

OKI Regional Pedestrian Plan



720 East Pete Rose Way, Suite 420, Cincinnati, Ohio 45202
(513) 621-6300 / www.oki.org

OKI Regional Pedestrian Plan



Ohio-Kentucky-Indiana Regional Council of Governments
720 East Pete Rose Way – Suite 420
Cincinnati, Ohio 45202

June 2004

The preparation of this document was financed cooperatively by the Federal Highway Administration, the Federal Transit Administration, the Commonwealth of Kentucky Transportation Cabinet, the Ohio Department of Transportation, and the units of local and county government in the OKI region. The opinions, findings, and conclusions expressed in this document are those of the OKI Regional Council of Governments and are not necessarily those of the U.S. Department of Transportation. This report does not constitute a standard, specification, or regulation.

TABLE OF CONTENTS

Introduction	i
Part I – Walking Around OKI	
OKI’s Role in Pedestrian Planning	I - 1
Walking as a Mode of Travel	I - 2
Pedestrians versus Motor Vehicles	I - 5
Local Government Survey	I - 10
Public Comment	I - 12
Vision, Goals and Objectives for Walking	I - 13
Walking into the Future	I - 15
Part II – OKI Walkability Toolbox	
Regulations	
Americans with Disabilities Act	II - 1
Americans with Disabilities Act Accessibility Guidelines	II - 2
Manual on Uniform Traffic Control Devices	II - 6
Environmental Justice/Title VI	II - 7
Local Subdivision Regulations	II - 8
Kentucky Laws Related to Pedestrians	II - 9
Ohio Laws Related to Pedestrians	II - 13
Transportation Equity Act for the 21 st Century	II - 16
Guidelines	
American Association of State Highway and Transportation Officials	II - 18
Safe Routes To School	II - 19
Walking School Bus	II - 20
Pedestrian Level of Service	II - 21
Information	
Pedestrian and Bicycle Information Center	II - 23
Decennial Census of Population and Housing	II - 24
National Highway Traffic Safety Administration	II - 25
Appendix - Public Comments	

Introduction

As part of OKI's program for multimodal transportation planning, pedestrian travel is considered a component of the regional transportation system. For the most part, this involves facilities (sidewalks) incorporated into the street system. As with all modes using the street network, most pedestrian safety issues occur at street intersections requiring a variety of crosswalk treatments. The responsibility for street construction and maintenance is predominantly with local governments, thus many of the recommendations for pedestrian facilities are to the local governments of the OKI region. Through local zoning and subdivision regulations, local communities also exert some control over walkways within private developments. To the extent that new or reconstructed highway projects are undertaken with federal funding, the respective state transportation departments have a responsibility, under federal laws, to accommodate pedestrian travel in these facilities. OKI also has a role in such projects through the administration of the regional Transportation Improvement Program (TIP).

Issues addressed in this plan include:



Everyone is a Pedestrian

Most of our trips, by whatever mode, begin or end with a walk.



30% of the Population Can't Drive

Children and many elderly persons are dependent on others for transportation. Many others are temporarily disabled through injury.



Lack of Sidewalks

Paved sidewalks are not routinely included in road construction.



Pedestrian Travel is More Dangerous Than it Should Be

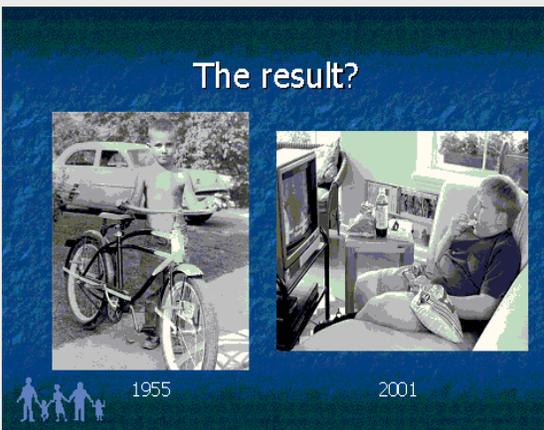
As 8% of all trips are by pedestrians, and 12% of traffic deaths are pedestrians, additional resources should be applied to improving pedestrian safety.

Sprawl

Land development planned primarily for auto access discourages walking by lack of sidewalks, dead end streets, and spread out services.



The result?



Declining Physical Fitness of the Population

Obesity, and related diseases, from reduced physical activity, are becoming a significant public health concern.

Expressed Desire for More Walkable Communities

A growing interest in addressing these issues has been expressed in OKI's land use policy development and public comment on the Regional Transportation Plan.



This plan consists of two parts. Part I, *Walking Around OKI*, contains sections describing OKI's role in pedestrian planning; data about walking as a mode of travel; safety related to pedestrians versus motor vehicles; a survey of pedestrian planning by OKI local communities; public comments; vision, goals, objectives and recommendations; and considerations of future issues besides sidewalks. A difference from the preceding OKI pedestrian plan is a separation of the objectives/recommendations for implementation by OKI and by its member local governments based on their respective responsibilities and operations. Thus the OKI objectives are more policy oriented, while those for local governments are more facility and program oriented.

Part II of the plan, the *OKI Walkability Toolbox*, consists of information, policies, regulations and references useful to local governments and those constituencies advocating for pedestrian rights, safety, and improved facilities.

Although a free-standing plan, this document was prepared in 2004 concurrently with the *OKI 2030 Regional Transportation Plan 2004 Update* and is based on public input to that study, as well as the regional land use policies under development by the OKI Land Use Commission. The recommendations of this Pedestrian Plan are included in summary form in the *OKI 2030 Regional Transportation Plan 2004 Update*.

OKI Regional Pedestrian Plan



Part 1: Walking Around OKI

Part 1 - Walking Around OKI

OKI's Role in Pedestrian Planning

The Ohio-Kentucky-Indiana Regional Council of Governments was established in 1964 under the federal guidelines of the U.S. Bureau of Public Roads, now the Department of Transportation, to coordinate transportation planning and facilities for the Cincinnati metropolitan area. This designation as a Metropolitan Planning Organization is presently codified under the Transportation Equity Act for the 21st Century of 1998 (TEA-21). Under this act, and its predecessor, the Intermodal Surface Transportation Efficiency Act (ISTEA), the general requirements for metropolitan planning are stated as follows:

It is in the national interest to encourage and promote the development of transportation systems embracing various modes of transportation in a manner which will efficiently maximize mobility of people and goods within and through urbanized areas and minimize transportation-related fuel consumption and air pollution. To accomplish this objective, metropolitan planning organizations, in cooperation with the State, shall develop transportation plans and programs for urbanized areas of the State. Such plans and programs shall provide for the development of transportation facilities (including pedestrian walkways and bicycle transportation facilities) which will function as an intermodal transportation system for the State, the metropolitan areas, and the Nation. The process for developing such plans and programs shall provide for consideration of all modes of transportation and shall be continuing, cooperative, and comprehensive to the degree appropriate, based on the complexity of the transportation problems.¹

In 1993, OKI adopted its first transportation plan specifically addressing pedestrian travel: *Creating a Greater-Cincinnati Metropolitan Area Comprehensive Pedestrian System: You Can Get There From Here*. OKI has made progress towards the goals of this plan through greater recognition of pedestrian transportation in the regional transportation plans starting with the 1998 *Looking Ahead – 2020 Metropolitan Transportation Plan*. Pedestrian facilities are also encouraged by the availability of additional priority points for roadway projects with sidewalks funded through OKI's Transportation Improvement Program. Encouragement in the regional plans, along with a growing public interest, has resulted in local planning commissions requiring sidewalks for more new development. OKI documented this public interest recently in the public visioning forums for the Land Use/ Transportation program.

OKI's regional planning program has addressed other aspects of public facilities for which federal funding guidelines required multi-jurisdictional coordination at the metropolitan level. These have included land use, economic development, housing, recreational facilities and open space, water quality, and air quality. Although federal funding cutbacks in the 1980s curtailed much of OKI's land use planning, a revived awareness for addressing the inter-relationships between land use and transportation facilities was reached by the Board of Trustees during

the preparation of the 1993 transportation plan update *Managing Mobility: Year 2010 Regional Transportation Plan*. In that plan, a Land Use Commission was recommended with the following charge:

The commission would also adopt incentives which would encourage county and local land use policies to account for desired relationships between land use, transportation, and other supporting infrastructure. Policies would promote land use patterns consistent with plan objectives to minimize the need for new highway construction and foster travel by transit, bicycle, and walking.²

As a result, the OKI Board of Trustees was appointed as the Land Use Commission. This Commission conducted a visioning exercise for its members in 2002. This was followed by a series of public "Where Do We Grow From Here?" forums to obtain comments on the principle statements developed by the Commission as well as additional ideas for making the region the best it can be. Some of these results are included below under the regional vision for walking and in the goals and objectives of this plan.

The federal transportation act also mandates coordination of transportation planning and the achievement of national air quality standards for the region by means of conformity requirements whereby the vehicle emissions under the recommended transportation system are modeled and compared to the standards for the region to determine attainment of these standards. This work is done through interagency consultation with OKI's planning partners at the local, regional, state and federal levels. The OKI Regional Ozone Coalition conducts public awareness programs for notification of when pollutant levels are likely to exceed standards, and short-term measures to be taken by the public to avoid exceeding the standards. Among these measures is walking to replace short auto trips.

Walking as a Mode of Travel

For most of us, all trips have a walking component as we walk to our cars or the bus and then to our office, home or store. Despite this, there is not much documentation available for even those trips for which walking is the principal or only mode. OKI's travel demand model does not include pedestrian (or bicycle) trips although there is a walk-time component for auto and transit trips to account for time taken walking between the parking location, or the bus trip origin, and destination. Consequently, it is difficult to quantify demand and level of service for pedestrian travel. This, in turn, produces a cyclical tendency for overlooking pedestrian accommodations in new or reconstruction road projects thus failing to encourage walking trips.

Census Journey to Work Data

The Census Bureau (U.S. Department of Commerce) in the Decennial Census of Population, requests workers in a 16% sample of all households to provide the mode used for travel to work. The question is worded:

How did this person usually get to work LAST WEEK? If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.

Table 1, 1990 and 2000 Census of Population Mode of Travel to Work,³ presents these data for the OKI counties and region. For the OKI region in 2000, 2.3% of the workers walked to work. This is a 0.7% drop from the rate of 3% in 1990, or 3,200 walking commuters. By county, the 2000 rates range from 2.9% in Hamilton County to 0.9% in Warren and Boone Counties, which indicates that commuting by foot is more common in the more densely urbanized counties which also include Butler, Campbell and Kenton Counties with over 2%. All nine counties showed a drop in their share of commuters walking to work between 1990 and 2000, presumably because of population loss in the central cities and first ring suburbs, and the suburban auto-dependent characteristics of development during the past decades. This is reflected in the 2.3% regional increase in those driving alone. Losses in commuting share also occurred for carpooling and public transit. There was a 0.6% increase in the number of workers working at home and a nominal increase in those commuting by bicycle.

Table 1
1990 and 2000 Census of Population Mode of Travel to Work

County	Year	Total Workers	Drive Alone	Public			Work at Home			% Walk	1990-2000 Walk Chg
				Carpool	Transit	Bicycle	Walk	Other			
Butler	1990	134,645	110,827	13,910	839	299	5,509	664	2,597	4.1%	
	2000	160,314	134,970	14,546	1,514	319	4,244	715	4,006	2.7%	-1.4%
Clermont	1990	71,376	58,808	9,100	723	40	771	356	1,578	1.1%	
	2000	88,372	74,655	8,781	970	81	873	498	2,514	1.0%	-0.1%
Hamilton	1990	399,406	307,861	43,781	23,076	413	13,474	2,065	8,736	3.4%	
	2000	398,465	314,252	38,717	19,959	539	11,670	2,075	11,253	2.9%	-0.4%
Warren	1990	54,076	46,673	4,930	144	35	792	244	1,258	1.5%	
	2000	76,548	65,807	6,570	587	43	697	258	2,586	0.9%	-0.6%
Boone	1990	28,514	23,382	3,527	371	0	439	149	646	1.5%	
	2000	44,507	37,661	4,505	507	11	416	262	1,145	0.9%	-0.6%
Campbell	1990	39,033	28,883	5,986	1,828	18	1,272	289	757	3.3%	
	2000	42,820	33,870	4,872	1,543	76	1,232	225	1,002	2.9%	-0.4%
Kenton	1990	68,408	53,452	9,032	2,716	24	1,692	379	1,113	2.5%	
	2000	76,169	61,509	8,398	2,552	79	1,635	433	1,563	2.2%	-0.3%
Dearborn	1990	17,308	13,841	2,592	61	3	328	126	357	1.9%	
	2000	22,711	18,857	2,661	108	16	336	178	555	1.5%	-0.4%
OKI Region	1990	812,766	643,727	92,858	29,758	832	24,277	4,272	17,042	3.0%	
	2000	909,906	741,581	89,050	27,740	1,164	21,103	4,644	24,624	2.3%	-0.7%
Mode %	1990		79.2%	11.4%	3.7%	0.1%	3.0%	0.5%	2.1%		
	2000		81.5%	9.8%	3.1%	0.1%	2.3%	0.5%	2.7%		

Sources: 1990 Census of Population, STF-3 Table P49; 2000 Census of Population, SF-3 Table P30

National Household Travel Survey

The U.S. Department of Transportation, Bureau of Transportation Statistics periodically surveys households and individuals regarding trips of all types taken on both a daily basis, and for long distance travel. The National Household Travel Survey was last taken in 2001 and, at the national level, provides data for a variety of trip purposes by mode of travel. For lack of local data, the following findings for daily trips may be considered representative of local patterns:⁴

- 88% of persons 15 years of age and over are licensed drivers.
- On the average, households have 1.8 drivers and 1.9 personal vehicles.
- 8% of the households have no personal vehicle (OKI: 9.8% of households from the Census).
- Individuals average 4 trips per day totaling 40 miles.
- Walking was the second most frequent mode of travel (9%) after personal vehicles (87%).
- 45% of daily trips were for personal and family reasons, 15% were commuting to work.
- 2.8% of the work trips were by walking (OKI: 2.3% from the Census).

