	26.6	26
24	Sacramento-Yolo, CA CMSA	1.8	2.2%	25.4	22
25	Austin-San Marcos, TX MSA	1.7	2.1%	25.1	25
26	New Orleans, LA MSA	2.1	2.7%	23.7	10
27	Raleigh-Durham-Chapel Hill, NC MSA	1.6	2.3%	22.5	23
28	San Diego, CA MSA	2.3	3.4%	21.0	29
29	Hartford, CT NECMA	1.6	2.5%	20.7	34
30	Buffalo-Niagara Falls, NY MSA	1.8	2.7%	20.4	42
31	Richmond-Petersburg, VA MSA	1.2	1.9%	20.1	new
32	Indianapolis, IN MSA	1.0	1.7%	19.6	30
33	Washington-Baltimore, DC-MD-VA-WV CMSA	1.7	3.0%	18.2	31
34	Grand Rapids-Muskegon-Holland, MI MSA	1.1	2.1%	17.3	32
35	Chicago-Gary-Kenosha, IL-IN-WI CMSA	1.7	3.1%	16.7	33
36	San Francisco-Oakland-San Jose, CA CMSA	1.7	3.3%	16.3	28
37	Portland-Salem, OR-WA CMSA	1.5	3.0%	16.3	27
38	Columbus, OH MSA	1.2	2.4%	15.7	39
39	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA	1.8	3.9%	14.5	43
40	Pittsburgh, PA MSA	1.6	3.6%	14.2	47
41	Norfolk-Virginia Beach-Newport News, VA-NC MSA	1.1	2.7%	12.8	36
42	Rochester, NY MSA	1.4	3.5%	12.6	45
43	Seattle-Tacoma-Bremerton, WA CMSA	1.2	3.2%	12.3	35
44	Cleveland-Akron, OH CMSA	0.8	2.1%	11.5	41
45	Minneapolis-St. Paul, MN-WI MSA	0.9	2.4%	11.4	38
46	Milwaukee-Racine, WI CMSA	0.9	2.8%	10.4	44
47	New York-N. New Jersey-Long Island, NY-NJ-CT-PA CMSA	1.8	5.6%	10.2	40
48	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH NECMA	1.3	4.0%	9.8	46
49	Cincinnati-Hamilton, OH-KY-IN CMSA	0.7	2.3%	9.6	37

Florida's Older Pedestrians

Five of the six most dangerous metro areas for walking are in Florida, known as a haven for retirees. Is there a connection? An analysis of the pedestrian fatality statistics by STPP reveals that the portion of elderly people dying as pedestrians in Florida is not out of line with the national average. 16.4 percent of pedestrian deaths in Florida in the years studied were elderly people (70 years and older), just below the national average of 17.3 percent. Half of the states had rates higher than Florida's. In fact, over one-quarter of all pedestrian deaths in Hawaii, Massachusetts, Idaho, Rhode Island, Alaska, Pennsylvania, New York, and Connecticut were elderly.

The PDI was developed by STPP to allow a fair comparison of metro areas according to their risk to pedestrians, relative to how much an ordinary person walks in that metro area. However, in some communities, even those which are not rated as the most "dangerous" according to the PDI, pedestrian deaths represent an unusually high portion of all traffic deaths.

The New York metropolitan area, with an average of 383 pedestrian deaths annually, has the highest absolute number of pedestrian deaths of any metropolitan area in the U.S. However, with more than 21

	Metro Area	Number of Ped Fatalities (2000)	Number of Ped Fatalities (2001)	Percent of Traffic Deaths that Were Pedestrians
1	New York-No. New Jersey-Long Island, NY-NJ-CT-PA	393	372	27.0%
2	San Diego, CA	65	64	23.6%
3	San Francisco-Oakland-San Jose, CA	132	107	23.6%
4	Los Angeles-Riverside-Orange Co., CA	354	389	23.2%
5	Miami-Ft. Lauderdale, FL	119	109	22.2%
6	Buffalo-Niagara Falls, NY	17	24	21.8%
7	Tampa-St. Petersburg-Clearwater, FL	97	81	21.5%
8	Salt Lake City-Ogden, UT	26	23	21.5%
9	Detroit-Ann Arbor-Flint, MI	118	106	19.0%
10	Chicago-Gary-Kenosha, IL-IN-WI	155	152	18.8%

million people residing with-in its boundaries, the pedestrian fatality rate per 100,000 persons averages 1.8. And with the highest portion of commuters walking to work of any large metropolitan area, the relative risk to pedestrians is the third lowest in the country.

