Chapter 2 Existing Conditions

Above all, do not lose your desire to walk: every day I walk myself into a state of well-being and walk away from every illness; I have walked myself into my best thought, and I know of no thought so burdensome that one cannot walk away from it.

Søren Kierkegaard, Danish Philosopher

The Pedestrian Master Plan is based on a survey of the City's existing street conditions, an analysis of the City's pedestrian collision data, and an extensive community outreach process. These three data sets provide a comprehensive picture of Oakland's pedestrian opportunities and constraints.

This chapter begins by identifying the opportunities and constraints to making Oakland a more walkable city. It then examines pedestrian walking rates and pedestrian/vehicle collision data to identify pedestrian collision rates, reasons, locations, and times as well as at-risk groups. It also examines school safety, connections to transit, and education and enforcement for pedestrians. The chapter concludes by explaining the community outreach process used in gathering data and identifies the role of the Citizen's Pedestrian Advisory Committee (CPAC) and the Technical Advisory Committee (TAC) in the planning process.

Oakland's Street Grid

Oakland's downtown and vibrant neighborhoods provide the foundation for a walkable city. Oakland's street grid was laid out when walking and transit were the most common modes of transportation. Neighborhoods like Temescal, Fruitvale, Seminary, Glenview, Lakeshore, and Fairfax developed with housing and businesses clustered along streetcar lines.

These neighborhoods can be pedestrian-friendly because they were designed for people to walk from their homes to trolley stops and the surrounding shops. In neighborhoods with irregular street grids, walkways provided pedestrian access through long blocks to schools, businesses, and transit. Many of these historical routes still exist and provide practical and attractive routes for walkers.

Oakland's street grid has much variation but generally the shortest blocks are located in the oldest and most walkable areas of the city. Short blocks are a standard feature of streets platted before the development of motorized urban transportation in the late nineteenth century. Such blocks fit the scale of walking because they provide frequent places to cross and frequent choices of direction. They make it easy to reach destinations directly and provide numerous route choices that make walking interesting and enjoyable.

Opportunities

The following opportunities highlight Oakland's walkability:

- Many neighborhoods contain a mixture of homes, businesses, and public services within easy walking distance of each other.
- Short blocks in older sections of Oakland are pedestrian-friendly because they increase the number of possible walking routes and destinations.
- Old industrial areas of the City are being redeveloped as residential and live/work neighborhoods with improved pedestrian infrastructure.
- Oakland is well-served by public transit, making walking an important mode of transportation for trips across the City as well as within neighborhoods.
- Frank Ogawa Plaza, Jack London Square, and Lake Merritt are lively destinations explicitly designed for pedestrians.
- Oakland has many walkways and trails of historic and natural interest

including the Bay Trail and the Ridge Trail.

- The City's residential traffic calming program has effectively reduced motor vehicle speeds in residential neighborhoods.
- Oakland is a leader in ensuring accessible streets by providing audible pedestrian signals and curb ramps.
- The Oakland Pedestrian Safety Project has been effective in coalition-building to promote education and enforcement for pedestrian safety and access.

Constraints

The following constraints limit Oakland's walkability:

- Many arterial streets have large volumes of motor vehicle traffic which, according to the Federal Highway Administration, "can inhibit a person's feeling of safety and comfort and create a 'fence effect'" that makes crossing those streets difficult (FHWA 2002b, p. 8).
- More traffic signals are needed, particularly on long corridors with a lot of pedestrian activity.
- Some areas of the City have incomplete or inadequate sidewalks that could discourage pedestrian activity.
- Freeways are physical barriers that are rarely convenient or pleasant to walk under, over, or near.
- Intersections with freeway on- or off-ramps could create conflicts between pedestrians and drivers transitioning to or from freeway speeds.
- Overflow traffic from congested freeways puts additional pressure on surface streets in the City.
- Newer areas of the City including parts of the Oakland Hills and East Oakland do not always have sidewalks, crosswalks, short blocks, or numerous destinations within easy walking distance.
- Some street design elements like extra turn lanes, large corner radii, and frequent driveways improve motor vehicle access yet decrease pedestrian safety.
- Some older schools may need more vehicle capacity at pick-up and drop-off zones.
- Many Oakland streets lack benches, bus shelters, trees, and other street furniture that are important ingredients of a walkable city.

Walking Rates in Oakland

Current and accurate figures on walking rates in the City of Oakland do not exist. However the data that are available suggest that the rate of walking in Oakland is amongst the highest in the San Francisco Bay Area. Some figures are available from U.S. Census data on journey to work. Information at the County and sub-regional levels on walking rates and car-ownership is also available from the Metropolitan Transportation Commission. Compared to other areas in the region, the City of Oakland likely has more pedestrian trips because many neighborhoods are densely populated and well served by transit.

The United States Census "journey to work" statistics provide local information about modal choice for commuters. The 2000 U.S. Census recorded that 2.3% of Oaklanders walked to work. Because work trips are generally a small percentage of total walking trips, this figure is only marginally useful. This figure does not count walking trips to transit as part of the journey to work nor does it include walking trips to other destinations. For example, Figure 1 suggests that in the San Francisco Bay Region there are seven times as many home-based pedestrian trips to school as home-based pedestrian trips to work.