Table 2 on the following page presents NHTS daily travel data for trip purpose by mode of travel. This shows how selected modes compare for different types of trips. Walking trips, shown to comprise nearly 9% of all trips, are primarily for social and recreational purposes (34%) followed by family and personal business (22%), and shopping (13%). The large recreational component likely reflects walking for physical fitness. (Bicycling trips are even more dominated by this purpose, (53%).) Five% of all walking trips are to go to or from work, while 3% of all trips to or from work are by foot. The top three most common trip purposes by household cars and trucks are the same, but in different order with family and personal business first (24%), followed by shopping (21%) and social and recreational (17%). To or from work was the fourth most common car/truck trip purpose (16%). Also of note is that the most common trip purpose for local transit (29%) is to or from work by a large margin. The dominance of car/truck travel, 87% of all trips, is shown in the similar percentage distribution in the trip purposes by all modes.

The dominance of walking trips for social, recreational, family and personal business and shopping emphasizes the need for pedestrian facilities in residential areas as well as more compact and mixed-use development patterns.

Table 2
 2001 National Household Transportation Survey
 (travel day person-trips in millions/selected trip modes)

Trip Purpose	Walk		Bicycle		Local Transit		Car/Truck		Other Modes		All Modes	
	#	%	#	%	#	%	#	%	#	%	#	%
To/From Work	1,790	5.1%	290	8.2%	1,187	28.9%	55,674	15.8%	1,952	12.4%	60,893	14.8%
Work-Related												
Business	453	1.3%	17	0.5%	96	2.3%	9,666	2.7%	1,485	9.4%	11,717	2.9%
Shopping	4,714	13.3%	195	5.5%	694	16.9%	73,455	20.9%	657	4.2%	79,715	19.4%
Family/Personal												
Business	7,596	21.5%	304	8.6%	535	13.0%	84,999	24.1%	1,452	9.2%	94,886	23.1%
School/Church	3,508	9.9%	224	6.4%	600	14.6%	29,133	8.3%	6,755	42.9%	40,220	9.8%
Medical/Dental	250	0.7%	4	0.1%	271	6.6%	8,165	2.3%	173	1.1%	8,863	2.2%
Vacation	467	1.3%	72	2.0%	17	0.4%	1,906	0.5%	213	1.4%	2,675	0.7%
Visit												
Friends/Relatives	4,045	11.5%	520	14.8%	292	7.1%	26,805	7.6%	607	3.9%	32,269	7.9%
Other												
Social/Recreational	11,954	33.8%	1,874	53.2%	368	8.9%	59,678	16.9%	1,905	12.1%	75,779	18.4%
Other	341	1.0%	8	0.2%	21	0.5%	1,615	0.5%	265	1.7%	2,250	0.5%
N/A	214	0.6%	15	0.4%	33	0.8%	1,124	0.3%	275	1.7%	1,661	0.4%
Refused	5	0.0%	0	0.0%	0	0.0%	27	0.0%	7	0.0%	39	0.0%
All	35,326	100.0%	3,522	100.0%	4,114	100.0%	352,246	100.0%	15,746	100.0%	410,969	100.0%

Notes: "Car/truck" is the sum of Car, Van, SUV and Pickup truck assuming all are used as household vehicles. "Other modes" included in this table include Other truck, RV, Motorcycle, Commercial/charter airplane, Private/corporate airplane, Commuter bus, School bus, Charter/tour bus, City to city bus, Amtrak/intercity train, Commuter train, Subway/elevated rail, Street car/trolley, Ship/cruise, Passenger line/ferry, Sail/motor boat, Taxicab, Limousine, Hotel/airport shuttle, Other.

Omnibus Household Survey

The Bureau of Transportation Statistics also conducts an annual household survey on travel activities, Omnistats, with the following findings related to walking for 2002.⁵ The Bureau found that 72% of U.S. adult residents (144 million) walked, ran or jogged outside for at least 10 minutes at least once in the month prior to the survey. On the average, people participated in these activities for 51 minutes on each of 13 days during the month, depending on the season. In general, the reasons given for walking matched those presented from the NHTS above. Most important, the survey found that 82% the walking, running and jogging was done along the streets, including 42% within the roadway and 40% on sidewalks. Only 18% was done on walking paths, multi-purpose trails or open land.

Pedestrians versus Motor Vehicles

The finding of the Omnibus Household Survey that 82% of pedestrian trips use the street system indicates a need to insure their safety and compatibility with vehicular traffic. This need is further indicated by the disproportionate share of fatalities compared to trips. While the 2001 National Household Transportation survey found that 8.6% of all trips were by foot, 11.6% of traffic fatalities were pedestrians.⁶ Speeding is a contributing factor in around 30%

of fatal pedestrian crashes. The speed of motor vehicles when striking pedestrians affects their chances of survival. At 20 mph, the pedestrian fatality rate is only 5%, while at 30 mph the chance is 45%, and at 40 mph the chance of being killed goes up to 85%.⁷ These data need to be considered when designing new and reconstruction road projects.

Other national statistics related to pedestrian crashes for 2002 include:⁸

- 4,808 pedestrians were killed in traffic crashes in 2002 (down from 5,549 in 1992).
- 71,000 pedestrians were injured in traffic crashes in 2002.
- 71% of pedestrian fatalities occur in urban areas.
- 78% occur at non-intersection locations.
- 65% occur at night.
- 9% of the pedestrians killed were children 15 and under; 40% of these occurred between 5:00 p.m. and 9:00 p.m.
- 17% of pedestrian fatalities were 70 or older.
- 34% of pedestrians killed had a blood alcohol content level of 0.08 g/dl or greater; 13% of the drivers involved in fatal pedestrian crashes had a similar level of intoxication.
- Pedestrian fatality rates (per 100,000 resident population) were 1.7 for the nation, 0.8 for Ohio, 1.3 for Kentucky and 0.9 for Indiana.
- Speeding vehicles were a contributing factor in 31% of all pedestrian fatalities.

The following information regarding pedestrian crash data for the OKI region was identified:

Mean Streets 2002

The Surface Transportation Policy Project analyzed collision data from the National Highway Traffic Safety Administration (NHTSA) and mode of travel to work data from the Bureau of the Census to evaluate the relative safety for pedestrians in major U.S. metropolitan areas. According to the *Mean Streets 2002* report,⁹ Orlando and other growing sunbelt cities were the most dangerous. A Pedestrian Danger Index was calculated by dividing the annual number of pedestrian fatalities per 100,000 population for 2000 and 2001 by the percentage of commuters walking to work in that metro area, and then normalizing the figures to 100. The report found that the Cincinnati region ranked as the safest of all 49 metro areas in the nation and had the lowest Pedestrian Danger Index, 9.6, and annual fatality rate, 0.7 compared to the national average fatality rate of 1.7 and the highest, 3.7, for Tampa - St. Petersburg.

The report confirms that children are disproportionately the victims in pedestrian collisions accounting for 11% of all such deaths, and the second leading cause of injury-related deaths among children 5 to 14 years.¹⁰ An interesting note is that the rate of child pedestrian deaths has been declining over the last decade. This is likely to be a result of less exposure as children walk less. For example, travel surveys have found that only 10% of children walked to school in 1995 compared to 50% in 1969.¹¹ A consequence has been the increase in child obesity and related health risks.¹²

Available information also shows that minority populations are more vulnerable as pedestrians. Compared to the non-Hispanic white population which comprises 69% of the U.S. population but only 60% of pedestrian deaths, African-Americans comprise 12% of the population, but 20% of the pedestrian deaths. This disparity is less pronounced for Hispanics who comprise 12.5% of the population but 13.5% of the deaths. A possible cause is higher exposure from walking more due to higher transit use and lower auto ownership. This is verified by the 2000 Census Journey to work data.

The funding information from the FHWA Fiscal Management Information System database tends to show that expenditures on pedestrian safety are not proportional to the number of accidents. While 12% of the traffic deaths are pedestrians (plus another 1.6% for cyclists), only 2.7% of federal transportation funds were spent on pedestrian or traffic calming facilities. The report also found that states have under-spent the funding available for these purposes through the Transportation Enhancement program by \$700 million since the last reauthorization in 1998. Selected metro data are shown below.

Table 3
Comparative Danger of Large Metro Areas for Pedestrians¹³

PDI Rank	Metropolitan Area	Pedestrian Danger Index	Avg. Annual Pedestrian Deaths/100K	% Workers Walk to Work	% Pedestrian Deaths of All Traffic Deaths	Annual Federal Spending on Bike/Ped. Per Capita
1	Orlando, FL	79.3	3.3	1.3%	18%	\$1.89
17	Louisville, KY	31.9	1.8	1.7%	14%	\$0.47
32	Indianapolis, IN	19.6	1.0	1.7%	9%	\$0.86
38	Columbus, OH	15.7	1.2	2.4%	12%	\$0.09
44	Cleveland, OH	11.5	0.8	2.1%	10%	\$1.34
49	Cincinnati, OH	9.6	0.7	2.3%	8%	\$0.30
	United States	n/a	1.7	2.9%	12%	\$0.87

Source: Surface Transportation Policy Project – *Mean Streets 2002*

Ohio and Kentucky Crash Data

State records of crash data related to pedestrian injuries and fatalities were obtained for the respective counties in the OKI region for 2000–2002 and are presented in Table 4 on the following page.

OKI also obtained a detailed crash database for the *OKI 2030 Regional Transportation Plan 2004 Update* from Ohio and Kentucky, although it includes collisions only for state and federal routes. These data, for 1999 through part of 2003 for Ohio counties and 2000–2002 for Kentucky, have been used for identifying locations and concentrations of crashes in the seven counties. While these collisions include only a portion of those derived from the county data in Table 4, they do provide more detailed information about the crash and conditions (see Table 5 on the following page).

Table 4
Pedestrian Related Crashes

County	Total	Fatal	Injury	Property	No Driver Error	Rain/Snow	Dark	Road Construction
Butler	51	0	45	6	36	11	--	2
Clermont	29	2	25	2	21	3	--	1
Hamilton	103	2	94	7	54	18	--	3
Warren	26	2	21	3	19	4	--	3
Boone	9	1	6	2	--	2	2	--
Campbell	22	1	17	5	--	3	10	--
Kenton	27	0	29	1	--	3	6	--
Total	267	8	237	26	n/a	44	n/a	n/a

Source: Ohio Department of Public Safety, Kentucky Transportation Cabinet, Kentucky State Police

Table 5
Pedestrian/Motor Vehicle Crashes – Deaths and Injuries

County	Butler	Clermont	Hamilton	Warren	Boone	Campbell	Kenton	Total
2000								
All Deaths	25	18	60	16	8	2	9	138
Pedestrians	0	0	9	1	0	0	0	10
Percent	0.0%	0.0%	15.0%	6.3%	0.0%	0.0%	0.0%	7.3%
All Injuries	4,699	2,922	11,894	1,937	1,120	738	1,543	24,853
Pedestrians	74	24	388	14	3	11	31	545
Percent	1.6%	0.82%	3.3%	0.7%	0.3%	1.5%	2.0%	2.2%
2001								
All Deaths	36	32	55	23	17	8	11	182
Pedestrians	2	2	6	1	1	0	0	12
Percent	5.6%	6.3%	10.9%	4.4%	5.9%	0.0%	0.0%	6.6%
All Injuries	4,122	2,331	10,997	1,627	1,097	705	1,456	22,335
Pedestrians	76	30	446	27	3	14	26	622
Percent	1.8%	1.3%	4.1%	1.7%	0.3%	2.0%	1.8%	2.8%
2002								
All Deaths	28	22	76	17	15	11	15	184
Pedestrians	1	0	5	1	0	1	0	8
Percent	3.6%	0.0%	6.6%	5.9%	0.0%	9.1%	0.0%	4.4%
All Injuries	4,458	2,459	10,934	1,820	1,030	669	1,435	22,805
Pedestrians	66	15	423	15	4	5	24	552
Percent	1.5%	0.6%	3.8%	0.8%	0.4%	0.8%	1.7%	2.4%

Source: Ohio Department of Transportation and Kentucky Transportation Cabinet. Ohio data are for 1999 through part of 2003. Kentucky data are for 2000 through 2002. Crashes are only for state and federal routes and do not include local streets.

Of interest from the source tables is that, for the Ohio crashes, where contributing factors are noted, driver error was not listed as a factor in the six fatal crashes. Also for Ohio, where special areas include road construction zones, none of the nine crashes in those areas were fatalities. The Ohio data identified one pedestrian struck in a school zone in Butler County. The totals for the individual columns for Fatal, Injury and Property exceed that for the Total

column because some of the Kentucky crashes documented multiple persons injured (Ohio data did not identify number of victims).

Hamilton County General Health District

The General Health District prepares an *Injury Surveillance Report* from hospital data for residents of Hamilton County which documents deaths, hospital admissions and emergency room visits by “mechanism” or cause of injury. This includes “Pedestrian” and is further broken down by age of the victim. These data are summarized in Table 6.