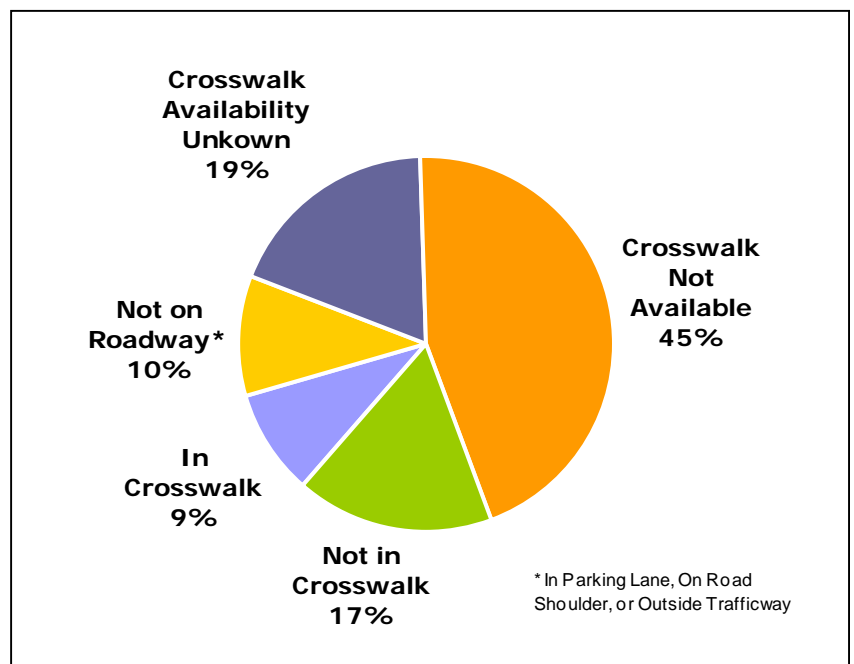
Even so, pedestrians make up a high percentage of all traffic deaths in New York – 27 percent, more than twice the national average. In communities with such a high portion of pedestrian deaths, pedestrian safety merits proportional public safety attention. The table above lists the metro areas with the highest percentage of pedestrian deaths.

Streets Designed for Speed, Not People

Perhaps the best way to understand why these metropolitan areas are so hazardous is to take a closer look at the types of streets where most pedestrians are killed. Wide roads, speeding traffic, and a lack of crosswalks or sidewalks can make walking a deadly activity. Even in relatively compact, walkable metro areas, there are streets which are especially dangerous for pedestrians. While there is no way to determine the most dangerous streets per mile or per capita, STPP analyzed the streets where the most pedestrians were killed, which is recorded in the FARS database, to provide some basis for comparison.⁴

STPP's analysis revealed that more than two-thirds of the ten roads where the most pedestrians were killed in 2000 and 2001 are part of the same sprawling metro areas identified as the ten most dangerous for pedestrians under the PDI. Several are notoriously unsafe for pedestrians. Those roads were: U.S. 19, appearing twice on the list, as #1 in Pasco County and #9 in Pinellas County (part of the Tampa-St. Petersburg-Clearwater, FL MSA); #2, S.R. 50 in Orange County (Orlando, FL MSA); U.S. 1, also appearing twice as #3 in Broward County and #4 in Dade County (part of the Miami-Ft. Lauderdale, FL CMSA); #5, Indian School Road in Maricopa County (Phoenix-Mesa, AZ MSA); #6, Sunrise Highway (S.R. 27) in Nassau County (New York-N. New Jersey-Long Island, NY-NJ-CT-PA CMSA); #7, Queens Blvd in Queens County (New York-N. New Jersey-Long Island, NY-NJ-CT-PA CMSA); #8, Foothill Blvd (S.R. 66) in San Bernardino County (Los Angeles- Riverside- Orange County, CA CMSA); #10, U.S. 59 in Harris County (Houston-Galveston-Brazoria, TX CMSA).

In addition, a broad look at all pedestrian deaths shows the potential influence of poor pedestrian facilities. Of the nearly 9,649 pedestrians who were killed in 2000 and 2001, for whom location of death is known, nearly 45 percent were killed where no crosswalk was available. Another 19 percent were



⁴ In order to determine which roads are the most dangerous, pedestrian fatalities would need to be adjusted for population and exposure, i.e., how many walkers use a particular route.

killed where crosswalk availability was not known. Less than ten percent of pedestrian fatalities occurred inside a crosswalk. These data point to at least one obvious, common problem of dangerous streets – there simply are not enough pedestrian facilities.

A recent study from the Federal Highway Administration (FHWA) supports this finding: “There is no question that conditions for bicycling and walking need to be improved in every community in the United States; it is no longer acceptable that 6,000 bicyclists and pedestrians are killed in traffic every year...and that two desirable and efficient modes of travel have been made difficult and uncomfortable.”⁵ In *Recommendations for State and Federal Action* STPP suggests some ways that pedestrian facilities may be improved. Other resources are listed in a special section at the end of this report.

Dangerous Roads

#1 & 9. U.S. 19, St. Petersburg-Clearwater, FL

U.S. 19 in Tampa-St. Petersburg-Clearwater, averaging more than one pedestrian fatality per month, is so dangerous that the county government is considering the creation of a special task force to address the problem (Carl Orth. “Task Force Considered to Address U.S. 19 Safety” Tampa Tribune, 8/9/2002: pg. 3). What makes U.S. 19 so dangerous for pedestrians? The six to eight-lane principal arterial, with a speed limit of 45 mph in many places, lacks sidewalks or crosswalks along much of its length. The road is lined by strip malls and big box stores, and often the only “safe” way to get from one shopping center to another is to drive. Even bus stops along the route frequently provide no pedestrian access, forcing bus riders to walk along the side of the road or in the gutter.