MODE	H.B.* WORK	H.B.* SHOP	H.B.* SOCIAL/RECREATIONAL	H.B.* SCHOOL	NON-H.B.*	OTHER PURPOSES
WALK	3%	8%	10.8%	21.5%	13.7%	9.9%

FIGURE 1 1990 REGIONAL WEEKDAY WALKING TRIPS BY PURPOSE (MTC 1994, P. 12) *H.B. = HOME BASED

Walking rates from model simulations are available at the County level. Alameda County has the second highest walking rate when compared to the other 8 counties in the San Francisco Bay Region (Figure 2).

Because the City of Oakland has different characteristics than much of Alameda County, walking rates for the City are likely higher than rates for the County as a whole.

Rates of car ownership are useful for considering the differences between the City of Oakland (combined with the City of Alameda) and the County of Alameda. Lower car ownership rates in Oakland suggest higher rates of walking and transit ridership. Figure 3 compares car ownership rates for selected sub-regions of the nine county San Francisco Bay Area.

Taken as a whole, these figures suggest that the City of Oakland has one of the highest rates of walking for all cities in the nine-county San Francisco Bay Region. At the county level, Alameda County has the second highest rate following San Francisco County. Within Alameda County, the City of Oakland's dense development patterns, good transit service, and low levels of car ownership suggest that walking rates for the City are higher than that of the County. As discussed in greater detail below, the largest shares of walking trips in the City of Oakland are likely to schools and to transit.

COUNTY	WALKING TRIPS AS % OF TOTAL TRIPS
ALAMEDA	12.0%
CONTRA COSTA	5.8%
MARIN	4.6%
NAPA	5.3%
SAN MATEO	8.4%
SANTA CLARA	5.7%
SAN FRANCISCO	21.3%
SOLANO	5.5%
BAY AREA AVERAGE	9.3%

FIGURE 2 WALKING TRIPS AS A PERCENTAGE OF TOTAL TRIPS BY COUNTY (MTC 2001B, P. 95)

GEOGRAPHICAL AREA	ZERO CAR HOUSEHOLDS	1-CAR HOUSEHOLDS	MULTIPLE CAR HOUSEHOLDS	AVG. CARS/ HOUSEHOLD
OAKLAND/ALAMEDA	19.3%	40.7%	40.0%	1.375
(HOUSEHOLDS)	(32,139)	(67,774)	(66,609)	(166,522)
ALAMEDA COUNTY	10.8%	32.5%	56.7%	1.745
BERKELEY/ALBANY	16.9%	46.6%	36.5%	1.323
SAN FRANCISCO	28.1%	40.4%	31.5%	1.134
BAY AREA REGION	8.9%	29.5%	61.7%	1.847

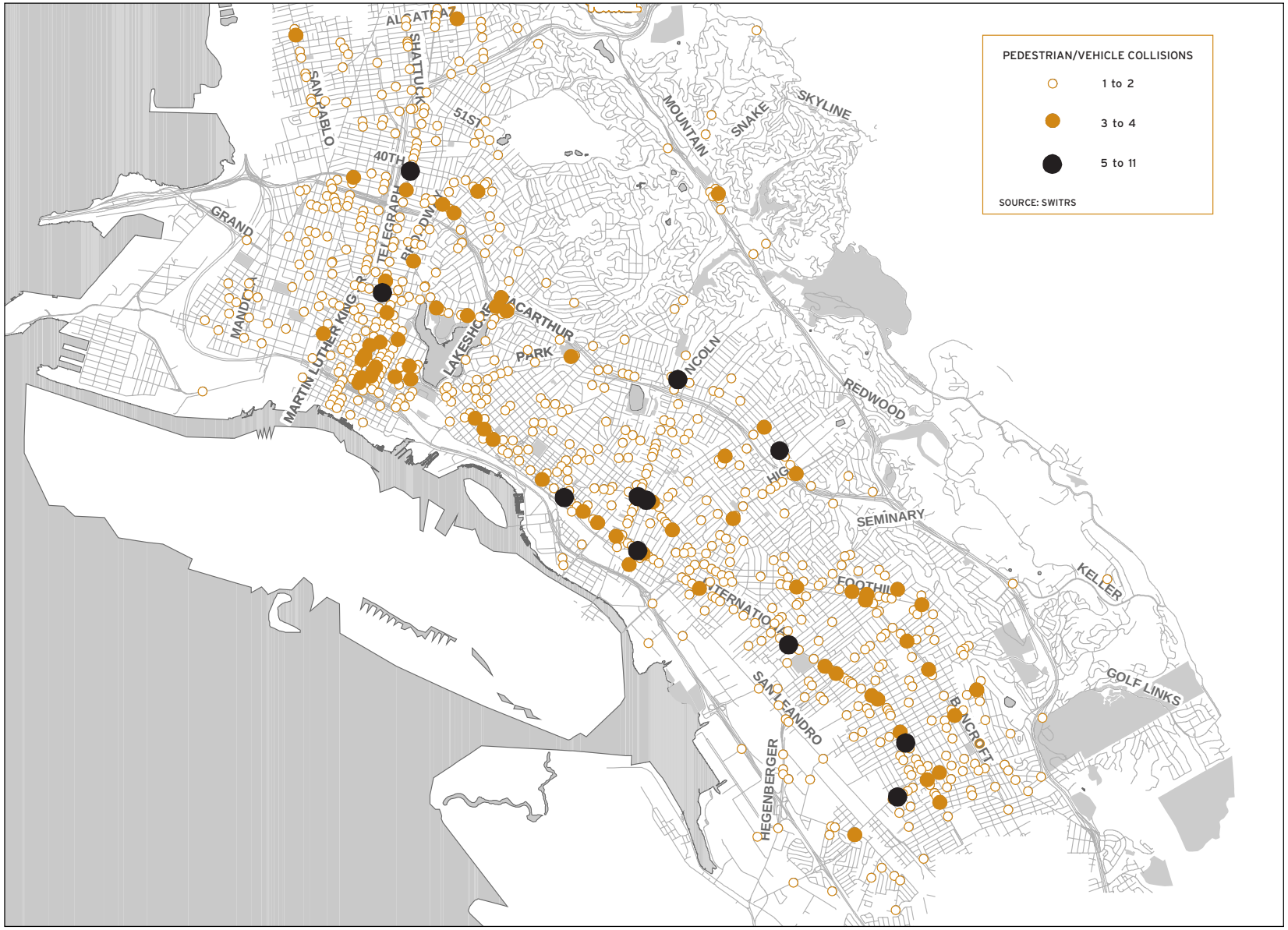
FIGURE 3 CAR OWNERSHIP IN 2000 FOR OAKLAND/ALAMEDA VERSUS OTHER AREAS (MTC 2001A, PP. 49 – 54)