Table 6
Hamilton County Pedestrian Crashes by Hospital Treatment by Age

Age	Pedestrian Fatalities		Pedestrian Hospitalizations		Average % Share	Pedestrian Emergency Room		Average % Share
	2000	2001	2000	2001		2000	2001	
< 1	0	0	0	1	0.5%	1	3	0.4%
1-4	1	0	4	0	1.9%	24	16	4.0%
5-9	0	0	25	19	21.1%	76	61	13.6%
10-14	3	1	14	8	10.5%	70	64	13.3%
15-19	1	0	9	12	10.0%	76	64	13.9%
20-24	0	0	1	6	3.3%	44	65	10.8%
25-29	0	0	3	4	3.3%	42	24	6.5%
30-34	0	0	5	5	4.8%	29	44	7.2%
35-39	0	0	4	6	4.8%	31	54	8.4%
40-44	0	0	10	17	12.9%	24	34	5.7%
45-54	1	1	10	9	9.1%	37	55	9.1%
55-64	1	0	5	15	9.6%	12	15	2.7%
65-74	3	1	4	5	4.3%	9	11	2.0%
75-84	0	2	1	3	1.9%	10	6	1.6%
> 85	0	0	2	2	1.9%	2	6	0.8%
Total Pedestrians	12	5	97	112	100.0%	487	522	100.0%
Total All	393	410	4,784	4,254		82,421	78,154	
% Pedestrians	3.1%	1.2%	2.0%	2.6%		0.6%	0.7%	

Source: Hamilton County General Health District, Injury Surveillance Report 2000 and 2001, Hamilton County, Ohio: 2003

A significant point made in the beginning of the report is the relative severity of injuries as represented by a pyramid where the topmost segment represents the most severe injuries, those resulting in death. The second, broader segment represents those non-fatal injuries requiring hospital admission. The third, still broader segment are those injuries requiring emergency room treatment. The broadest base of the pyramid represents an unknown number of injuries that are treated outside of a hospital by physicians, urgent care centers or by the victim. The point is that the number of injuries (all causes), and the related costs and suffering, are considerably under-represented by the available statistical data.

Another conclusion from the data is that children and young adults are most often the victims of pedestrian/vehicle collisions. While the number of fatalities is too low to make many

statistical generalizations, it is shown that, while the elderly are less likely to be struck, they are more likely to die from their injuries.

Finally, The data show that pedestrian collisions account for only 2% of those treated for injuries at local hospitals. Falls are the most frequent causes for hospital treatment followed by firearms and poisonings (including drugs). Injuries to motor vehicle occupants in collisions account for around 10% in all three reported classes of injury.

The General Health District does consider the geographical distribution of the hospital records, however this is presented by jurisdiction of residence rather than location of the collision.

Local Government Survey

As is the case with many aspects of transportation planning, the implementation of plan recommendations most often falls to local governments. It is at this level that land use regulations are administered, applications for special transportation facilities are initiated, that local streets and sidewalks are built and maintained, and specific public facility requests are addressed. Many of the recommendations of OKI's previous regional pedestrian plan were in the realm of local government functions.

OKI initiated a survey of selected local jurisdictions (counties and larger cities) to determine how these recommendations of the past plan and the concerns expressed in the public outreach activities, are being addressed. In the context of pedestrian needs, this focused on the provision of paved sidewalk facilities. In the past (1960s and 70s) sidewalks in new residential development were not routinely provided. This, in combination with curvilinear cul-de-sac street patterns, discourages walking for either errands or recreation by requiring walking in the roadway and via circuitous routes to specific destinations. Growing public concern about quality of urban life in terms of continuation of growing land development patterns, alternative travel modes and physical fitness, have recently begun influencing public policy favoring providing sidewalks. Also, in 1990, the Americans with Disabilities Act adopted standards requiring corner curb ramps to sidewalks to facilitate wheel chair users and those with difficulty walking.

This survey sought to find out if local governments were involved with pedestrian-oriented planning, were requiring sidewalks for new development, were complying with ADA guidelines for curb ramps, and if any Safe Routes to Schools projects are occurring. The survey included all eight counties in the region and eight larger/fast developing cities.¹⁴ Townships in Ohio and Indiana are generally assisted by the county planning commissions with subdivision administration and were not surveyed.

- Regarding pedestrian planning, only a few cities and counties have prepared a plan that analyzes the sidewalk component of the street system to determine completeness and prioritizes existing needs. Significantly, two of these communities, Florence and Mason, are among the fastest growing in the region. Boone, Kenton and Warren Counties reported having sidewalk plans. (Although not surveyed, Anderson Township and Miami

Township (Clermont) have also prepared pedestrian plans). Some of these studies considered crash data. Counts of pedestrian traffic have only been done by a few cities in conjunction with individual intersection or development projects.

- All jurisdictions surveyed now require sidewalks in new residential and business development. In some cases they are not required where residential densities are less than one unit per acre. In other communities, sidewalks are permitted on only one side of the street for short cul-de-sacs, or intermediate densities. Minimum sidewalk width is normally four feet in residential areas and five feet in business areas. Cincinnati requires ten feet sidewalks in the downtown area. Waivers of these requirements are generally rare.
- Requirements of the Americans with Disabilities Act for adding curb ramps at intersections are generally being met in the region. Most of the surveyed jurisdictions have substantially completed retrofitting existing intersections with ramps. All have policies requiring curb ramps in new development and with any street reconstruction or paving projects. New ramps will incorporate the truncated domes to provide a tactile surface for the visually impaired.

In 1992, subsequent to the requirements for incorporating curb ramps at intersections, the Department of Justice required all public entities with over 50 employees to prepare a Transition Plan to cover the implementation of provisions to insure the accessibility of both programs and physical facilities to disabled persons. The Transition Plan is also to include a schedule for implementing these accommodations for access to the following facilities: state and local government offices, transportation facilities, places of public accommodation, places of employment and other locations and routes used by residents with disabilities.¹⁵ Transition Plans were to be completed by July 1992 and the recommended improvements by January 1995. Around half of the surveyed jurisdictions reported having a Transition Plan, which included most of the cities. It is possible that local staff turnover during the past ten years has resulted in the loss of these plans.

- The survey also asked about any Safe Routes to Schools programs in the region. Only Walton-Verona High School in Boone County was mentioned as having tried this program for encouraging walking and biking to reduce motor vehicle trips.

In summary, public concerns related to walkability, presented in more detail in the following section, are being addressed through inclusion of sidewalks in new development. Changes in growing development patterns toward “smart growth/new urbanism” are not so obvious, but are being dealt with through OKI’s Land Use Commission.

Public Comment

OKI's outreach activities for various projects have consistently found support for improving conditions for using alternative modes to auto travel including transit, walking and bicycling. Some of these activities are described below, while specific comments are provided in Appendix A.

OKI Land Use Commission

The mandate of OKI's Board of Trustees in 1993 to better consider the linkages between transportation and land use are being addressed through a Land Use Commission comprised of the OKI Board of Trustees. An extensive planning program is being carried out by OKI staff to fulfill this directive. Public outreach activities, in the form of community forums held in each county from September 16 – 26, 2002, resulted in numerous comments from the 335 attendees. Those addressing walking and pedestrian needs were typically concerned with two issues. First is the need for sidewalks and traffic calming measures to facilitate walking for utilitarian and recreational purposes. Second is the need for more efficient land use development patterns that would facilitate walking by mixing residential and certain business uses with the result of reducing travel distances between homes and frequently needed services. More efficient development patterns also implies an interconnected street system that would provide more direct routes to destinations and alternative routes more suitable for non-motorized modes and to avoid congestion.

OKI 2030 Regional Transportation Plan 2004 Update

The preparation of this *Pedestrian Plan* update is being undertaken at the same time as the update of the multimodal *Regional Transportation Plan*. A round of informational public meetings was held in October 2003 to present background information and regional issues. A separate station at these three meetings was dedicated to the issues for the pedestrian plan update. Public opinion survey sheets provided several responses encouraging pedestrian travel improvements. These are also included in Appendix A. The questionnaire also requested opinions on the significance of expanding public transportation including buses, rail, bicycling and walking. All but one respondent indicated that this is "very important", one chose "somewhat important" and none chose "not important". A second round of six public meetings on the plan recommendations was held during April 2004. A similar questionnaire was provided to receive comments and similar support for transit and non-motorized transportation was expressed. The response is documented in more detail in Appendix A.

OKI Environmental Justice

OKI has increased its efforts to make sure that the projects recommended in its transportation planning do not adversely affect certain populations disproportionately to the community at large. These Environmental Justice (EJ) populations include low income, disabled, racial minorities, and households with no personal vehicles. The issues being addressed in the update of this plan were presented to the Environmental Justice Advisory Committee at its September 2003 meeting. Although specific recommendations were not presented, there was a consensus of the committee that improvements addressing these issues would generally be beneficial to the EJ populations.

Eastern Corridor Study

OKI completed a major investment study of transportation needs in eastern Hamilton and western Clermont counties resulting in the Eastern Corridor Plan. This plan is being advanced under the leadership of the Hamilton County Transportation Improvement District which has undertaken extensive work with target neighborhoods in the corridor to develop future target year development scenarios as envisioned by the residents of these neighborhoods. The corridor basically includes communities along US 50 and SR 32 between downtown Cincinnati and the Batavia area. Scenarios envisioned by these neighborhood focus groups recommend more compact development and more use of transit, walking and biking.

Citizens for Civic Renewal

This organization (CCR) has been working to promote citizen interest in a variety of regional issues and to coordinate this work with that of governmental and business organizations. On December 6, 2003, CCR conducted a forum "Transportation in Greater Cincinnati: Challenges, Choices and Change." This included presentations on land use and transportation followed by an opinion survey of approximately seventy people attending. In response to the question "How important is it to have these (following) services in our region?", the highest ranked response of sixteen choices was "Make walking more attractive" at 7.58 on a scale of ten. This was followed by "Encourage carpools and vanpools" (7.34), "Make biking safer, easier, fun" (7.23), and "Light rail transit/modern streetcars" (7.06). In general the group favored smart growth land use principles and improved regional mass transit.

To summarize the public comment input, there may be a "chicken and egg" relationship between public concerns about transportation and land use, and the federal ISTEA 1991 planning guidelines. These now direct state and regional transportation agencies to address the impact of transportation recommendations on regional development as well as mandating the inclusion of walking and bicycling in the multi-modal mix for regional mobility.

VISION, GOALS AND OBJECTIVES FOR WALKING

The vision statement for the *OKI Regional Pedestrian Plan* is derived from work by the OKI Land Use Commission. This included a Future Vision Assessment, conducted in June and August 2002, and a series of eight public workshops, one in each county, held in September 2002. As a result, thirteen "Vision for Stewardship Principles" were adopted in October.¹⁶ The following principle addressing transportation specifically addresses pedestrian travel in its regional context and is incorporated as part of this plan:

TRANSPORTATION CHOICES – IN 2020, TRANSPORTATION CHOICES WILL BE AVAILABLE THROUGHOUT THE REGION, INCLUDING PUBLIC TRANSIT, AUTOMOBILES, BIKING AND WALKING, IN A MANNER THAT OPTIMIZES ACCESSIBILITY, EFFICIENCY, MOBILITY AND AFFORDABILITY.

The following goals represent general statements of purpose, specific to walking, intended to achieve the stated vision. Objectives, in turn, are intended to be specific measures and actions that can be undertaken toward achieving the respective goals. The objectives are further

grouped for implementation either by OKI or its member local governments. This is in consideration of the functional differences between OKI as a regional planning agency and the local jurisdictions with administrative and implementation responsibilities.

GOAL: IMPROVE THE PEDESTRIAN INFRASTRUCTURE IN TERMS OF AVAILABILITY, CONTINUITY, AESTHETICS, SAFETY AND ACCOMMODATION OF PERSONS WITH DISABILITIES.

OKI Objectives

- Include pedestrian facilities as part of the regional multi-modal transportation planning program.
- Require paved sidewalks and intersection crosswalks in urban highway improvements funded through the OKI Transportation Improvement Program for all roads other than freeways.
- Require paved shoulders suitable for bicycling and walking for rural roadways funded through the TIP.
- Determine if sidewalk improvements are eligible for funding with Ohio gas tax and license receipts.
- Develop OKI GIS capabilities to evaluate pedestrian level of service.

Local Government Objectives

- Include pedestrian facilities in local thoroughfare and transportation plans.
- Enforce subdivision regulation requirements for sidewalks when processing residential or business development proposals.
- Provide appropriate pedestrian linkages between neighborhoods and commercial, educational and recreational land uses.
- Prioritize the construction of missing links in local sidewalk systems.
- Support acquisition and conversion of abandoned railroad corridors for shared use trails.

GOAL: INCREASE THE NUMBER OF TRIPS TAKEN BY WALKING WITH THE INTENTION OF REDUCING MOTOR VEHICLE USE, PRESERVING AIR QUALITY AND IMPROVING PERSONAL FITNESS.

OKI Objectives

- Continue to advocate walking as an alternative travel mode during smog alerts.
- Recommend inclusion of walking facilities and compact pedestrian friendly development patterns in the regional land use policy plan.
- Provide technical assistance to member jurisdictions related to improving walkability in the region.
- Provide a forum for meaningful, required citizen participation.

Local Government Objectives

- Maintain sidewalk systems to insure smooth pavement, visible crosswalk designation, removing vegetation encroachment.

- Promote community walking events for recreation utilizing potential utilitarian routes.
- Initiate Safe Routes to School programs to encourage children to walk, bike and know their communities.
- Support the mix of land uses and activities that will maximize the potential for pedestrian travel for development or redevelopment projects.
- Provide pedestrian linkages along transit routes.