#10. Queens Boulevard, New York, NY

Has become notorious in the New York City press as the “Boulevard of Death.” Since 1993 76 people have died trying to cross the road. An upcoming tree-planting by Our Lady Queen of Martyrs Church will memorialize those deaths; a plaque in front of the tree will read, “In remembrance of all who lost their lives on Queens Boulevard.”

Although some of NYC’s busiest subway lines run beneath it, the thoroughfare has been continually re-engineered since the mid-20th Century to move more and more auto traffic. It is ten or more lanes wide in places. It therefore juxtaposes very high levels of pedestrian activity with extremely heavy motor traffic. High numbers of pedestrian deaths and increasing public outcry have moved city officials in recent years to increase pedestrian crossing times, install red light cameras and increase police presence along the roadway. This represents an improvement over earlier blame-the-victim approaches, but civic leaders and pedestrian advocates continue to press for a more pedestrian- and community-friendly roadway redesign.



⁵ Federal Highway Administration (1999). *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach*.

<<http://www.fhwa.dot.gov/environment/bikeped/Design.htm>>

The Role of Race and Ethnicity in Pedestrian Fatalities

While it would seem that traffic crashes are indiscriminate killers, the pedestrian fatality statistics show that ethnic and racial minorities tend to be disproportionately represented in the numbers. While the data on race and ethnicity for pedestrian deaths is still incomplete (records for 37 percent of pedestrian fatalities did not record ethnicity data), the available data does offer important findings.

Nationwide, non-Hispanic whites comprise 69 percent of the population. However, only 60 percent of pedestrian deaths for which ethnicity is known are non-Hispanic whites. In contrast, African-Americans make up more than one in five (20 percent) pedestrian deaths, though they represent only 12 percent of the total U.S. population. Likewise, Latino pedestrians comprise 13.5 percent of deaths, but only 12.5 percent of the total U.S. population.

Several recent surveys elsewhere in the United States have produced similar findings. The Centers for Disease Control reported recently that Latinos in Atlanta were six times more likely to be hit and killed while walking than whites. A survey conducted by the *Washington Post* found that Latinos in suburban Washington, DC were three times more likely to be hit and killed.⁶ Another survey conducted by the *Los Angeles Times* in Orange County, California showed that while Latinos make up 28 percent of the county's population, they accounted for 40 percent of all pedestrian injuries and 43 percent of all pedestrian deaths.⁷

Several studies show the risk of injury to be significantly higher among African-American children than other children,⁸ and in Census tracts with higher percentages of non-white residents.⁹ In New Mexico, Native American children had a death rate 2.5 times that of other ethnic and racial groups.¹⁰

African-Americans comprise only 12 percent of the population, but more than 20 percent of pedestrian deaths.

⁶ Sylvia Moreno and Alan Sipress. "Fatalities Higher for Latino Pedestrians; Area's Hispanic Immigrants Apt to Walk but Unaccustomed to Urban Traffic," *Washington Post*. August 27, 1999.

⁷ Richard Marosi. "Pedestrian Deaths Reveal O.C.'s Car Culture Clash," *Los Angeles Times* Orange County Edition. November 28, 1999.

⁸ W.D. Kim, P.A. Palmisano. "Racial Differences in Childhood Hospitalized Pedestrian Injuries," *Pediatric Emergency Care*. 1992; 8 (4): pg. 221-224.

⁹ M. Braddock, G. Lapidus, D. Gregorio, M. Kapp, L. Banco. "Population, Income, and Ecological Correlates of Child Pedestrian Injury," *Pediatrics*. Dec. 1991; 88 (6): pg. 1242-1247. F.P. Rivara, M. Barber. "Demographic Analysis of Childhood Pedestrian Injuries," *Pediatrics*. Sept. 1985; 76 (3): pg. 375-381.

¹⁰ L.M. Olson, D.P. Sklar, L. Cobb, F. Sapien, R. Zumwalt. "Analysis of Childhood Pedestrian Deaths in New Mexico," *American Emergency Medicine*. 1993; 22: pg. 512-516.

It is speculated that the link between pedestrian deaths and ethnicity is due to the fact that Latinos, and African-Americans are less likely to own a car and more likely to walk, bike and/or take public transportation, resulting in greater exposure to the dangers of the street. Indeed, an analysis of the 2000 Census shows that racial and ethnic minorities are much more likely than whites to walk to work. While 2.9 percent of all American workers walked to work in 2000, 3.2 percent of African-American workers, and 4.0 percent of Latino workers walked to work.