Pedestrian/Vehicle Collision Data

Pedestrians are the most vulnerable road users and collisions with motor vehicles often result in serious injury or death. While pedestrian/vehicle collisions represent 4% of total collisions in Oakland, pedestrian fatalities comprise 39% of the total number of traffic fatalities in the City of Oakland. This figure is three times the national average of 13% (Alameda County Congestion Management Agency 2001). These numbers may be explained in part by Oakland having more pedestrians than other cities.

The following data are primarily from the Statewide Integrated Traffic Records System (SWITRS), a database of collision records collected by local police throughout California and the California Highway Patrol (CHP).

While useful for locating problem areas, collision maps tend to highlight those areas where large numbers of people walk. For example, areas like Chinatown and International Boulevard have high pedestrian volumes and high numbers of pedestrian collisions. In contrast, collision maps do not identify those areas where people avoid walking because they are perceived as too dangerous for pedestrians. For a comprehensive analysis, feedback from the community outreach process described in the following section balances this shortcoming of collision data.



MAP 1 PEDESTRIAN/VEHICLE COLLISIONS – OAKLAND (1996-2000)

Pedestrian/Vehicle Collision Data

Rates of Pedestrian Collisions

On average, a pedestrian/vehicle collision occurs each day in Oakland. The number of collisions has decreased slightly in recent years. Possible explanations for this decline include the extensive education, engineering, and enforcement activities of the City of Oakland over the last five years. In 2000 there were a total of 312 collisions involving pedestrians – down 12% from 353 collisions in 1996. Pedestrian injury collisions declined from 292 in 1996 to 240 in 2000 – a 18% drop. The number of pedestrian fatality collisions fell from 8 in 1996 to 6 in 2000 – a 25% reduction. Over this five year period, 2% of all pedestrian/motor vehicle collisions resulted in a pedestrian fatality. Total pedestrian collisions for 2000 may be artificially low because the Oakland Police Department did not file reports on non-injury collisions from October 2000 to October 2001.

	1996	1997	1998	1999	2000	TOTAL	% TOTAL
INJURY	292	277	309	286	240	1404	77.7%
NON-INJURY	53	73	85	90	66	367	20.3%
FATAL	8	9	8	5	6	36	2.0%
TOTAL	353	359	402	381	312	1807	100%

FIGURE 4 PEDESTRIAN COLLISIONS TABLE (1996-2000)

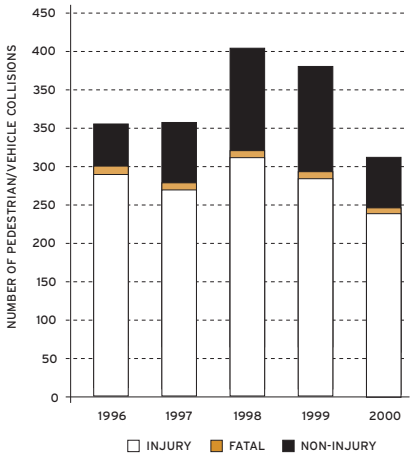


FIGURE 5 PEDESTRIAN COLLISIONS CHART, (1996-2000)

Reasons for Pedestrian Collisions

As Figure 6 demonstrates, vehicle drivers are responsible for approximately 51% of pedestrian/vehicle collisions. Pedestrians are responsible for approximately 31% of such collisions and in about 18% of the cases the primary factor is "other" or "unknown."