GOAL: IMPROVE THE SAFETY OF PEDESTRIAN TRAVEL WITH RESPECT TO REDUCING CONFLICT WITH MOTORISTS ON PUBLIC ROADS AND IN PRIVATE PARKING LOTS.

OKI Objectives

- Increase regional educational activities.
- Encourage local compliance with provisions of the Americans with Disabilities Act related to public access

Local Government Objectives

- Increase local education and enforcement activities.
- Adjust crosswalk signal timing to provide adequate time for safe crossing. Provide additional time where elderly or disabled persons are likely to be present.
- Enforce laws related to speed limits and yielding to pedestrians at crosswalks.
- Ensure compliance with Americans with Disabilities Act guidelines for public accessibility regarding sidewalk width, grades, curb ramps, medians and lighting.
- Apply techniques for separating pedestrian movement from motor vehicles in large parking lots through zoning and subdivision regulations.

Walking Into the Future

“Why ‘think pedestrian’? Why plan for an element of the transportation spectrum that will find its own way, in essence take care of itself? It is simply because every trip, be it by automobile, public transit, even bicycle, begins and ends with pedestrian movement. Every trip. Not only that, but the time has finally come when we can no longer afford, both monetarily and environmentally, to downplay the role of viable alternative modes of transportation.”¹⁷

This statement, from the beginning of OKI’s previous pedestrian plan of 1993, summarizes the changing emphasis in transportation at that time away from the predominantly automobile oriented accommodation prior to the Intermodal Surface Transportation Efficiency Act of 1991. As previously stated in this report, that legislation attempted to reorient transportation planning from accommodating the movement of vehicles to the movement of people and goods. Thus, federal guidelines and OKI’s regional plan now include non-motorized modes of cycling and walking as components of the regional multi-modal transportation system.

Since our last plan in 1993, a public health concern for the rising incidence of obesity and related illnesses, such as diabetes and heart disease, has tied these conditions to transportation. Specifically, at issue is the lack of physical activity resulting from the reliance

on auto travel, particularly for trips that used to be taken by foot or bike. Consequently more “active living” behavior, as distinguished from “exercise” has become a consideration for transportation planning.

Besides Sidewalks

Our previous plan also observed: “What we have seen is that while simply building sidewalks may facilitate pedestrian movement, truly encouraging pedestrianization requires a conscious effort. One must provide not only appropriate improvements to the existing physical environment – many times that environment must be tailored in order to make the pedestrian comfortable, thereby encouraging pedestrian activity.”¹⁸

The *National Bicycling and Walking Study* summarizes factors influencing a person’s decision to make a trip by bicycle or foot. This is represented in the following chart.¹⁹ Many of these factors are subjective and based on perceptions that may be right or wrong.

Initial Considerations may include awareness of biking or walking as an option for a trip. This may include habits for taking the car for short trips where walking or biking is a reasonable option. (Nearly half of all trips are three miles or less.) Distance and/or time may also be a conscious consideration in choosing the car. Individual attitudes and values come into play at this point. Some may consider biking or walking as inferior modes to the car. Others, with an attitude favoring the environment and personal health, may prefer non-motorized travel when feasible. A person’s perception of their own physical capabilities to bike or walk may also be a factor, real or underestimated. Finally, there



are situational constraints to choosing to walk or bike such as needing a car at work, having to drop children off at daycare, or carrying bulky items.

Trip Barriers are most often represented by the concern for safety while making the trip. This may involve having to walk in the street where no sidewalks are available and lack of convenient or safe crosswalks. People with mobility limitations who can’t drive are particularly disadvantaged. The interdependency between transit use and walking requires sidewalk access to bus stops and, preferably, shelters from the weather. Cyclists may lack the necessary skills for riding with motor vehicle traffic. Aside from the lack of facilities, safety may also be an enforcement issue where motorists are not yielding to pedestrians as required by law. Land development patterns often result in indirect routes to nearby destinations unnecessarily increasing travel distance. Barriers are also a frequent problem in the Cincinnati region. These may include significant hills, river and expressway crossings, or concerns for personal safety. Environmental conditions are also a major consideration such as exposure to rain and snow, heat and humidity, and traveling at night. Aesthetic conditions may also be a factor where unsightly development and traffic could be screened with landscaping or

separation. Most of these trip barriers can be coped with through facility improvements, education, and adaptive equipment.

Destination Barriers more often affect bicyclists than pedestrians such as where no parking facilities are available for secure bicycle storage. Attitudes at the workplace of co-workers or administration can also either inhibit or promote walking and biking. A flex-time program can encourage these modes by allowing more travel time or shifting travel to avoid peak traffic.

These factors from the *National Bicycling and Walking Study* serve to illustrate the range of resources needed to encourage the use of alternative modes of travel to automobiles – including transit as well as walking, as addressed in this plan, and bicycling, as addressed in the *Regional Bicycle Plan*.

Part II of this *Regional Pedestrian Plan* is a toolbox of information, resources and techniques intended to assist local governments in the OKI region and OKI's staff and committees with facilitating pedestrianization with facilities, education and encouragement.

¹ Section 134. Metropolitan planning, Intermodal Surface Transportation Efficiency Act of 1991, United States Congress.

² *Managing Mobility: Year 2010 Regional Transportation Plan*, Chapter 7 – Recommendations, OKI Regional Council of Governments.

³ 1990 and 2000 Decennial Census of Population, U.S. Dep't. of Commerce, STF-3 Table P49 and SF-3 Table P30

⁴ Highlights of the 2001 National Household Travel Survey, Bureau of Transportation Statistics, US Department of Transportation, 2003.

⁵ Pedestrian Travel During 2002, Volume 3, Issue 1, Omnistats, Bureau of Transportation Statistics, U.S. Dep't. of Transportation, July, 2003.

⁶ Traffic Safety Facts 2001 – Pedestrians, National Highway Traffic Safety Administration, U.S. Dep't. of Transportation, 2003.

⁷ Killing Speed and Saving Lives, United Kingdom Dep't. of Transportation, London, 1987 (as referenced in Pedestrian Facilities Users Guide, FHWA, US Dept. of Transportation, March, 2002).

⁸ Traffic Safety Facts 2002 – Pedestrians. National Highway Traffic Safety Administration, U.S. Dep't. of Transportation, 2004.

⁹ Mean Streets 2002, by Michelle Ernst and Barbara McCann, Surface Transportation Planning Project, November, 2002.

¹⁰ National Safe Kids Campaign. *Report to the Nation on Child Pedestrian Safety*. October 2002.

¹¹ Federal Highway Administration. *Nationwide Personal Transportation Survey 1995*.

¹² National Center for Health Statistics, Centers for Disease Control and Prevention. *Prevalence of Overweight Among Children and Adolescents*. United States, 1999.

¹³ Mean Streets 2002, Surface Transportation Policy Project.

¹⁴ Survey respondents included Boone, Butler, Campbell, Clermont, Dearborn, Hamilton, Kenton, and Warren Counties and the cities of Cincinnati, Fairfield, Hamilton, Harrison, Loveland, Mason, Middletown and Oxford.

¹⁵ Section 2.31, Transition Plans, Public Right of Way Guide, Accessible Rights-of-Way – a Design Guide, Nov. 1999.

¹⁶ Vision for Stewardship, OKI Land Use Commission, Oct. 10, 2002.

¹⁷ Creating a Greater Cincinnati Metropolitan Area Comprehensive Pedestrian System: You Can Get There From Here, Page 1, OKI Regional Council of Governments, 1993.

¹⁸ Ibid.

¹⁹ The National Bicycling and Walking Study – Transportation Choices for a Changing America, (FHWA-PD-94-023) Federal Highway Administration, U.S. Dep't. of Transportation, 1994, Page 22.

OKI Regional Pedestrian Plan



Part 2 - OKI Walkability Toolbox

OKI WALKABILITY TOOLBOX

REGULATIONS

TOOL: Americans with Disabilities Act (ADA)

DESCRIPTION

¹In order to meet the needs of all sidewalk users, designers must have a clear understanding of the wide range of abilities that occur within the population. Sidewalks, like roadways, should be designed to serve all users. This includes children, older people, parents with strollers, pedestrians who have vision impairments, and people using wheelchairs and other assistive devices. Just as a roadway will not be designed for one type of vehicle, the design of a sidewalk should not be limited to only a single type of pedestrian user. Because the sidewalk is the base unit of mobility within our overall system of transportation, every route and facility must be usable.

Pedestrian facility design and operation must comply with the accessibility standards in the *Architectural Barriers Act (ABA) of 1968*, the *Rehabilitation Act of 1973 (Section 504)*, and the *Americans with Disabilities Act (ADA) of 1990*. The 1991 reauthorization of the Federal transportation legislation, the *Intermodal Surface Transportation Efficiency Act (ISTEA)*, specifically called for integrating pedestrian travel into the transportation system. ISTEA increased the federal-aid funding options for pedestrian facilities and programs. In 1998, the *Transportation Equity Act for the 21st Century (TEA-21)* extended the opportunities in ISTEA and increased the funding available for pedestrian facilities.

Implementing regulations of Title II of the ADA, which covers state and local governments, also address “communications and information access”, requiring “effective communications” with persons with disabilities. In the sidewalk/street crossing environment, this would include accessible pedestrian signals, markings, and signage. The latest version of the *Manual on Uniform Traffic Control Devices (MUTCD)* contained standards on *Accessible Pedestrian Signals (APS)* that have audible, visual and vibrotactile features. These standards represent the minimum; designers should use more conservative design parameters whenever possible.

Temporary and alternative pedestrian routes where sidewalks are obstructed by work zones must meet accessibility standards as well. Pedestrians who must cross the street and then cross back again in order to continue on to their destination will be exposed to significantly increased risk from vehicles.

REFERENCES:

Designing Sidewalks and Trails for Access, Part 1 (Review of Existing Guidelines and Practices) FHWA-HEP-99-006

Designing Sidewalks and Trails for Access, Part 2 (Best Practice Design Guide) FHWA-HEP-01-027

http://www.access_board.gov

<http://www.mutcd.gov>

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

¹ This text is taken from *Accessible Sidewalks and Street Crossings*, Publication No. FHWA-SA-03-017, U.S. Dep't. of Transportation, Federal Highway Administration, by Levenson Boodlal PE.

OKI WALKABILITY TOOLBOX

REGULATIONS

TOOL: Americans with Disabilities Act Accessibility Guidelines - Curb Ramps

DESCRIPTION

This document contains scoping and technical requirements for accessibility to buildings and facilities by individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990. These scoping and technical requirements are to be applied during the design, construction, and alteration of buildings and facilities covered by titles II and III of the ADA to the extent required by regulations issued by Federal agencies, including the Department of Justice and the Department of Transportation, under the ADA and the Access Board, publisher of the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

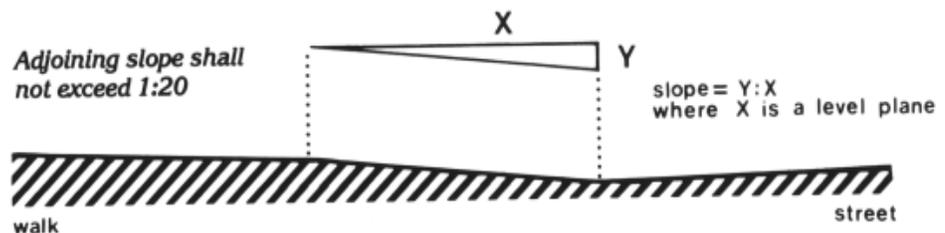
4. ACCESSIBLE ELEMENTS AND SPACES: SCOPE AND TECHNICAL REQUIREMENTS.

4.7 Curb Ramps.

4.7.1 Location. Curb ramps complying with 4.7 shall be provided wherever an accessible route crosses a curb.

4.7.2 Slope. Slopes of curb ramps shall comply with 4.8.2. The slope shall be measured as shown in Fig. 11. Transitions from ramps to walks, gutters, or streets shall be flush and free of abrupt changes. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.

Figure 11
Measurement
of Curb Ramp
Slopes



The ramp slope is a ratio equal to the vertical rise (y) divided by the horizontal run (x). It is equal to the tangent of the angle that the plane of the ramp surface makes with a horizontal (level) plane. For a curb ramp, the adjoining slope at walk or street shall not exceed 1:20.

4.7.3 Width. The minimum width of a curb ramp shall be 36 in (915 mm), exclusive of flared sides.

4.7.4 Surface. Surfaces of curb ramps shall comply with 4.5.

4.7.5 Sides of Curb Ramps. If a curb ramp is located where pedestrians must walk across the ramp, or where it is not protected by handrails or guardrails, it shall have flared sides; the maximum slope of the flare shall be 1:10 (see Figure 12a). Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp (see Figure 12b).