Child Pedestrians

A safe walking environment is particularly important for children, who depend more heavily on walking for mobility than adults. Almost eleven percent of all pedestrian deaths are children. And despite recent declines, pedestrian injury remains the second leading cause of unintentional injury-related death among children ages 5 to 14.¹¹

While currently available data does not allow us to compute a pedestrian danger index for children, we know that parents are concerned that the walking environment is too dangerous for kids. A recent national survey by the Centers for Disease Control found that 40 percent of parents cited traffic as a major barrier to allowing children to walk to school. The National Safe Kids Campaign surveyed 9,000 "walkability" audits conducted across the country and found that nearly 60 percent of parents and children encountered at least one serious hazard along their routes to school. Common hazards included the lack of a sidewalk or crosswalk, wide roads, complicated traffic conditions, improper parking and speeding drivers.¹² In addition, many new schools are being built at the edge of communities, too far for children to walk.¹³

While the rate of child pedestrian deaths has been declining over the last decade, analysts believe this is in large part due to a decrease in exposure because children are walking much less. A 1995 study found that just 10 percent of children walk to school, down from 50 percent in 1969.¹⁴ This has occurred at the same time that the percent of children who are obese or overweight has soared: in just six years, the portion of 12 to 19-year-olds who are overweight jumped five percent: 16 percent of children in this age group are now considered overweight, and children in all age groups are gaining weight.¹⁵

Across all age groups, about one in seven children are obese.¹⁶ Routine physical activity, such as walking to school, is one of the potential solutions to the obesity epidemic among children. Parents and schools are now organizing Walk to School Days to encourage more walking and to identify and fix hazards along the walk to school.

¹¹ National Safe Kids Campaign. *Report to the Nation on Child Pedestrian Safety*. October 2002.

¹² *ibid.*

¹³ National Trust for Historic Preservation. *Why Johnny Can't Walk to School*. 2001. <<http://www.nationaltrust.org>>

¹⁴ Federal Highway Administration. *Nationwide Personal Transportation Survey 1995*.

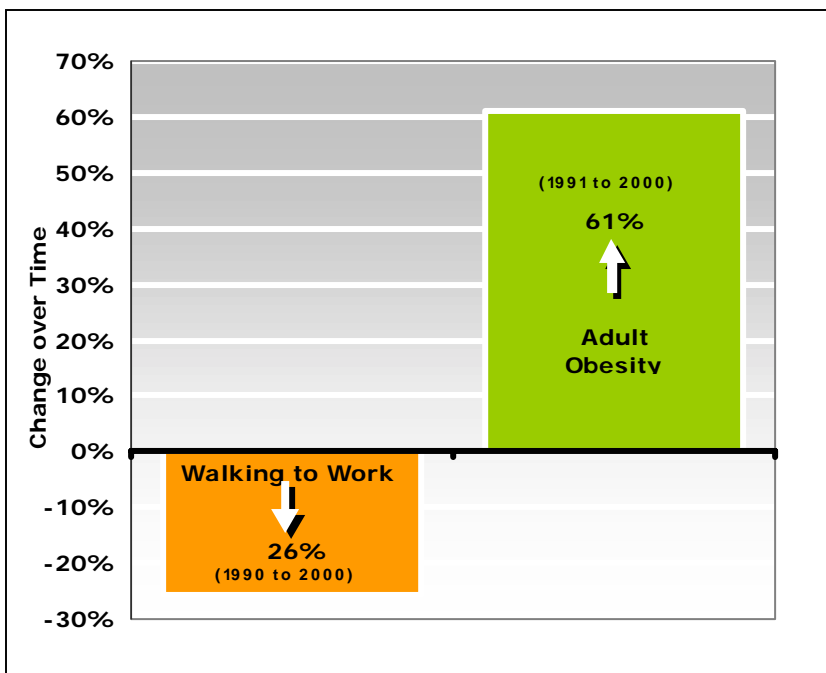
¹⁵ Cynthia L. Ogden; Katherine M. Flegal; Margaret D. Carroll; Clifford L. Johnson. "Prevalence and Trends in Overweight Among U.S. Children and Adolescents, 1999-2000," *Journal of the American Medical Association*. October 9, 2002.

¹⁶ National Center for Health Statistics, Centers for Disease Control and Prevention. *Prevalence of Overweight Among Children and Adolescents*. United States, 1999.

Walking for Health

While walking presents some dangers, not walking may be more hazardous for the health of children and adults. The portion of people who walk to work dropped by 26 percent between 1990 and 2000, at the same time that the portion of the population who are obese or overweight has jumped more than 60 percent. Walking is the most prevalent form of basic physical activity, and public health officials blame physical inactivity for an estimated 250,000 deaths annually. Moderate physical activity has been linked to a wide range of benefits, including lowering the risk for heart disease, stroke, colon and breast cancer, diabetes, and high blood pressure. Studies have also shown

its benefits in warding off high cholesterol and depression.



Clearly, increasing pedestrian safety and encouraging walking would deliver significant health benefits. Public health officials have recognized the decline in walking and other physical activity as a contributor to the obesity epidemic that is now affecting 19.8 percent of U.S. adults. The Surgeon General's Call to Action on the obesity epidemic issued in 2001 calls for providing safe and accessible sidewalks, walking, and bicycle paths.

Diseases associated with a sedentary lifestyle cost \$76 billion a year.¹⁷ With health care costs soaring, more and more governments and health care agencies are focusing on prevention as a way to improve Americans' health status. A growing movement for "active living" is bringing together transportation, land use, and health officials to determine how to engineer a built environment that encourages walking. This movement promotes active living as a way of life that integrates physical activity into daily routines. The recommended activity level for Americans is 30 minutes of moderate physical activity at least five days a week, a goal that can easily be met through walking to school, to work, or for errands.

¹⁷ M. Pratt, C.A. Macera, G. Wang. "Higher Direct Medical Costs Associated with Physical Inactivity," *The Physician and Sports Medicine* 2000 vol 28, no. 10 pg. 63-70.