Violation of the pedestrian right-of-way by a motor vehicle driver is the most common cause of pedestrian/vehicle

collisions. Other common driver movements include unsafe starting or backing and unsafe speed. Furthermore, 22.4% of pedestrian/vehicle collisions are hit-and-run collisions.

When pedestrians are at fault the motorist is generally going straight. When the motorist is at fault it is generally during a turning movement. Figure 8 shows that 60% of vehicles are proceeding straight when involved in a pedestrian/vehicle collision. Left-turn vehicle movements account for 15% while right-turn vehicle movements account for 10% of the total. For collisions with the pedestrian at fault, 90% involve drivers proceeding straight as the movement preceding collision. For collisions with the driver at fault, the majority involve driver turning movements as the movement preceding collision.

Pedestrian violations are tabulated as a single category in the data so it is not possible to distinguish the particular pedestrian actions that cause collisions. Some well-known pedestrian violations include failing to obey traffic signals and jaywalking (crossing outside of a legal crosswalk).

PRIMARY COLLISION FACTOR	NUMBER	% OF TOTAL
PEDESTRIAN		
PED VIOLATIONS	513	28.4
PED OR OTHER UNDER INFLUENCE	27	1.5
AUTO RIGHT-OF-WAY VIOLATION	18	1.0
SUBTOTAL	**558**	**30.9**
DRIVER		
PED RIGHT-OF-WAY VIOLATION	625	34.6
UNSAFE SPEED	70	3.9
UNSAFE PARKING/BACKING	69	3.8
IMPROPER TURNING	54	3.0
DRIVING UNDER THE INFLUENCE (DUI)	34	1.9
IMPROPER PASSING	25	1.4
OTHER HAZARDOUS MOVEMENTS	19	1.1
WRONG SIDE OF ROAD	12	0.7
OTHER IMPROPER DRIVING	2	0.1
HAZARDOUS PARKING	2	0.1
IMPEDING TRAFFIC	1	0.1
SUBTOTAL	**913**	**50.5**
OTHER		
UNKNOWN	280	15.5
TRAFFIC SIGNAL/SIGN	41	2.3
OTHER THAN DRIVER OR PED	15	0.8
SUBTOTAL	**336**	**18.6**
TOTAL	1807	100.0

FIGURE 6 PRIMARY COLLISION FACTORS TABLE

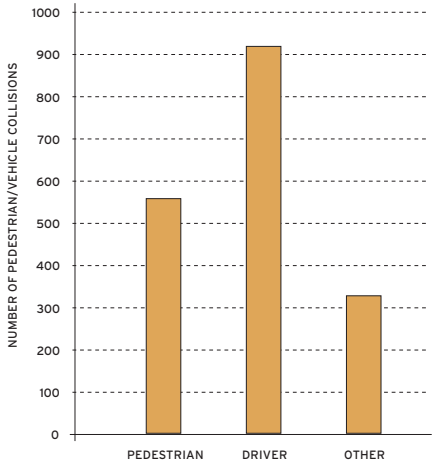


FIGURE 7 PRIMARY COLLISION FACTORS CHART

Pedestrian/Vehicle Collision Data

Half of pedestrian/vehicle collisions occur when the pedestrian is in a crosswalk (marked or unmarked). Accounting for 33% of the total, the next most frequent pedestrian action in collisions is crossing not in a crosswalk. For collisions with pedestrians violating motor vehicle rights-of-way, pedestrians were not in crosswalks 74% of the time. For collisions with drivers violating pedestrian rights-of-way, pedestrians are in crosswalks 90% of the time. By age, seniors are the most likely to be hit by a vehicle while in a crosswalk. Conversely, children are the most likely to be hit by a vehicle while not in a crosswalk.