OKI WALKABILITY TOOLBOX

TOOL: Americans with Disabilities Act Accessibility Guidelines - Curb Ramps (continued)

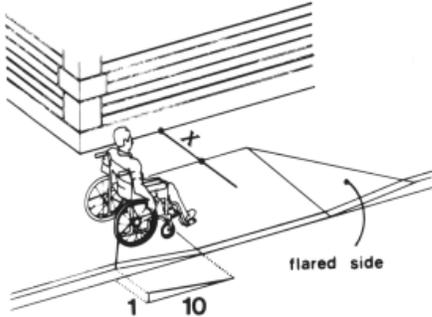


Figure 12a
Sides of Curb Ramps Flared Sides

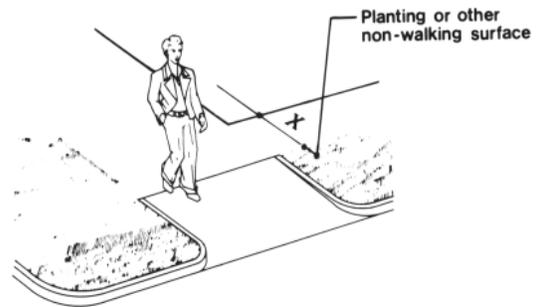


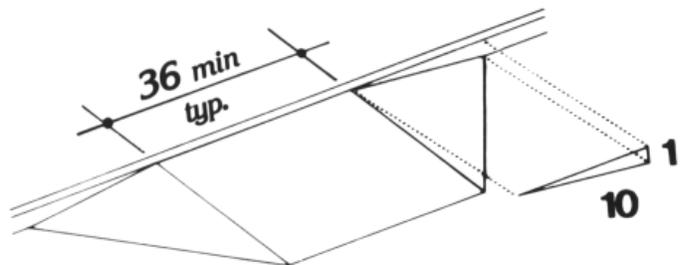
Figure 12b
Sides of Curb Ramps Returned Curb

Figure 12a: Sides of Curb Ramps Flared Sides - This figure shows a typical curb ramp, cut into a walkway perpendicular to the curb face, with flared sides having a maximum slope of 1:10. The landing at the top, measured from the top of the ramp to the edge of the walkway or closest obstruction is denoted as "x". If x, the landing depth at the top of a curb ramp, is less than 48 inches, then the slope of the flared side shall not exceed 1:12. *Note: If X is less than 48 inches, then the slope of the flared side shall not exceed 1:12*

Figure 12b: Sides of Curb Ramps Returned Curb - Where the curb ramp is completely contained within a planting strip or other non-walking surface, so that pedestrians would not normally cross the sides, the curb ramp sides can have steep sides including vertical returned curbs.

4.7.6 Built-up Curb Ramps. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes (see Figure 13).

Figure 13
Built-Up Curb Ramp



OKI WALKABILITY TOOLBOX

TOOL: Americans with Disabilities Act Accessibility Guidelines - Curb Ramps (continued)

A built-up curb ramp extends outward from the curb and slopes to the ground surface. The sides must also be tapered from the ramp surface to the ground, with a maximum slope of 1:10, so that there are no drop-offs along the edges.

4.7.7 Detectable Warnings. A curb ramp shall have a detectable warning complying with 4.29.2. The detectable warning shall extend the full width and depth of the curb ramp.

4.29.2 Detectable Warnings on Walking Surfaces. Detectable warnings shall consist of raised truncated domes with a diameter of nominal 0.9 in (23 mm), a height of nominal 0.2 in (5 mm) and a center-to-center spacing of nominal 2.35 in (60 mm) and shall contrast visually with adjoining surfaces, either light-on-dark, or dark-on-light. The material used to provide contrast should contrast by at least 70%. Contrast in percent is determined by:

$$\text{Contrast} = [(B1 - B2)/B1] \times 100$$

where B1 = light reflectance value (LRV) of the lighter area and B2 = light reflectance value (LRV) of the darker area.

Note that in any application both white and black are never absolute; thus, B1 never equals 100 and B2 is always greater than 0.

4.7.8 Obstructions. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

4.7.9 Location at Marked Crossings. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides (see Fig. 15).

4.7.10 Diagonal Curb Ramps. If diagonal (or corner type) curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48 in (1220 mm) minimum clear space as shown in Fig. 15(c) and (d). If diagonal curb ramps are provided at marked crossings, the 48 in (1220 mm) clear space shall be within the markings (see Fig. 15(c) and (d)). If diagonal curb ramps have flared sides, they shall also have at least a 24 in (610 mm) long segment of straight curb located on each side of the curb ramp and within the marked crossing (see Fig. 15(c)).

4.7.11 Islands. Any raised islands in crossings shall be cut through level with the street or have curb ramps at both sides and a level area at least 48 in (1220 mm) long between the curb ramps in the part of the island intersected by the crossings (see Fig. 15(a) and (b)).

<http://www.access-board.gov/adaag/html/adaag.htm>

OKI WALKABILITY TOOLBOX

TOOL: Americans with Disabilities Act Accessibility Guidelines - Curb Ramps (continued)

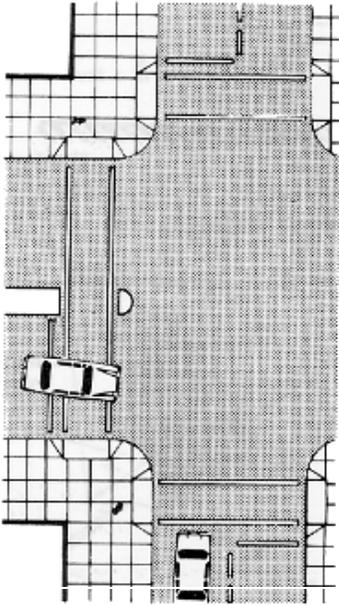


Figure 15a
Curb Ramp at Marked Crossings

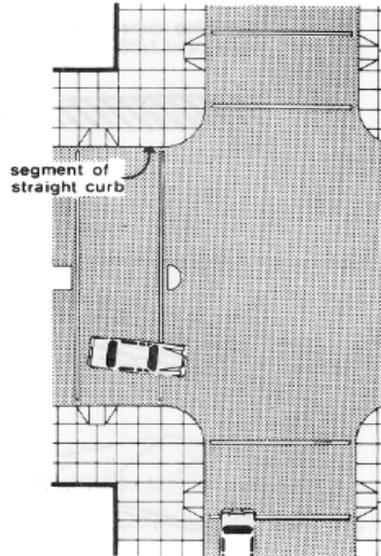


Figure 15b
Curb Ramp at Marked Crossings

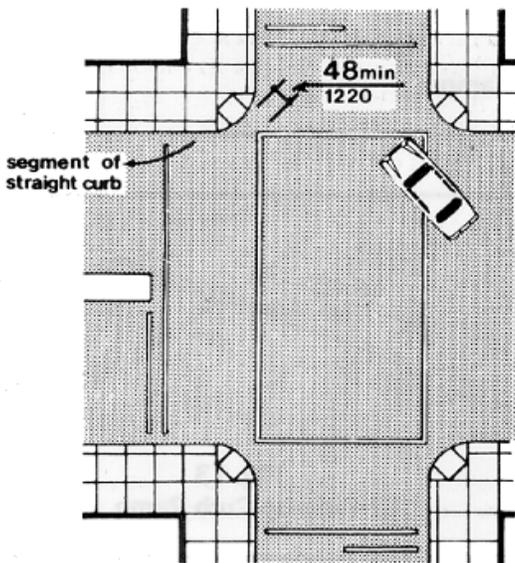


Figure 15c
Curb Ramp at Marked Crossings

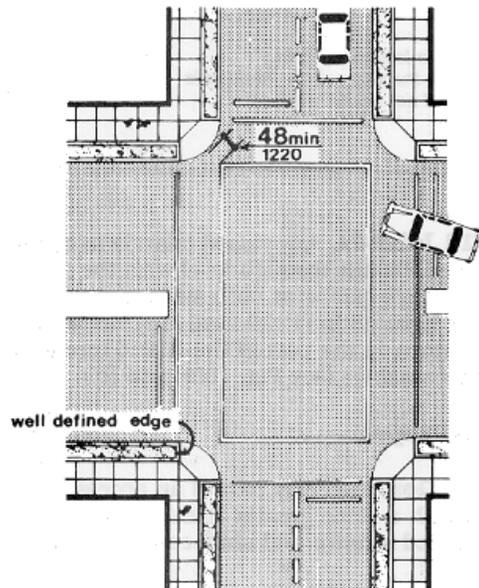


Figure 15d
Curb Ramp at Marked Crossings

OKI WALKABILITY TOOLBOX

REGULATIONS

TOOL: Manual on Uniform Traffic Control Devices for Streets and Highways

SOURCE: U.S. Dep't. of Transportation, Federal Highway Administration
<http://mutcd.fhwa.dot.gov/>

DESCRIPTION:

The Manual on Uniform Traffic Control Devices (MUTCD) is incorporated by reference in Code of Federal Regulations (CFR), 23 Part 655, Subpart F and shall be recognized as the national standard for traffic control devices on all public roads open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F.

Traffic control devices include all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bicycle trail open to the public by authority of a public agency having jurisdiction.

The Standard, Guidance, Option, and Support material described in the MUTCD provide the transportation professional with the information needed to make appropriate decisions regarding the use of traffic control devices on streets and highways. The material is organized to differentiate between Standards that must be satisfied for the particular circumstances of a situation, Guidances that should be followed for the particular circumstances of a situation, and Options that may be applicable for the particular circumstances of a situation.

PEDESTRIAN APPLICATIONS

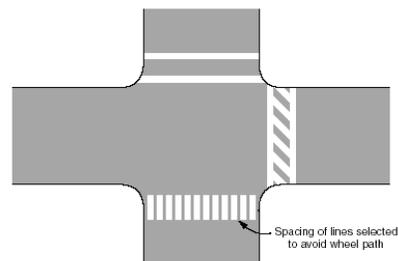
- Standard signage for crosswalks
- Pavement markings for crosswalks
- Traffic controls for school areas and school route planning – Part 7
- School crossing supervision – qualifications and procedures



S4-5a



W11-2



OKI WALKABILITY TOOLBOX

REGULATIONS

Tool: Environmental Justice/Title VI

The “environment” in Environmental Justice pertains to the impact of various projects on the human environment. Within the context of OKI’s planning activities, the concern is primarily with transportation projects. For local governments, environmental justice considerations will apply to any project or program using federal funding sources.

The origins of this federal policy includes Title VI of the Civil Rights Act of 1964, the National Environmental Policy Act of 1969, the Transportation Equity Act for the 21st Century, and Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations” in 1997 by President Clinton. So, while the terminology is new, the anti-discrimination policies go back forty years.

An FHWA flier on Environmental Justice provides three fundamental principles:

- To avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

For OKI planning work, five targeted Environmental Justice communities receive consideration at both the planning and project level. These include: minority, elderly, disabled, and low-income populations and zero-car households. These groups, which are not mutually exclusive, can be quantified and geographically located with Census of Population data. (See the OKI *2030 Regional Transportation Plan*.) An Environmental Justice Advisory Committee has been formed under the Board of Trustees to advise the staff and review projects to be funded through the OKI Transportation Improvement Program (TIP).

Total Figures for the OKI Region		
EJ Group	Number	Percent
Minority	300,718	15.9
Low Income	173,901	9.4
Elderly	290,037	15.4
Disabled	300,274	17.4
Zero Car Hslds	71,694	9.8

For OKI’s planning program, environmental justice (EJ) considerations are taken into account in a general manner for projects and programs formulated at the regional level. More specific review of and input to these regional plans is carried out through the public participation component of these plans where the comments of the EJ communities are solicited.

Local governments, and their consultants, seeking to sponsor a transportation project for federal funding in OKI’s TIP, are required to carry out a public involvement plan targeting the EJ communities and document the results to the EJ Advisory Committee with the Transportation Project Sponsor Public Involvement Requirement Checklist. The resulting evaluation by the Committee determines points used in ranking the project.

OKI WALKABILITY TOOLBOX

REGULATIONS

TOOL: Local Subdivision Regulations

DESCRIPTION

Subdivision regulations are a set of ordinances adopted and administered by local governments for the purpose of guiding the development of land for urban uses. They differ from the zoning regulations in that the zoning ordinance regulates the how a property may be used, lot size and the proportion of the parcel that can be covered with buildings. The subdivision regulations specify the infrastructure serving the development including water supply (including fire protection), waste water removal (sewers), storm water management, and the street system.

Regarding streets, the subdivision regulations define the different classes of streets (arterial, collector and local streets) and where they should be used, their dimensions (right-of-way, lanes, width and pavement composition), allowances for on-street parking, the distance between intersections and length of cul-de-sacs, and requirements for curbs, gutters and sidewalks.

Regarding sidewalks, Ohio and Kentucky statutes define sidewalks as the part of the street between the paved roadway and the property line where pedestrians are to walk. Thus a sidewalk exists whether or not it's paved. Similarly, a crosswalk is defined as the extension of the sidewalk lines across an intersecting street. Therefore, a crosswalk exists at an intersection whether it is striped or not.

Subdivision regulations for residential areas should require a 5 ft minimum concrete sidewalk to permit two people to walk side-by-side and a 4 ft minimum planting strip between the sidewalk and curb for grass or street trees and separation from motor vehicles. Paved sidewalks should be requires on both sides of the street. At intersections, new requirements of the Americans with Disabilities Act (ADA) call for two curb ramps at each corner in-line with the sidewalk direction of the approaching streets. These ramps should include a 4 ft by 2 ft area of "truncated domes" to provide a visual cue to persons with poor eyesight, and a tactile cue to blind persons, that they are at the edge of the roadway. (See the ADA Walkability Tool on curb ramps.)

In addition to the paved sidewalk requirements for streets, subdivision regulations should also include provisions for supplementary pedestrian connections within developments such as between streets where blocks exceed 1,500 ft, for pathways to connect dead-end streets with other streets and to provide access to schools, parks, shopping or other community facilities. Generally, a 10 ft easement through or between properties will be sufficient for a 5 ft sidewalk connection.

REFERENCES

<http://www.planning.org/thecommissioner/fall96.htm> - Explanation of subdivision regulations
<http://www.planning.org/thecommissioner/summer00.htm> - Article on smart growth
<http://www.walkinginfo.org/rd/devices.htm#cross1> - Marked vs. unmarked crosswalks
http://www.walkinginfo.org/de/curb1.cfm?codename=1a&CM_maingroup=PedestrianFacilityDesign

OKI WALKABILITY TOOLBOX

REGULATIONS

TOOL: Kentucky Laws Related to Pedestrians

DESCRIPTION

The Kentucky Revised Statutes (KRS) include laws relating to the street space for pedestrians and pedestrian use of the streets. Kentucky laws are based on the Uniform Vehicle Code, like Ohio's, and the laws are similar. One notable difference from Ohio's is that the KRS definition of "pedestrian" includes persons in wheelchairs.