Walkers' Safety Not a Spending Priority

Although one-third of Americans do not drive, nearly everyone walks. Unfortunately, most state Departments of Transportation have not recognized the importance of walking, and have failed to take advantage of increased federal funding that is available to address pedestrian safety. STPP analyzed state spending of federal funds over the life of the most recent transportation bill, the Transportation Equity Act for the 21st Century (TEA-21), using the Fiscal Management Information System maintained by the FHWA. Federal spending cannot be directly associated with the safety of the walking environment, because some communities have been investing in sidewalks and other facilities for decades, or have dedicated more local funds to the task. But it does indicate the level of commitment transportation agencies have to creating safer pedestrian environments.

Nationally, less than 1 percent (0.7 percent) of federal transportation funds have so far been spent on pedestrians under the most recent federal spending law, TEA-21. This is despite the fact that pedestrians comprise nearly 12 percent of all traffic deaths, and trips made on foot account for 5.4 percent of all trips. This 0.7 percent of spending, about \$250 million per year, includes both safety funding and funding for pedestrian (and bicycling) facilities such as crosswalks, sidewalks, traffic calming projects, pedestrian signals, paths, and speed humps.¹⁸ Table 2 shows how each state has performed in using its federal funds on pedestrian projects. Nationwide, the average annual amount of federal funds spent on pedestrian facilities is just 87 cents per person, while the average annual spent per person on roads and bridges is more than \$50. The 1998 TEA-21 law also represented a significant overall increase in federal transportation dollars flowing to the states: on average, states received 40 percent more dollars than in the previous transportation funding bill.

**Nationwide,
less than 1
percent of
federal
transportation
funds were
spent on
pedestrians
from 1998 to
2001**

PDI Rank	Metro Area	Average Yearly Spending of Federal Funds on Bicycle/ Pedestrian Projects per Capita (FY1998-FY2001)
1	Orlando, FL	\$1.89
2	Tampa-St. Petersburg-Clearwater, FL	\$0.41
3	West Palm Beach-Boca Raton, FL	\$0.37
4	Memphis, TN-AR-MS	\$0.35
5	Miami-Ft. Lauderdale, FL	\$0.56
6	Jacksonville, FL	\$0.76
7	Houston-Galveston-Brazoria, TX	\$0.63
8	Phoenix-Mesa, AZ	\$0.43
9	Dallas-Ft. Worth, TX	\$0.13
10	Nashville, TN	\$0.64
	National Average	\$0.87

¹⁸ It is important to note that not all funding for pedestrian facilities or safety programs comes from the federal government. Local and state governments also provide significant funding for transportation projects, including those for pedestrians. Unfortunately, this data is not readily available.

Within metropolitan areas, where most walking takes place, spending of federal funds on these vital transportation needs comes to just pennies per person (see Table 3, page 20). A few metro areas are showing increased spending on pedestrian facilities. Orlando, Florida, which has scored poorly on the Pedestrian Danger Index for several years, is investing the most federal funds of any large metro area in pedestrian facilities, at \$1.89 per capita annually. However, the rest of the top ten most dangerous metropolitan areas are all spending below the national average on pedestrian facilities, dragging the average spending for these ten metropolitan areas down to just \$0.62 per person, even with Orlando's high spending (see table above).

One of the metro areas where a very small amount of federal funds was spent on pedestrian facilities is the Dallas-Ft. Worth metro area, which averaged just 13 cents per person annually from 1998 to 2001. Dallas-Ft. Worth averages more than 100 pedestrian deaths each year, in a state with the 3rd highest pedestrian fatalities, and is probably short on pedestrian facilities because so much growth has occurred in an era in which pedestrians have been neglected. Federal spending cannot be directly associated with the safety of the walking environment, because some communities have been investing in sidewalks and other facilities for decades, or have dedicated more local funds to the task. But particularly in communities with a pedestrian safety problem, a failure to use extensive federal resources is an opportunity lost.

States are not taking advantage of the federal funds specifically available for improving bicycling and walking facilities. The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and its successor, TEA-21, provided a historic opportunity for states and metro areas to make it safer and more pleasant to walk. The principle feature of both federal transportation funding bills was and is their flexibility. Unlike previous bills, ISTEA and TEA-21 gave states the ability to "flex" (or transfer) highway funds to transit, and to use funds for pedestrian or bicycling programs. ISTEA and TEA-21 also created a new program, the Transportation Enhancements program, which provides ten percent of a state's Surface Transportation Program funds for projects such as bike paths, trails, and sidewalks, as well as funds for connecting wildlife corridors, historic preservation and other activities.¹⁹ These changes helped increase spending of federal funds on sidewalks, crosswalks, bike paths and trails from just \$11.6 million in 1992 to \$313 million in 2001, a 27-fold increase in just ten years.