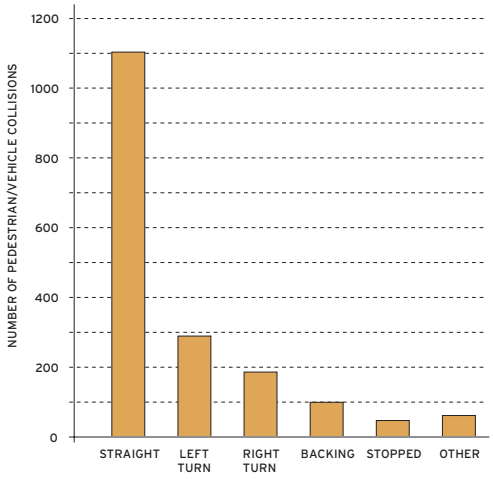


FIGURE 8 MOVEMENT PRECEDING COLLISION

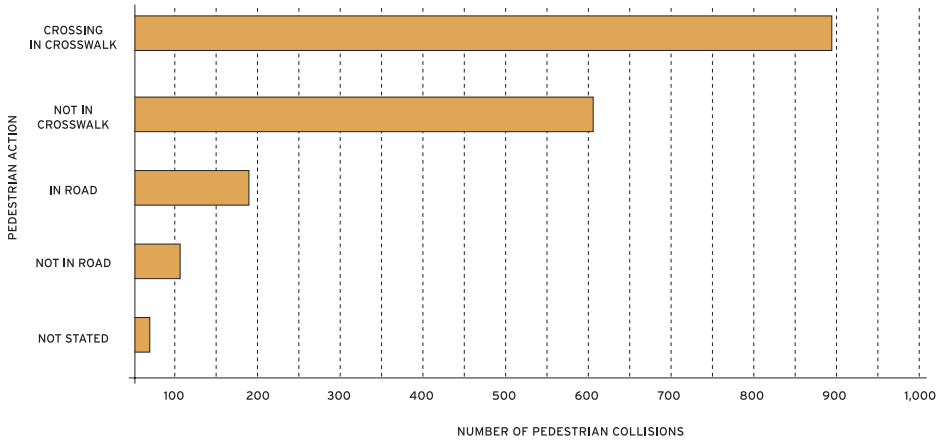


FIGURE 9 PEDESTRIAN ACTION IN COLLISION

Driver Speed and Pedestrian Collisions

Data on driver speed is difficult to obtain and this difficulty may explain why speeding is infrequently identified as a primary collision factor. According to the Oakland Police Traffic Enforcement Division, speed is difficult to determine because accurate estimates depend upon forensic analysis or detailed witness statements. According to National Highway Traffic Safety Administration data including both vehicle collisions and pedestrian collisions, "In 1997, speeding was a contributing factor in 30% of all fatal crashes." (FHWA 2002b, p. 13).

Higher speeds increase the severity of collisions between vehicles and pedestrians. One study identified an 85% chance of pedestrian fatality at 40mph, which declines to 45% at 30mph and 5% at 20mph (FHWA 2002b, p. 13). The Federal Highway Administration explains, "At higher speeds, motorists are less likely to see a pedestrian, and even less likely to

actually stop in time to avoid a crash. At a mere 31 mph, a driver will need about 200 ft. to stop which may exceed available sight distance; that number is halved at 19 mph" (FHWA 2002b, p. 8).

Location of Pedestrian Collisions

Most pedestrian/vehicle collisions occur in downtown, in Chinatown, and along arterial streets. Both downtown and Chinatown have high levels of pedestrian activity and high levels of motor vehicle traffic on multi-lane, one-way streets. Many signalized intersections in this area do not have pedestrian signal heads to inform pedestrians when it is safe to cross. The city is in the process of installing pedestrian signal heads for all existing traffic signals.

The following figures show the intersections with the greatest number of pedestrian collisions, senior pedestrian collisions, and child pedestrian collisions, respectively. For intersections

with the most pedestrian collisions, seven out of eleven of those intersections have traffic signals. For the senior pedestrian collisions, four of

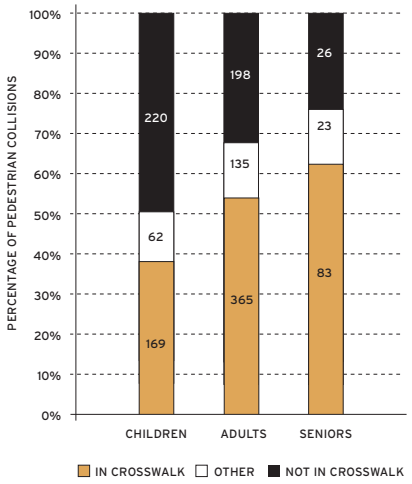


FIGURE 10 PEDESTRIAN ACTION IN VEHICLE COLLISION (BY AGE GROUP)

RANK	INTERSECTION	COLLISIONS	TRAFFIC SIGNAL
1	INTERNATIONAL BOULEVARD / 64TH AVENUE	11	NO
2	FRUITVALE AVENUE / FOOTHILL BOULEVARD	11	YES
3	38TH AVENUE / MACARTHUR BOULEVARD	9	YES
4	7TH STREET / FRANKLIN STREET	9	NO
5	INTERNATIONAL BOULEVARD / 90TH AVENUE	8	YES
6	14TH STREET / MADISON STREET	8	YES
7	FRUITVALE AVENUE / MACARTHUR BOULEVARD	7	YES
8	INTERNATIONAL BOULEVARD / 35TH AVENUE	7	YES
9	40TH STREET / TELEGRAPH AVENUE	7	YES
10	77TH AVENUE / BANCROFT AVENUE	7	NO
10	D STREET / 98TH AVENUE	7	NO

FIGURE 11 TOP 10 RANKED INTERSECTIONS BY NUMBER OF PEDESTRIAN COLLISIONS (1996-2000)

Pedestrian/Vehicle Collision Data

the eleven intersections have traffic signals and six of out of the eleven intersections are located within 1/4 mile of a senior center. For child pedestrian collisions, six out of ten intersections have traffic signals and eight of the ten intersections are located within 1/4 mile of a school.