189.010 Definitions for chapter.

- (2) "Crosswalk" means:
- (a) That part of a roadway at an intersection within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway; or
 - (b) Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.
- (3) "Highway" means any public road, street, avenue, alley or boulevard, bridge, viaduct, or trestle and the approaches to them and includes private residential roads and parking lots covered by an agreement under KRS 61.362, off-street parking facilities offered for public use, whether publicly or privately owned, except for-hire parking facilities listed in KRS 189.700.
- (4) "Intersection" means:
- (a) The area embraced within the prolongation or connection of the lateral curb lines, or, if none, then the lateral boundary lines of the roadways of two (2) highways which join one another, but do not necessarily continue, at approximately right angles, or the area within which vehicles traveling upon different highways joining at any other angle may come into conflict; or
 - (b) Where a highway includes two (2) roadways thirty (30) feet or more apart, then every crossing of each roadway of such divided highway by an intersecting highway shall be regarded as a separate intersection. If the intersecting highway also includes two (2) roadways thirty (30) feet or more apart, every crossing of two (2) roadways of the highways shall be regarded as a separate intersection. The junction of a private alley with a public street or highway shall not constitute an intersection.
- (8) "Pedestrian" means any person afoot or in a wheelchair.
- (9) "Right-of-way" means the right of one (1) vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian approaching under such circumstances of direction, speed, and proximity as to give rise to danger of collision unless one grants precedence to the other.
- (10) "Roadway" means that portion of a highway improved, designed, or ordinarily used for vehicular travel, exclusive of the berm or shoulder. If a highway includes two (2) or more separate roadways, the term "roadway" as used herein shall refer to any roadway separately but not to all such roadways collectively.
- (11) "Safety zone" means the area or space officially set apart within a roadway for the exclusive use of pedestrians and which is protected or is so marked or indicated by adequate signs as to be plainly visible at all times while set apart as a safety zone.

OKI WALKABILITY TOOLBOX

TOOL: Kentucky Laws Related to Pedestrians (continued)

189.570 Pedestrians.

- (1) Pedestrians shall obey the instruction of any official traffic control devices specifically applicable to them, unless otherwise directed by a police officer or other officially designated persons.
- (2) Pedestrians shall be subject to traffic and pedestrian control signals as provided in KRS 189.231 and 189.338.
- (3) At all other places, pedestrians shall be accorded the privileges and shall be subject to the restrictions stated in this chapter.
- (4) When traffic control signals are not in place or in operation the operator of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway upon which the vehicle is traveling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger.
- (5) Whenever any vehicle is stopped at a marked crosswalk or at any unmarked crosswalk at an intersection, to permit a pedestrian to cross the roadway, the operator of any other vehicle approaching from the rear shall not overtake and pass the stopped vehicle.
- (6) (a) Every pedestrian crossing a roadway at a point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway.
(b) Any pedestrian crossing a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right-of-way to all vehicles upon the roadway.
(c) Between adjacent intersections within the city limits of every city at which traffic control signals are in operation, pedestrians shall not cross at any place except in a marked crosswalk.
(d) Notwithstanding other provisions of this subsection or the provisions of any local ordinance, every operator of a vehicle shall exercise due care to avoid colliding with any pedestrian and shall give warning by sounding the horn when necessary and shall exercise proper precaution upon observing a child or an obviously confused or incapacitated person upon a roadway.
- (7) No vehicle shall at any time be driven through or within a safety zone.
- (8) The operator of a vehicle shall yield the right-of-way to any pedestrian on a sidewalk.
- (9) No pedestrian shall suddenly leave a curb or other place of safety and walk or run into the path of a vehicle which is so close as to constitute an immediate hazard.
- (10) No pedestrian shall cross a roadway intersection diagonally unless authorized by official traffic control devices; and, when authorized to cross diagonally, pedestrians shall cross only in accordance with the official traffic control devices pertaining to such crossing movements.
- (11) Pedestrians shall move, whenever practicable, upon the right half of crosswalks.
- (12) Where a sidewalk is provided and its use is practicable, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway.
- (13) Where a sidewalk is not available, any pedestrian walking along and upon a highway shall walk only on a shoulder, as far as practicable from the edge of the roadway.

OKI WALKABILITY TOOLBOX

TOOL: Kentucky Laws Related to Pedestrians (continued)

- (14) Where neither a sidewalk nor a shoulder is available, any pedestrian walking on or along a highway shall walk as near as practicable to an outside edge of the roadway, and, if on a two-way roadway shall walk only on the left side of the roadway.
- (15) Except as otherwise provided in this chapter, any pedestrian upon a roadway shall yield the right-of-way to all vehicles upon the roadway.
- (16) A pedestrian who is under the influence of alcohol or any kind of drug to a degree which renders himself a hazard shall not walk or be upon a highway except on a sidewalk.
- (17) No pedestrian shall enter or remain upon any bridge or approach thereto beyond the bridge signal, gate, or barrier, after a bridge operation signal indication has been given.
- (18) No pedestrian shall pass through, around, over, or under any crossing gate or barrier at a railroad grade crossing or bridge while such gate or barrier is closed or is being opened or closed.
- (19) No person shall stand in a roadway for the purpose of soliciting a ride.
- (20) No person shall stand on a roadway for the purpose of soliciting employment or business from the occupant of any vehicle.
- (21) No person shall stand on a highway for the purpose of soliciting contributions unless such soliciting is designated by the presence of a traffic control device or warning signal or an emergency vehicle or public safety vehicle as defined in KRS 189.910 making use of the flashing, rotating or oscillating red, blue, or yellow lights on such devices or vehicles.
- (22) No person shall stand on or in proximity to a street or highway for the purpose of soliciting the watching or guarding of any vehicle while parked or about to be parked on a street or highway.
- (23) Upon the immediate approach of an emergency vehicle equipped with, and operating, one (1) or more flashing, rotating, or oscillating red or blue lights, visible under normal conditions from a distance of 500 feet to the front of such vehicle, and the operator of which is giving audible signal by siren, exhaust whistle, or bell, every pedestrian shall yield the right-of-way to the emergency vehicle.
- (24) This section shall not relieve the operator of an emergency vehicle from the duty to drive with due regard for the safety of all persons using the highway nor from the duty to exercise due care to avoid colliding with any pedestrian.

189.575 Yielding right-of-way to blind pedestrian.

The operator of a vehicle shall yield the right-of-way to any blind pedestrian carrying a clearly visible white cane or accompanied by an assistance dog.

66.660 Regulation of crosswalks, curbs and gutters -- Wheelchair ramps.

(1) The legislative body of any city, county or urban-county government shall provide for and regulate crosswalks, curbs, and gutters; provided, that after June 17, 1978, all new curbs, and all existing curbs which are a part of any reconstruction, within any block which is contiguous to any highway and in which fifty percent (50%) of the territory is devoted to or zoned for business, commercial, residential or industrial use, shall comply with the provisions of subsection (2).

OKI WALKABILITY TOOLBOX

TOOL: Kentucky Laws Related to Pedestrians (continued)

(2) In order to enable persons using wheelchairs to travel freely and without assistance, at each crosswalk a ramp with nonslip surface shall be built into the curb so that the sidewalk and street blend to a common level. Such ramp shall not be less than thirty-two (32) inches wide and shall not have a slope greater than one (1) inch rise per twelve (12) inches length, where practicable. In all ramps there shall be a gradual rounding at the bottom of the slope.

178.290 Construction of sidewalks along public roads

(1) Any person may build a sidewalk, composed of gravel, concrete or other suitable material, along the side of any public road in this state. The sidewalk shall not exceed sixty (60) inches in width and the construction and repair and the use of the sidewalk shall be without expense of any kind to any other person who may want to use it. All persons who desire shall be permitted to use the sidewalk, and it shall be so constructed as not to interfere with the traveling public on any public road. The fiscal court of any county may build and repair sidewalks along public roads where the need exists for the safety of school children. Before the beginning of construction of the sidewalk, written approval must be obtained from the governmental agency having jurisdiction over the public road.

<http://www.lrc.state.ky.us/krs/titles.htm>

OKI WALKABILITY TOOLBOX

REGULATIONS

TOOL: Ohio Laws Related to Pedestrians

DESCRIPTION

Ohio's Revised Code of ordinances (ORC) includes laws regulating pedestrian use of roadways and of motorists regarding pedestrians. Included are requirements for motorists to stop before crossing a sidewalk (4511.431), pedestrians to walk on left side of road where there are no sidewalks or shoulders (4511.50). Most state laws are based on the National Uniform Vehicle Code in order to have consistent regulations throughout the country.

4511.01 Definitions

(X) "Pedestrian" means any natural person afoot.

(BB) "Street" or "highway" means the entire width between the boundary lines of every way open to the use of the public as a thoroughfare for purposes of vehicular travel.

(EE) "Roadway" means that portion of a highway improved, designed, or ordinarily used for vehicular travel, except the berm or shoulder. If a highway includes two or more separate roadways the term "roadway" means any such roadway separately but not all such roadways collectively.

(FF) "Sidewalk" means that portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines, intended for the use of pedestrians.

(LL) "Crosswalk" means:

(1) That part of a roadway at intersections ordinarily included within the real or projected prolongation of property lines and curb lines or, in the absence of curbs, the edges of the traversable roadway;

(2) Any portion of a roadway at an intersection or elsewhere, distinctly indicated for pedestrian crossing by lines or other markings on the surface;

(3) Notwithstanding divisions (LL)(1) and (2) of this section, there shall not be a crosswalk where local authorities have placed signs indicating no crossing.

(MM) "Safety zone" means the area or space officially set apart within a roadway for the exclusive use of pedestrians and protected or marked or indicated by adequate signs as to be plainly visible at all times.

(UU) "Right-of-way" means either of the following, as the context requires:

(1) The right of a vehicle, streetcar, trackless trolley, or pedestrian to proceed uninterruptedly in a lawful manner in the direction in which it or the individual is moving in preference to another vehicle, streetcar, trackless trolley, or pedestrian approaching from a different direction into its or the individual's path;

(2) A general term denoting land, property, or the interest therein, usually in the configuration of a strip, acquired for or devoted to transportation purposes. When used in this context, right-of-way includes the roadway, shoulders or berm, ditch, and slopes extending to the right-of-way limits under the control of the state or local authority.

OKI WALKABILITY TOOLBOX

TOOL: Ohio Laws Related to Pedestrians (continued)

4511.14. Pedestrian control signals.

Whenever special pedestrian control signals exhibiting the words "walk" or "don't walk," or the symbol of a walking person or an upraised palm are in place, such signals shall indicate the following instructions:

(A) "Walk" or the symbol of a walking person: Pedestrians facing such signal may proceed across the roadway in the direction of the signal and shall be given the right of way by the operators of all vehicles, streetcars, and trackless trolleys.

(B) "Don't walk" or the symbol of an upraised palm: No pedestrian shall start to cross the roadway in the direction of the signal.

(C) Nothing in this section shall be construed to invalidate the continued use of pedestrian control signals utilizing the word "wait" if those signals were installed prior to the effective date of this act.

4511.431. Stop at sidewalk area.

(A) The driver of a vehicle or trackless trolley emerging from an alley, building, private road, or driveway within a business or residence district shall stop the vehicle or trackless trolley immediately prior to driving onto a sidewalk or onto the sidewalk area extending across the alley, building entrance, road, or driveway, or in the event there is no sidewalk area, shall stop at the point nearest the street to be entered where the driver has a view of approaching traffic thereon.

4511.452. Pedestrian to yield right-of-way to public safety vehicle.

(A) Upon the immediate approach of a public safety vehicle, as stated in section 4511.45 of the Revised Code, every pedestrian shall yield the right-of-way to the public safety vehicle.

(B) This section shall not relieve the driver of a public safety vehicle from the duty to exercise due care to avoid colliding with any pedestrian.

4511.441. Pedestrian on sidewalk has right-of-way.

(A) The driver of a vehicle shall yield the right-of-way to any pedestrian on a sidewalk

4511.46. Pedestrian on crosswalk has right-of-way.

(A) When traffic control signals are not in place, not in operation, or are not clearly assigning the right-of-way, the driver of a vehicle, trackless trolley, or streetcar shall yield the right of way, slowing down or stopping if need be to so yield or if required by section 4511.132 of the Revised Code, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is upon the half of the roadway upon which the vehicle is traveling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger.

(B) No pedestrian shall suddenly leave a curb or other place of safety and walk or run into the path of a vehicle, trackless trolley, or streetcar which is so close as to constitute an immediate hazard.

(C) Division (A) of this section does not apply under the conditions stated in division (B) of section 4511.48 of the Revised Code.

(D) Whenever any vehicle, trackless trolley, or streetcar is stopped at a marked crosswalk or at any unmarked crosswalk at an intersection to permit a pedestrian to cross the roadway, the driver of any other vehicle, trackless trolley, or streetcar approaching from the rear shall not overtake and pass the stopped vehicle.

(E) This section does not relieve the operator of a vehicle, streetcar, or trackless trolley from exercising due care to avoid colliding with any pedestrian upon any roadway.

OKI WALKABILITY TOOLBOX

TOOL: Ohio Laws Related to Pedestrians (continued)

4511.48. Right of way yielded by pedestrian.

(A) Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right of way to all vehicles, trackless trolleys, or streetcars upon the roadway.