¹⁹ See the National Transportation Enhancements Clearinghouse for more information about the twelve activities that qualify for Transportation Enhancements funds, <<http://www.enhancements.org/12teas.htm>>

Table 2. Pedestrian Fatalities and Spending on Walking and Bicycling by State

State	Average Annual Pedestrian Deaths (2000-2001)	Average Annual Pedestrian Deaths per 100,000 Capita (2000-2001)	Portion of All Traffic Deaths that were Pedestrians (2000-2001)	Percent of All Federal Transportation Funds Spent on Bicycle/ Pedestrian Projects (FY1998-FY2001)
Alabama	66	1.47	7%	0.9%
Alaska	9	1.35	9%	2.7%
Arizona	150	2.86	15%	0.7%
Arkansas	40	1.47	6%	1.6%
California	711	2.08	19%	0.6%
Colorado	71	1.62	10%	1.0%
Connecticut	42	1.21	13%	0.8%
Delaware	20	2.47	15%	2.0%
Florida	497	3.06	17%	1.2%
Georgia	144	1.73	9%	1.2%
Hawaii	31	2.50	23%	1.2%
Idaho	9	0.69	3%	0.9%
Illinois	189	1.51	13%	1.0%
Indiana	57	0.93	6%	1.2%
Iowa	23	0.77	5%	0.9%
Kansas	22	0.80	5%	0.7%
Kentucky	54	1.33	7%	1.1%
Louisiana	100	2.24	11%	1.0%
Maine	15	1.13	8%	0.7%
Maryland	97	1.81	16%	0.5%
Massachusetts	81	1.27	18%	1.8%
Michigan	169	1.69	13%	1.0%
Minnesota	44	0.88	7%	1.7%
Mississippi	62	2.16	7%	0.6%
Missouri	86	1.52	8%	1.1%
Montana	11	1.16	5%	1.2%
Nebraska	17	0.96	6%	1.9%
Nevada	46	2.23	15%	0.7%
New Hampshire	9	0.68	6%	1.6%
New Jersey	140	1.66	19%	0.3%
New Mexico	60	3.29	14%	0.9%
New York	344	1.81	23%	0.5%
North Carolina	155	1.90	10%	0.7%
North Dakota	4	0.63	4%	0.8%
Ohio	99	0.87	7%	0.9%
Oklahoma	47	1.36	7%	1.1%
Oregon	56	1.61	12%	1.1%
Pennsylvania	182	1.48	12%	0.3%
Rhode Island	8	0.76	10%	0.8%
South Carolina	95	2.35	9%	0.2%
South Dakota	15	1.92	9%	0.3%
Tennessee	90	1.57	7%	0.7%
Texas	437	2.07	12%	0.3%
Utah	33	1.46	10%	0.8%
Vermont	6	0.98	7%	2.2%
Virginia	97	1.36	11%	0.4%
Washington	72	1.20	11%	1.0%
West Virginia	28	1.52	7%	0.0%
Wisconsin	49	0.90	6%	1.1%
Wyoming	9	1.72	5%	0.8%
Nationwide	4885	1.73	12%	0.7%

Table 3. Spending on Walking and Bicycling in Large Metro Areas (over 1 million residents)

Metro Area	Portion of All Traffic Deaths that were Pedestrians (2000-2001)	Average Yearly Spending of Federal Funds on Bicycle/Pedestrian Projects per Capita (FY1998-FY2001)	Spending Rank
New York-No. New Jersey-Long Island, NY-NJ-CT-PA	27%	\$0.42	31
San Diego, CA	24%	\$0.38	34
San Francisco-Oakland-San Jose, CA	24%	\$0.65	23
Los Angeles-Riverside-Orange Co., CA	23%	\$0.25	41
Miami-Fort Lauderdale, FL	22%	\$0.56	28
Buffalo-Niagara Falls, NY	22%	\$1.00	15
Tampa-St. Petersburg-Clearwater, FL	22%	\$0.41	33
Salt Lake City-Ogden, UT	21%	\$0.85	19
Detroit-Ann Arbor-Flint, MI	19%	\$0.80	20
Chicago-Gary-Kenosha, IL-IN-WI	19%	\$0.64	24
Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH	18%	\$1.48	5
West Palm Beach-Boca Raton, FL	18%	\$0.37	36
Portland-Salem, OR-WA	18%	\$1.22	8
San Antonio, TX	18%	\$0.12	47
Orlando, FL	18%	\$1.89	1
Phoenix-Mesa, AZ	18%	\$0.43	30
Washington-Baltimore, DC-MD-VA-WV	17%	\$0.42	32
Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	17%	\$0.35	37
Pittsburgh, PA	17%	\$0.22	43
Jacksonville, FL	17%	\$0.76	21
Denver-Boulder-Greeley, CO	17%	\$0.62	27
Hartford, CT NECMA	17%	\$1.20	9
Las Vegas, NV-AZ	17%	\$0.14	45
New Orleans, LA	16%	\$1.38	6
Houston-Galveston-Brazoria, TX	16%	\$0.63	26
Dallas-Fort Worth, TX	15%	\$0.13	46
Sacramento-Yolo, CA	15%	\$1.09	12
Memphis, TN-AR-MS	15%	\$0.35	38
Seattle-Tacoma-Bremerton, WA	15%	\$0.72	22
Oklahoma City, OK	14%	\$0.89	17
Louisville, KY-IN	14%	\$0.47	29
Milwaukee-Racine, WI	12%	\$1.00	14
Rochester, NY	12%	\$0.12	48
St. Louis, MO-IL	12%	\$1.71	2
Norfolk-Virginia Beach-Newport News, VA-NC	12%	\$0.37	35
Columbus, OH	12%	\$0.09	49
Raleigh-Durham-Chapel Hill, NC	12%	\$1.09	13
Minneapolis-St. Paul, MN-WI	11%	\$1.68	3
Atlanta, GA	11%	\$1.54	4
Greensboro--Winston-Salem—High Point, NC	11%	\$0.23	42
Charlotte-Gastonia-Rock Hill, NC-SC	11%	\$0.29	40
Kansas City, MO-KS	10%	\$0.89	16
Austin-San Marcos, TX	10%	\$1.14	11
Cleveland-Akron, OH	10%	\$1.34	7
Richmond-Petersburg, VA	10%	\$0.16	44
Indianapolis, IN	9%	\$0.86	18
Nashville, TN	9%	\$0.64	25
Grand Rapids-Muskegon-Holland, MI	9%	\$1.15	10
Cincinnati-Hamilton, OH-KY-IN	8%	\$0.30	39