The pedestrian safety problem is especially severe on Oakland's arterial streets. According to the Alameda Countywide Bicycle Plan, International Boulevard, Foothill Boulevard, and MacArthur Boulevard have the highest number of pedestrian collisions for all streets in the county. Approximately 10% of Oakland's pedestrian collisions take place along International Boulevard alone. Figure 14 gives the top ten pedestrian/vehicle collision

RANK	INTERSECTION	COLLISIONS	TRAFFIC SIGNAL	SENIOR CENTER (WITHIN 1/4 MILE)
1	28TH STREET/BROADWAY	4	NO	YES
2	38TH AVENUE/MACARTHUR BOULEVARD	3	YES	YES
3	FOOTHILL BOULEVARD/FRUITVALE AVENUE	3	YES	YES
4	108TH AVENUE/BANCROFT AVENUE	2	NO	NO
5	E. 16TH STREET/FRUITVALE AVENUE	2	NO	YES
6	24TH STREET/MARKET STREET	2	NO	NO
7	40TH STREET/TELEGRAPH AVENUE	2	YES	NO
8	41ST STREET/TELEGRAPH AVENUE	2	NO	NO
9	57TH AVENUE/BANCROFT AVENUE	2	NO	YES
10	5TH AVENUE/10TH STREET	2	YES	YES

FIGURE 12 TOP 10 RANKED INTERSECTIONS FOR SENIORS (1996-2000)

RANK	INTERSECTION	COLLISIONS	TRAFFIC SIGNAL	SCHOOL (WITHIN 1/4 MILE)
1	33RD STREET/PARK BOULEVARD	4	NO	YES
2	57TH AVENUE/BANCROFT AVENUE	4	NO	NO
3	11TH STREET/JACKSON STREET	3	YES	YES
4	18TH STREET/MARKET STREET	3	YES	YES
5	64TH AVENUE/FOOTHILL BOULEVARD	3	NO	YES
6	68TH AVENUE/FOOTHILL BOULEVARD	3	NO	YES
7	82ND AVENUE/BANCROFT AVENUE	3	YES	YES
8	BROOKDALE AVENUE/HIGH STREET	3	YES	YES
9	MACARTHUR BOULEVARD/HIGH STREET	3	YES	NO
10	INTERNATIONAL BOULEVARD/98TH AVENUE	2	YES	YES

FIGURE 13 TOP 10 RANKED INTERSECTIONS FOR CHILDREN (1996-2000)

streets over the total length of the street in the City of Oakland. Figure 15 gives the top ten pedestrian/vehicle collision streets per road mile of the street in the City of Oakland.

At-Risk Groups

By age group, children and seniors are the most likely to be involved as a pedestrian in a pedestrian/vehicle collision. Male drivers are over-represented by sex in pedestrian/vehicle collisions. Furthermore, younger drivers are over-represented by age in pedestrian/vehicle collisions. As pedestrians, African-Americans and Hispanics are at an elevated risk of injury.

While data are unavailable for pedestrian collision rates amongst people with disabilities, they are widely recognized as an at-risk group.

From 1996 to 2000, 1446 injury records specify the pedestrian's age. For 37% of these, the pedestrians were children (17 years and under) even though they comprised 25.0%

	STREET	NUMBER OF PEDESTRIAN/VEHICLE COLLISIONS (1996-2000)
1	INTERNATIONAL BOULEVARD	174
2	MACARTHUR BOULEVARD	125
3	FOOTHILL BOULEVARD	96
4	BROADWAY	60
5	TELEGRAPH AVENUE	57
6	FRUITVALE AVENUE	50
7	BANCROFT AVENUE	45
8	GRAND AVENUE (TIE)	43
9	12TH STREET (TIE)	43
10	WEBSTER STREET	38

FIGURE 14 TOP 10 RANKED VEHICLE/COLLISION STREETS BY TOTAL NUMBER OF COLLISIONS

	STREET	NUMBER OF PEDESTRIAN/VEHICLE COLLISIONS PER ROAD MILE (1996-2000)
1	INTERNATIONAL BOULEVARD	26.2
2	FRUITVALE AVENUE	20.1
3	FRANKLIN STREET	19.8
4	FOOTHILL BOULEVARD	18.0
5	TELEGRAPH AVENUE	17.5
6	BROADWAY	15.5
7	35TH AVENUE	13.4
8	HIGH STREET	13.3
9	GRAND AVENUE	13.2
10	WEBSTER STREET	12.8

FIGURE 15 TOP 10 RANKED COLLISION STREETS BY NUMBER OF COLLISIONS PER ROAD MILE

Pedestrian/Vehicle Collision Data

of the City's population (U.S. Census 2000). That children suffer the highest rates of pedestrian injury is generally attributed to the risk taking behavior of youth and, for those under 10 years of age, a cognitive inability to judge the speed and danger of motor vehicle traffic.

Children tend to get hit near schools. They are also over-represented in collisions where the pedestrian was crossing not in a crosswalk. In fact, 56% of pedestrian violations are committed by youth even though they represent 25% of the population.

Seniors (65 years and over) suffer the highest rates of pedestrian fatality accounting for 24% of the fatal pedestrian/motor vehicle collisions. However, Oakland seniors comprised 10.5% of the population (U.S. Census 2000). Seniors tend to get hit near their homes and senior centers. Of all age groups, seniors are the most likely to be hit in crosswalks. Senior fatalities are often attributed to the frailty of older age.