(B) Any pedestrian crossing a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right of way to all traffic upon the roadway.

(C) Between adjacent intersections at which traffic control signals are in operation, pedestrians shall not cross at any place except in a marked crosswalk.

(D) No pedestrian shall cross a roadway intersection diagonally unless authorized by official traffic control devices; and, when authorized to cross diagonally, pedestrians shall cross only in accordance with the official traffic control devices pertaining to such crossing movements.

4511.481. Intoxicated or drugged pedestrian hazard on highway.

(A) A pedestrian who is under the influence of alcohol, any drug of abuse, or any combination of them to a degree that renders the pedestrian a hazard shall not walk or be upon a highway

4511.49. Pedestrians.

(A) Pedestrians shall move, whenever practicable, upon the right half of crosswalks.

4511.50. Pedestrian walking along highway.

(A) Where a sidewalk is provided and its use is practicable, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway.

(B) Where a sidewalk is not available, any pedestrian walking along and upon a highway shall walk only on a shoulder, as far as practicable from the edge of the roadway.

(C) Where neither a sidewalk nor a shoulder is available, any pedestrian walking along and upon a highway shall walk as near as practicable to an outside edge of the roadway, and, if on a two-way roadway, shall walk only on the left side of the roadway.

(D) Except as otherwise provided in sections 4511.13 and 4511.46 of the Revised Code, any pedestrian upon a roadway shall yield the right-of-way to all vehicles, trackless trolleys, or streetcars upon the roadway.

<http://onlinedocs.andersonpublishing.com/oh/lpExt.dll?f=templates&fn=main-h.htm&cp=PORC>

OKI WALKABILITY TOOLBOX

REGULATIONS/GUIDELINES

TOOL: Transportation Equity Act for the 21st Century

DESCRIPTION

To the extent that federal funds are available for transportation planning and facility maintenance and construction, these funds are very flexible for use in building facilities for bicycling and walking when done in conjunction with roadway construction. Further, state transportation departments and Metropolitan Planning Organizations, such as OKI, are required to include these non-motorized modes in their multi-modal transportation planning. Further, appropriate treatments are to be considered for construction projects advanced through their Transportation Improvement programs.

Principal federal funding programs for bicycle and pedestrian facilities include National Highway System, Surface Transportation Program, Transportation Enhancement Activities and the Congestion Mitigation / Air Quality programs. Safety programs and literature are eligible for 402 State and Community Traffic Safety Funds.

United States Code – Title 23 – Highways

It is this section of federal law that was amended by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21). Both acts provided Department of Transportation funding for six year terms. TEA-21 expired in September 2003, however, and as of May 2004 renewal legislation has been stalled in Congress. Title 23 provides for the following:

Section 134, Metropolitan Planning , a. 3. Contents “The plans and programs for each metropolitan area shall provide for the development and integrated management and operation of transportation systems and facilities (including pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan area and as an integral part of an intermodal transportation system for the State and the United States.”

Similar language is contained in Section 135 – Statewide Planning. Further, the Federal Highway Administration, in 1999, issued guidance regarding the “Bicycle and Pedestrian Provisions of Federal Transportation Legislation” which includes the following policies supporting non-motorized travel modes:

“Federal transportation policy is to increase nonmotorized transportation to at least 15 percent of all trips and to simultaneously reduce the number of nonmotorized users killed or injured in traffic crashes by at least 10 percent. This policy, which was adopted in 1994 as part of the *National Bicycling and Walking Study*, remains a high priority for the U.S. Department of Transportation (DOT). TEA-21 provides the funding opportunities, planning processes, and policy language by which States and metropolitan areas can achieve this ambitious national goal.”

“Improving conditions and safety for bicycling and walking embodies the spirit and intent of ISTEA and TEA-21 to create an integrated, inter-modal transportation system which provides travelers with a real choice of transportation modes. State and local agencies are challenged to work together cooperatively with transportation providers, user groups, and the public to develop plans, programs, and projects which reflect this vision.”

OKI WALKABILITY TOOLBOX

TOOL: Transportation Equity Act for the 21st Century (continued)

"Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction and transportation facilities, except where bicycle and pedestrian use are not permitted." (Section 1202(a) of TEA-21)

"While these sections stop short of requiring specific bicycle and pedestrian accommodation in every transportation project, Congress clearly intends for bicyclists and pedestrians to have safe, convenient access to the transportation system and sees every transportation improvement as an opportunity to enhance the safety and convenience of the two modes. "Due consideration" of bicycle and pedestrian needs should include, at a minimum, a presumption that bicyclists and pedestrians will be accommodated in the design of new and improved transportation facilities. In the planning, design, and operation of transportation facilities, bicyclists and pedestrians should be included as a matter of routine, and the decision to not accommodate them should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling."

"Even where circumstances are exceptional and bicycle use and walking are either prohibited or made incompatible, States, MPOs, and local governments must still ensure that bicycle and pedestrian access along the corridor served by the new or improved facility is not made more difficult or impossible. For example, there may be ways to provide alternate routes on parallel surface streets that are still safe and convenient, or to provide shuttle bus service on major bridge crossings."

This information is provided to assist local communities and citizens with justification and support for obtaining state and local funds for pedestrian improvements in their communities. Additional information is available at the links below.

<http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm>

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

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

<http://www.fhwa.dot.gov/legsregs/title23.pdf>

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

OKI WALKABILITY TOOLBOX

GUIDELINES

TOOL: American Association of State Highway and Transportation Officials (AASHTO)

DESCRIPTION

AASHTO was established in 1914 to coordinate development of the nation's highway system. From their website, link below, "AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail and water. Its primary goal is to foster the development, operation and maintenance of an integrated national transportation system. Much of AASHTO's work is done by committees comprised of member department personnel who serve voluntarily. The Association provides a forum for consideration of transportation issues, and is frequently called upon by Congress to conduct surveys, provide data and testify on transportation legislation."

A principal reference source for transportation engineers is AASHTO's "Green Book", *A Policy on Geometric Design of Highways and Streets*. This source takes a comprehensive approach to the use of streets and recommends provisions for non-motorized travel. The following paragraph begins the section on pedestrians:

"A pedestrian is any person afoot, and involvement of pedestrians in traffic is a major consideration in highway planning and design. Pedestrians are part of every roadway environment, and attention must be paid to their presence in rural as well as urban areas. The urban pedestrian, being far more prevalent, more often influences roadway design features than the rural pedestrian does. Because of the demands of vehicular traffic in urban areas, it is often extremely difficult to make adequate provisions for pedestrians. Yet this must be done, because pedestrians are the lifeblood of our urban areas, especially in the downtown and other retail areas. In general, the most successful shopping sections are those that provide the most comfort and pleasure for pedestrians. Pedestrian facilities include sidewalks, crosswalks, traffic control features, special walkways found on some portions of freeway right-of-way, and curb cuts (depressions) and ramps for the handicapped. They are also parts of bus stops or other loading areas, grade separations, and the stairs or escalators related to these facilities."²

This pedestrian section also includes characteristics for evaluating sidewalk level-of-service based on area/person and maneuvering ability. Guidance is also provided for accommodating pedestrians with various types of disabilities.

<http://transportation.org/aashto/home.nsf/FrontPage>

<https://www.transportation.org/publications/bookstore.nsf/Home?OpenForm>

² *A Policy on Geometric Design of Highways and Streets, 1984* American Association of State Highway and Transportation Officials, Washington, D.C.

OKI WALKABILITY TOOLBOX

GUIDELINES

TOOL: Safe Routes To School (SR2S)

The goal of a Safe Route to School program is to overcome physical and psychological barriers between home and school to give children more freedom and a healthier lifestyle. It may draw from a variety of techniques and resources including infrastructure improvements, safety education and traffic enforcement.

Once a target school is identified, initial steps include:

- Formation of a SR2S committee comprised of parents, teachers, students and neighbors of the school. This committee should have official status within the school PTA or Safety Committee.
- This committee initially gathers information about student travel patterns to and from school. These include current modes (those walking, biking, bused or being driven) and a walkability audit of the streets within walking distance (1/2 mile) of the school. The audit documents available sidewalks and their condition, crosswalks, traffic counts, potentially dangerous land uses, barriers such as drainage ways or steep hills and high speed traffic.
- The findings of this research can be used to determine what resources will be needed to address the issues.

Measures typically considered include:

- Review of the surrounding street system to define preferred walking routes (see MUTCD tool)
- Additional and repaired sidewalks
- Adding or upgrading crosswalks, including crossing guards
- Separating drop-off areas from pedestrian access routes
- Cutting back shrubbery
- Additional street lighting and signage
- Traffic calming measures such as speed humps, corner bulb-outs, narrowing travel lanes and adding bike lanes, and lengthening the school zones
- Increased enforcement of school zone speed limits and yielding to pedestrians
- Education programs for safe walking and biking
- Walking School Buses (see separate tool)

Funding

- Most of the above measures are low cost and most effectively paid for with local funds, existing programs, donations and volunteer labor
- Property assessments
- Federal TEA-21 Safety Set-aside funds allocated to state safety departments

Resources

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

http://www.bikewalk.org/safe_routes_to_school/SR2S_introduction.htm

<http://www.civfed.org/schosafe.htm>

<http://www.walktoschool-usa.org/>

<http://mutcd.fhwa.dot.gov/pdfs/2003/Ch7.pdf> (Chapter 7A, Page 2)

OKI WALKABILITY TOOLBOX

GUIDELINES

TOOL: Walking School Bus

The Walking School Bus has become increasingly popular in the last few years. A walking school bus provides children with a safe and healthy mode of transportation to school. The idea is simple. The designated adult supervisor (driver) "picks up" each student, house by house, on foot at a predetermined schedule. The group of students walk to school together along a set route, all the while enjoying fresh air, exercise, friendly conversation and learning about their neighborhoods and traffic rules.

A Walking School Bus can be initiated by the school or by parent volunteers. A map of the community within ½ mile of the school is obtained for mapping potential routes. Children living beyond a comfortable walking distance may be driven to a "bus stop" to be picked up. At this time, coordination is needed with the school administration, local police for coordination and eventual safety training, and with local traffic engineers to identify and correct possible safety problems.

Next, a letter is sent out to the parents requesting interest in having their children participate and volunteering to walk with the children. A follow-up meeting would be held so that parents and administrators can learn about the program. Police sponsored safety programs to explain pedestrian laws would be provided for the parent leaders and for the children. Generally, two volunteers are needed for each bus, a "driver" to lead the group and a "conductor" to follow from behind. Reference checks of the volunteers are also advisable. Liability insurance may be available through third-party policies with the school or jurisdiction.

The "Walking Bus" could be initiated on a special day such as the international Walk-To-School Day in October. It may operate on certain days of the week, one way to or from school or both ways and would normally operate in any weather conditions. Parents would need to provide a consent letter and wait with their children at the bus stop until the "bus" came along. The "driver" would take attendance of the "passengers" on each trip. Students would need to dress appropriately for cold, rain, or sun exposure. Reflective vests or arm bands should be worn. A wagon can be used to carry school bags and instruments. Entry to the school grounds should be separate from cars.

RESOURCES:

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

<http://www.walkingbus.com/index.htm>

<http://www.nhtsa.dot.gov/people/injury/buses/GTSS/case4.html>

<http://www.ecoplan.org/children/general/walkingbus.htm>

<http://www.greenestcity.org/asrts/wsb.html>

See also **Safe Routes To School**

OKI WALKABILITY TOOLBOX

GUIDELINES

TOOL: Pedestrian Level of Service

DESCRIPTION:

Evaluations of pedestrian level of service are intended to replicate levels of service calculated for highways. Generally similar highway information is not available or applicable for the sidewalk system such as volume, speed, lanes and signals. However, appropriate information can be collected to evaluate the adequacy of the walking system. Such criteria include pedestrian volumes, presence of stairs, sidewalk continuity, sidewalk width, presence on one or both sides of the street, presence of buffer or planting strip, pavement condition, and intersection characteristics including number, crosswalks, signals, lanes, medians, vehicle volumes and speed, and crossing time. Most of the examples in the reference call for point ratings for the characteristics used which, when totaled, equate to a letter grade from A (best) to F (unacceptable).

SOURCES:

A summary of current methodologies for pedestrian and bicycle level of service has been prepared by the Victoria Transport Policy Institute as part of its Transportation Demand Management Encyclopedia. The following link is to the chapter "Evaluating Nonmotorized Transportation".

<http://www.vtpi.org/tdm/tdm63.htm> United States Code – Title 23 – Highways

It is this section of federal law that was amended by the Intermodal Surface

The Partnership for Walkable America has produced a Walkability Checklist that permits the evaluation of a particular route in a community and is suitable for use by citizen's groups. The Checklist is included at the back of this report as Appendix B. The form provides a list of questions about the walk and particular characteristics to look for including room to walk, ease of crossing streets, driver behavior, ease of complying with safety rules and if the walk was pleasant. Numeric scores equate to an evaluation from low (awful) to high (excellent). <http://www.walkinginfo.org/pdf/walkingchecklist.pdf>

The following table is from "Bicycle and Pedestrian Level-of-Service Performance Measures for Congestion Management Systems" by Linda Dixon, *Transportation Research Record 1538*, 1996. The ratings take into account whether separate facilities are available, conflicts, speed differential, congestion, maintenance, amenities and transportation demand management measures.