Recommendations for State and Federal Action

Over the last few years, many communities have taken steps to improve pedestrian safety. Concerned citizens have performed thousands of “walkability audits” that identify hazards to walkers. Local Safe Routes to Schools programs focus on improving safety on the walk to school and directing new resources to making walking safer. Walk to School Day in October each year encourages children to walk, while addressing safety concerns with innovative ideas such as the “walking school bus.” Public health officials are pushing for programs that create a “pedestrian seductive environment” to encourage walking. Many communities have “calmed” neighborhood streets with designs that slow traffic and give greater priority to those on foot. You can find more information about some of these efforts in *Resources*, beginning on page 25 of this report.

While community groups have worked in some cases with transportation officials, the effort to create a better walking environment would be much more effective if state and national transportation agencies embraced walking as a transportation priority by adopting the following recommendations:

Match the Level of Funding to the Level of the Problem. Since 12 percent of traffic fatalities are pedestrians, it stands to reason that a similar amount of safety funding should be spent on projects protecting pedestrian safety. Investments in pedestrian safety should be targeted to the areas where the most walkers are killed.

Create Walk-Friendly Streets. State departments of transportation and local governments (and their agencies) should build-in safe access for bicyclists and pedestrians as a baseline requirement for all non-restricted transportation facilities. Many cities now upgrade their sidewalks and add bike lanes as part of routine maintenance and reconstruction of streets.

Give Funding to Those Who Own the Roads. Increase local control by directing federal funds to the local governments (and their agencies) that own the infrastructure where most walking takes place. In California, where a state law suballocates federal funds to regional agencies, local governments may invest more in bicycling and walking facilities.

Include a Safe Routes to School Program in TEA-3. Renewal of the federal transportation law should include funding for improving pedestrian safety around schools, including facilities such as crosswalks, sidewalks, and traffic calming, as well as safety education.

Require Better Data Collection. Presently, data collected by most transportation agencies does a poor job of telling us the who, why, where, and when of pedestrian activity. Data collection for pedestrians must go beyond the traditional method of focusing solely on the work commute (roughly three-quarters of all trips are now non-work purposes) and should better encompass overall levels of pedestrian activity through measures of miles walked and intersection-specific pedestrian activity levels. Walking distance and the number of trips made by foot, by bicycle, and by children should be an integral part of all traffic data collected by Metropolitan Planning Organizations, state Departments of Transportation (DOTs), the U.S. Department of Transportation and the U.S. Census in order to provide better information on pedestrian mobility, exposure and safety.

Require Better Pedestrian Performance Measures. Transportation programs and the agencies that have responsibility for running them have only recently started to develop key performance measures that can tell the public how well the transportation system is meeting the needs of the public. While most of these performance measures focus on traffic congestion and traffic mobility, new pedestrian safety, service and convenience measures should be developed and better utilized at all levels of government. Significant funding to help local governments develop new pedestrian performance measures should be included in the renewal of the federal transportation bill in 2003.

Prioritize Access by Foot. When siting and designing schools, post offices, grocery stores, employment centers, and other frequent destinations, ensure that the locations are accessible to walkers.

Methodology

Pedestrian Fatalities

The National Highway Traffic Safety Administration collects data on every traffic fatality (pedestrian or otherwise) occurring on U.S. roadways. To determine how many pedestrians were killed in a given year and county, STPP queried NHTSA's Fatality Analysis Reporting System (FARS) for pedestrians who suffered fatal injuries. We then aggregated the county-level data to the state, Metropolitan Statistical Area (MSA), Consolidated Metropolitan Statistical Area (CMSA), or New England County Metropolitan Area (NECMA) for some 330 metro areas. Dividing this figure by the appropriate population estimate from the U.S. Census Bureau, and multiplying by 100,000 gave us a yearly fatality rate per 100,000 persons. (See the U.S. Census Bureau for definitions of MSA, CMSA, and NECMA, www.census.gov/population/www/estimates/aboutmetro.html)

FARS also collects data on the age of the pedestrian killed, allowing STPP to calculate the number of children or elderly pedestrians killed by automobiles. New to the FARS database is information about the race and ethnicity of the person killed. This allowed STPP to analyze the significance of race and ethnicity in pedestrian fatalities.