People of color are disproportionately represented in pedestrian/vehicle collisions. In Alameda County, African-Americans are 2.5 times more likely than Caucasians to be hospitalized or killed as a pedestrian in a collision. The rates of pedestrian hospitalization and fatality are 30.9 per 100,000 for African-Americans and 12.3 per 100,000 for Caucasians (Center for Third World Organizing). African-Americans are 50% more likely than Caucasians to be killed in a pedestrian/vehicle collision. The rates of pedestrian fatality are 11.2 per 100,000 for African-Americans and 7.4 per 100,000 for Caucasians (Alameda County 2000).

AGE GROUP	0-4	5-9	10-13	14-17	18-24	25-34	35-44	45-54	55-64	65+	TOTAL
INJURY	119	193	114	104	131	176	208	174	83	144	1446
FATALITY	2	1	0	0	3	1	5	11	5	9	37
% OF INJURIES	8.2%	13.3%	7.9%	7.2%	9.1%	12.2%	14.4%	12.0%	5.7%	10.0%	-
% OF FATALITIES	5.4%	2.7%	0.0%	0.0%	8.1%	2.7%	13.5%	29.7%	13.5%	24.3%	-
% OF POPULATION	7.1%	7.5%	5.4%	4.9%	9.6%	18.1%	15.8%	13.5%	7.4%	10.5%	-

FIGURE 16 PEDESTRIAN INJURIES/FATALITIES BY AGE GROUP (1996-2000)

In the City of Oakland, the density of pedestrian/vehicle collisions is greatest in minority and low-income neighborhoods including Chinatown, the Fruitvale, and along International and Foothill Boulevards. These neighborhoods are some of the densest in the City and have high levels of pedestrian activity and transit ridership. The SWITRS database, which is the primary source for this data analysis, does not record race or ethnicity in pedestrian/vehicle collisions.

Time of Pedestrian Collisions

Overall, pedestrian/vehicle collisions correspond to times of high pedestrian and vehicle volumes. The risk of pedestrian injury rises during the day and peaks during the evening rush hour. The risk also rises, though less dramatically, to a peak on Friday. Peak collision times for children are before and after school hours. Peak collision times for adults are the morning and evening rush hours. For seniors, collisions occur at relatively constant levels throughout the day with a small peak during the morning rush hour. Fewer collisions occur on weekends than during the week.

Collisions with pedestrians occur year round at consistent levels with a slight rise during the winter months from October to February.

Collisions Between Pedestrians and Bicyclists

While bicycling on the sidewalk is an issue for pedestrians, no pedestrian/bicyclist collisions in Oakland were recorded in the SWITRS database from 1996 to 2000. Given the light weights and typically low speeds of bicyclists compared to motor vehicles, this issue may be more annoyance than hazard to pedestrians when compared to the frequency and risk of pedestrian/motor vehicle collisions.

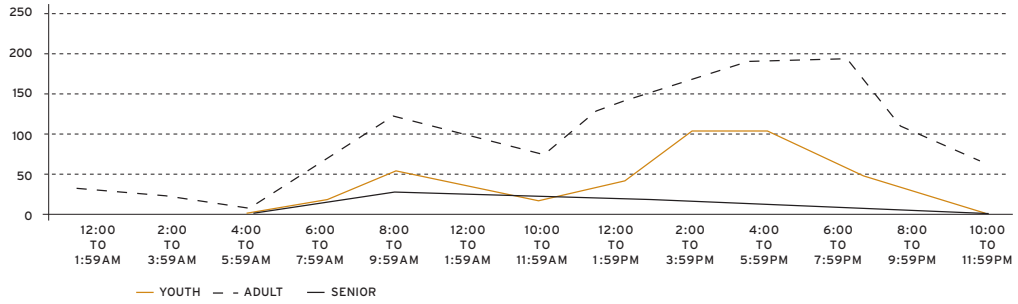


FIGURE 17 PEDESTRIAN COLLISIONS BY TIME OF DAY

Pedestrian/Vehicle Collision Data

CITY/ POPULATION	FATALITIES PER 100,000	INJURIES PER 100,000
OAKLAND 399,900	3.0	85.5
BERKELEY 108,900	1.7	129.7
LONG BEACH 452,900	2.3	79.1
LOS ANGELES 3,781,500	3.0	78.0
RICHMOND 93,800	1.3	50.5
SACRAMENTO 396,200	2.8	62.7
SAN FRANCISCO 790,500	3.5	134.2
SAN JOSE 909,100	1.9	45.8

FIGURE 18 PEDESTRIAN INJURY AND FATALITY FOR SELECTED CALIFORNIA CITIES (AVERAGES OF SWITRS 1995-1999 ANNUAL REPORTS)

Oakland Compared to the Rest of California

Rates of pedestrian/vehicle collisions in Oakland are higher than statewide averages. In 1999, 19.1% of injury and fatality collisions in Oakland involved a pedestrian, compared to 8.0% statewide. That same year, one in 1,292 Oaklanders was a pedestrian injury or fatality compared to one in 2,700 Californians (Institute of Transportation Studies 2001).