OKI WALKABILITY TOOLBOX

TOOL: Pedestrian Level of Service (continued)

Pedestrian Level-of-Service (Dixon, 1996)

	Pedestrian	Point
Facility (Max. value = 10)	Not continuous or non-existent	0
	Continuous on one side	4
	Continuous on both sides	6
	Min. 1.53 m (5') wide & barrier free	2
	Sidewalk width >1.53 (5')	1
	Off-street/parallel alternative facility	1
Conflicts (Max. value = 10)	Driveways & sidestreets	1
	Ped. Signal delay 40 sec. or less	0.5
	Reduced turn conflict implementation	0.5
	Crossing width 18.3 m (60') or less	0.5
	Posted speed	0.5
	Medians present	1
Amenities (Max. value = 2)	Buffer not less than 1m (3'5")	1
	Benches or pedestrian scale lighting	0.5
	Shade trees	0.5
Motor Vehicle LOS (Max. value = 2)	LOS = E, F, or 6+ travel lanes	0
	LOS = D, & < 6 travel lanes	1
	LOS = A, B, C, & < 6 travel lanes	2
Maintenance (Max. value = 2)	Major or frequent problems	-1
	Minor or infrequent problems	0
	No problems	2
TDM/Multi Modal (Max. value = 1)	No support	0
	Support exists	1

OKI WALKABILITY TOOLBOX

INFORMATION

TOOL: Pedestrian and Bicycle Information Center

DESCRIPTION

The Pedestrian and Bicycle Information Center (PBIC) is a clearinghouse for information about health and safety, engineering, advocacy, education, enforcement and access and mobility. The PBIC serves anyone interested in pedestrian and bicycle issues, including planners, engineers, private citizens, advocates, educators, police enforcement and the health community. The PBIC is made up of the core staff of professionals at the UNC Highway Safety Research Center, including engineers, urban planners, public information specialists, web site specialists, researchers, computer programmers, communication specialists, and others. They also have an on-site coordinator in the Washington, D.C. office, and a team of other Organizations and Consultants who work with the PBIC on a variety of tasks. They include a team of professionals who are very knowledgeable on walking and bicycling issues and who are truly committed to improving safety, health, and mobility for those who wish to walk or bicycle

Activities of the PBIC include a clearinghouse of information, a comprehensive web site, training courses on walking and bicycling topics for professionals and university students, participation and sponsorship of Conferences, development of technical User Guides and software to assist ped/bike professionals, among other activities.

Resources include an extensive searchable library of over 2,500 digital images of pedestrian and bicycle activity and features. (This is the source of some of the pictures in the Introduction to this report.) The link is below.

This is also a source for the Walkable Community Checklist for self-evaluation of a local walking environment.

Pedestrian safety and crash data are available including a system for classifying the types of pedestrian crashes. The Pedestrian and Bicycle Crash Analysis Tool (PBCAT) is a crash typing software product intended to assist state and local pedestrian / bicycle coordinators, planners and engineers with improving walking and bicycling safety through the development and analysis of a database containing details associated with crashes between motor vehicles and pedestrians or bicyclists.

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

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

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

<http://www.walkinginfo.org/pc/pbcat.htm>



OKI WALKABILITY TOOLBOX

INFORMATION

TOOL: Decennial Census of Population and Housing

DESCRIPTION

The United States Bureau of the Census provides a consistent source of comparable demographic and household data over time and geographical area. The census is taken every ten years for the years ending in "0". Therefore, the most recent census data are for 2000 and the next census will be taken in 2010. The census is taken through a mail-out mail-back self-enumeration questionnaire, so the information is provided by the respective households

Population data include number, age, sex, race, household relationship, educational attainment, income, disability, labor force, employment and occupation and means of transportation to work. Household data include units in structure, rooms in unit, occupancy, age of structure, owner or renter, value or rent, number of vehicles and plumbing facilities.

These data can be used to identify numbers and concentrations of the population with various characteristics such as school aged population, elderly population, households with no cars or persons with a disability. The mode of travel for commuting to work is particularly useful for identifying transit riders and those who walk the entire distance to work (not counting walking to or from another mode of travel).

While census data were primarily accessible in published reports in the past, publications for the 2000 Census have been reduced in favor of electronic access through their internet site. Preformatted community profiles are available, or tables selected by subject can be compiled for selected geography. Census geography includes the US, states, counties, minor civil divisions (townships, cities and villages), census tracts, census blockgroups and census blocks. (Data are limited for blocks and blockgroups.)

Internet sources:

Census 2000 home page

<http://www.census.gov/main/www/cen2000.html>

State and county summaries

<http://quickfacts.census.gov/qfd/states/21/21015.html>

American FactFinder

http://factfinder.census.gov/home/saff/main.html?_lang=en

Census maps

http://factfinder.census.gov/servlet/ReferenceMapFramesetServlet?_lang=en -

OKI WALKABILITY TOOLBOX

INFORMATION

TOOL: National Highway Traffic Safety Administration

DESCRIPTION

The National Highway Traffic Safety Administration (NHTSA), under the U.S. Department of Transportation, was established by the Highway Safety Act of 1970, to carry out safety programs under the National Traffic and Motor Vehicle Safety Act of 1966 and the Highway Safety Act of 1966 (Title 49 of the U. S. Code in Chapter 301, Motor Vehicle Safety). NHTSA also carries out consumer programs established by the Motor Vehicle Information and Cost Savings Act of 1972.

NHTSA is responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes. This is accomplished by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and through grants to state and local governments to enable them to conduct effective local highway safety programs. NHTSA also conducts research on driver behavior and traffic safety to develop the most efficient and effective means of bringing about safety improvements.

NHTSA investigates safety defects in motor vehicles, sets and enforces fuel economy standards, helps states and local communities reduce the threat of drunk drivers, promotes the use of safety belts, child safety seats and air bags, investigates odometer fraud, establishes and enforces vehicle anti-theft regulations and provides consumer information on motor vehicle safety topics.

Through education, enforcement, and outreach, NHTSA's pedestrian safety programs are directed toward reducing pedestrian injuries and fatalities. Walking is encouraged as an alternate mode of transportation to motor vehicle travel. Additional goals include: reducing the number of impaired pedestrian injuries and fatalities, improving the safety of elderly pedestrians and reaching diverse communities.

The National Center for Statistics and Analysis (NCSA), an office of NHTSA, is responsible for providing a wide range of analytical and statistical support to the highway safety community in the general areas of: human, vehicle, environmental, and roadway characteristics; evaluating the effectiveness of crashworthiness, crash avoidance, and traffic safety efforts; and quantifying the benefits resulting from proposed agency rules. NCSA is made up of three divisions: State Data Reporting Systems Division, Crash Investigation Division, Mathematical Analysis Division.

<http://www.nhtsa.dot.gov/>

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

<http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/intro.html>

<http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002pedfacts.pdf>

OKI WALKABILITY TOOLBOX

INFORMATION

TOOL: Bureau of Transportation Statistics

DESCRIPTION

The U.S. Dept. of Transportation includes the Bureau of Transportation Statistics which offers a wide range of national to local data about all modes of transportation and their economic impact. Data are provided for both freight and passenger movement. Of particular value is the National Household Travel Survey referenced in Part 1 of this plan containing detailed national level household data describing trip purpose and mode of travel. The 2000 Census Transportation Planning Package of metropolitan area tabulations of census data for metropolitan area transportation zones is also available here as a joint product of the Departments of Transportation and Commerce. Their home page is <http://www.bts.gov/>. Other product and links include:

The 2001 National Household Travel Survey (NHTS) is the first comprehensive household survey of both daily and long-distance travel, allowing for analysis of the full continuum of personal travel by Americans. This report presents selected highlights from the 2001 NHTS on daily and long-distance passenger travel in the United States. Because the purpose of this report is to introduce readers to the contents and analytic potential of the 2001 NHTS survey and data, it does not provide in depth analysis of the different facets of the data. A glossary of travel-related terms used in this report is included as an appendix.

<http://search.bts.gov/ntl/query.html?qp=site%3Abts.gov&qt=2001+national+household+travel+survey>

Bicycle and Pedestrian Data: Sources, Needs, & Gaps This report presents a review of existing sources of bicycle- and pedestrian-related information, including their uses, quality, and limitations of these methods of transportation. It also includes information from a broad range of decision makers, researchers, planners, and other users, identifying and prioritizing areas in which additional or improved data are needed <https://www.bts.gov/pdc/user/products/src/products.xml?p=161>

State Transportation Profile (STP): Summary 2003 This report presents highlights of major federal databases and other national sources related to the U.S. infrastructure, safety, freight movement and passenger travel, vehicles, economy and finance, and energy and the environment. Along with tables generated for the United States, this report describes databases and gives information on access, formats, and contacts.

<https://www.bts.gov/pdc/user/products/src/products.xml?p=702&c=-1>

Census Transportation Planning Package (CTPP) 2000 The CTPP data is a special tabulation of responses from households completing the decennial census long form. It contains tabulations by PLACE OF RESIDENCE (Part I), PLACE OF WORK (Part II), and JOURNEY-TO-WORK (Part III). It is the only source of information with summary tabulations available for traffic analysis zones (TAZs) that have been defined by state and regional transportation agencies. These special tabulations are intended to provide data to support a wide range of transportation planning activities at the state and local level. <https://www.bts.gov/pdc/user/products/src/products.xml?p=614&c=-1>

APPENDIX

Public Comments

OKI Regional Land Use Commission

Land Use Commission public outreach activities, in the form of community forums held in each county from September 16 – 26, 2002, resulted in numerous comments from the 335 attendees. Those addressing walking and pedestrian needs are presented below. In addition, the Land Use commission and its committees participated in two visioning workshops focusing on each Principle Statement. Comments by the committee members were also invited and are listed below.

These resources from OKI's ongoing Land Use Commission program, related to pedestrian travel, have been extracted to provide some direction toward the recommendations of the updated *Regional Pedestrian Plan*.

Where do we grow from here? Public Forum Comments:

Boone County

- Plan more walkable communities

Butler County

- Make retail centers more accessible by buses, biking and walking
- Provide transportation choices that permit many people to live near their work and provide alternatives in mobility for children and the elderly

Clermont County

- Promote pedestrian oriented development
- Change laws so that pedestrian and bicycle paths are automatically considered with roadway improvements instead of discouraged or prohibited

Hamilton County

- Create communities that use alternative forms of transportation (i.e. sidewalks and bike lanes)
- Improve pedestrian quality of environment for walking, cycling, living
- Develop more communities like Pleasant Ridge with businesses and services within walking distance of homes – with sidewalks (old-fashioned communities)

Kenton County

- Put sidewalks in residential areas
- Make the area more bicycle/pedestrian friendly

Warren County

- Bike paths that connect recreation and education centers.
- More people using other means than four wheel motorized vehicles.
Physical accessibility for all industries

Principle Statement Questionnaire committee comments

Transportation Choices

- Biking/walking not sensible in rural environment
- Biking and walking paths are very lacking.
- I believe there should be more infrastructure for cyclists and pedestrians.
- In Union there is no plan for biking walking and rapid transit.
- Need light rail, better sidewalks and connections to bike paths.
- Nobody wants to walk. Biking will remain recreational. Autos will dominate as long as economically possible. Public transit sounds good on paper, but always needs massive subsidies.
- Biking and walking is not an option in an area that has so much sprawl.
- Public transit, biking and walking are important.
- I would agree that our biking and walking opportunities are more than sufficient.
- Walking communities, particularly to the local schools, would be great.
- Walking / biking needs exist in rural areas too. As increased traffic makes roadsides dangerous for pedestrians and bicyclists, wider pavement doesn't seem desirable – maybe an unpaved path parallel to road.

Connectivity

- Grouping residential areas together is good, but you don't want long streets without stop signs since stop signs deter speeding, thus reducing chance of accidents with pedestrians.
- Pedestrian connectivity is most productive to provide alternative travel choices.
- Could elaborate on linking pedestrians with parks and other land uses (connectivity).

Mixed Use Neighborhoods

- Children attending grade schools in their neighborhoods, accessible by a network of sidewalks.

Land Use Patterns to Support Transit

- On a daily basis, within an area, support walking, etc. for convenience.
- We need to encourage town centers with street grids, sidewalks, and shopping, banking, medical and civic services.

OKI Regional Transportation Plan Update

OKI staff conducted four informational public meetings on September 29-30, and October 1-2, 2003 in Sharonville, Monroe, Covington and Cincinnati, respectively. A turnout of approximately 40 provided 12 written survey responses. Those related to pedestrian travel included the following support of the proposal to "Expand public transportation – bus, rail, bike, walk": "very important": 11, "somewhat important": 1, "not important": 0.

In addition, the following specific comments were written in:

- A good bus service that connects the entire region, more sidewalks, dedicated bike paths
- Improvements to Mall Road and pedestrian system
- Pedestrian improvements to KY 18 over I-75 to Hopeful Road and the Mall Road area
- Pedestrian improvements along US 42 and over I-75 between Ewing Blvd. and Florence Mall
- More regional focus on pedestrian/transit-friendly housing and businesses. This, I believe, will help such transportation projects move forward.

Six additional public meetings were held April 12-28, 2004 on the completed draft recommendations for the plan. Meetings were held in Independence, Lebanon, Newport, Fairfield, Union Township (Clermont County), Cincinnati, and Union (one meeting in each of the six transportation planning area counties). Eighty-two persons attended the second round of meetings and submitted 43 questionnaires similar to those used in the first round of meetings. The question related to pedestrian travel including support of the proposal to "Expand public transportation – bus, rail, bike, etc.": "very important": 32, "somewhat important": 4, "not important": 1.

Additional specific comments provided include the following:

- Paths for hiking and walking can help to relieve congestion and parking lots while promoting health. (I walked to work for 6 years.)
- Require new subdivisions to have sidewalks and bike trails on streets.
- Rural roads should have separated bike paths in addition to the shoulders.