STPP created the "Pedestrian Danger Index" to allow for a truer comparison of metro areas that takes into account the exposure that pedestrians face in a given metro area. For example, while approximately the same number of pedestrians are killed per capita in the New York metropolitan area and in the Dallas-Ft. Worth metro area, the share of work trips made on foot is almost 4 times higher in New York than in Dallas. We calculated the Pedestrian Danger Index by dividing the average yearly fatality rate for a metro area by the percentage of commuters walking to work in that metro area, and then normalizing that figure to 100. Our exposure measure, the percentage of commuters walking to work is provided by the U.S. Census Bureau's 2000 Decennial Census.

Analysis of Roads

In order to better evaluate what makes a place less safe for walking, STPP analyzed the FARS database to determine if certain roads had a higher number of pedestrian deaths than others. STPP queried the FARS database by roadway and then aggregated those deaths by roadway. Unfortunately, in most cases, information on the exact location of a pedestrian death was not provided. However, STPP narrowed the location by examining roadway segments within

counties. U.S. 19 in Tampa-St. Petersburg-Clearwater, for example, appears twice in the listing of the top ten roads for pedestrian deaths, once in Pasco County and once in Pinellas County.

Safety Spending

STPP calculated spending figures from the Federal Highway Administration's Fiscal Management Information System (FMIS) – a massive database containing details on every surface transportation project receiving federal funds. For the purposes of this report, we queried the database for projects with an improvement type related specifically to bicycle and pedestrian programs and facilities (the FMIS database lumps together bicycle and pedestrian projects). The county-level data was then aggregated to the metro area or state-level. Dividing this figure by the appropriate population estimate from the U.S. Census Bureau gives us the amount spent on pedestrian projects per capita. See STPP's December 2002 *Progress* newsletter (www.transact.org) for a more comprehensive analysis as well as more information about this data source.

The percentage of federal funds spent on pedestrian projects was determined by dividing the amount derived above for each state by the total federal funds spent in that state (including funds spent on transit). At the national level, STPP compared this number to the percent of trips taken by foot, from the 1995 Nationwide Personal Transportation Survey.

Resources

Places to Start

Pedestrian and Bicycle Information Center

<http://www.walkinginfo.org> and <http://www.pedbikeinfo.org>

National Center for Bicycling and Walking

<http://www.bikewalk.org>

America WALKs

<http://www.americawalks.org>

Active Living Network

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

Federal Government

Federal Highway Administration Bicycle and Pedestrian Program

<http://www.fhwa.dot.gov/environment/bikeped>

Federal Highway Administration Pedestrian and Bicycle Safety Research

<http://www.tfsrc.gov/safety/pedbike/pedbike.htm>

Federal Highway Administration's Design Guidance for Accommodating Bicycle and Pedestrian Travel

<http://www.fhwa.dot.gov/environment/bikeped/Design.htm>

Federal Highway Administration's Traffic Calming Page

<http://www.fhwa.dot.gov/environment/tcalm>

National Highway Traffic Safety Administration's Pedestrian Safety Programs

<http://www.nhtsa.dot.gov/people/injury/pedbimot/ped>

Access Board

<http://www.access-board.gov>

Advocacy Groups

Smart Growth America

<http://www.smartgrowthamerica.org>

WalkBoston (Boston, MA)

<http://www.walkboston.org>

Pedestrians Educating Drivers on Safety (PEDS) (Atlanta, GA)

<http://www.peds.org>

Transportation Alternatives (New York, NY)

<http://www.transalt.org>

Right of Way

<http://www.rightofway.org>

Tri-State Transportation Campaign (New York-New Jersey-Connecticut)

<http://www.tstc.org>

Congress for the New Urbanism

<http://www.cnu.org>

Project for Public Spaces

<http://www.pps.org>

Walkable Communities, Inc.

<http://www.walkable.org>

Professional Organizations

Association of Bicycle and Pedestrian Professionals
<http://www.apbp.org>

Human Powered Transportation Committee of the American Society for Civil Engineers
<http://www.ascehpt.homestead.com>

Institute for Transportation Engineers
<http://www.ite.org>

American Association of State Highway and Transportation Officials
<http://www.aashto.org>

Transportation Research Board
<http://www.trb.org>

Events

Walk to School Day (USA)
<http://www.walktoschool-usa.org>

International Walk to School Day
<http://www.iwalktoschool.org>

Walk21 International Conference on Walking in the 21st Century
<http://www.americawalks.org/walk21>

Pro Bike/Pro Walk Conference
<http://www.bikefed.org/Conference/conference.htm>

Resources for Communities

Active Living by Design
<http://www.activelivingbydesign.org>

Fehr and Peers Associates, Inc. Traffic Calming website
<http://www.trafficcalming.org>

Institute of Transportation Engineers' Traffic Calming Library
<http://www.ite.org/traffic>

The 2002 Summary of Safe Routes to School Programs
<http://www.transact.org/report.asp?id=49>

Victoria Transport Policy Institute Online Transportation Demand Encyclopedia
<http://www.vtppi.org/tdm>

Surface Transportation Policy Project

<http://www.transact.org>

<http://www.antic.net>

<http://www.tea3.org>