In the State of California from 1995 to 1999, Oakland had the second highest rate of pedestrian fatalities after San Francisco. Oakland had the third highest rate of pedestrian injuries after San Francisco and Berkeley. These higher rates of pedestrian injury and fatality are explained in part by cities like Oakland, San Francisco, and Berkeley having more pedestrians than other cities in the State.

School Safety

The Oakland Unified School District enrolls 53,000 students in approximately 100 schools, of which 61 are elementary schools. Many of these schools are located on or near arterial streets. At the district's largest elementary schools, approximately 75% of children walk to school.

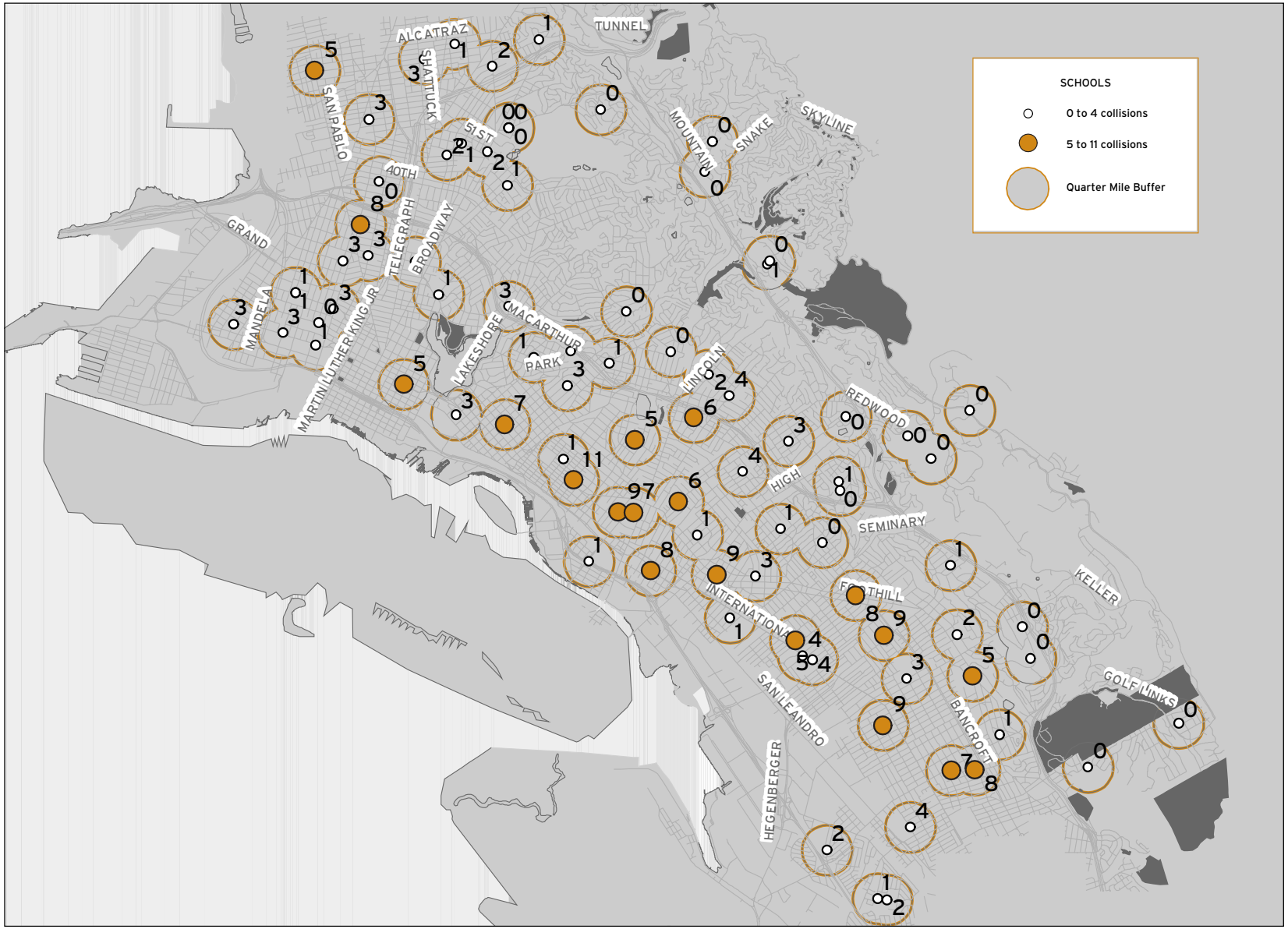
Assuming an average walking rate of 50% for students, Oakland public schools would generate 53,000 weekday pedestrian trips. For example, Hawthorne Elementary is the largest elementary school in the district with 1179 students enrolled in the 2001–2002 school year. Three-quarters of those children walking means approximately 875 walking trips to and from school, or 1,750 pedestrian trips per weekday. While exact numbers are unavailable, walking rates are expected to be much lower for schools in the Oakland Hills. Similarly, the total number of weekday pedestrian trips will be comparatively small for schools with significantly fewer students. At elementary schools, many parents also walk with their children.

Figure 20 lists the public schools with the greatest number of nearby child pedestrian/vehicle collisions. All of the collisions listed involved pedestrians of 17 years or under and occurred within 1/4 mile of the school. There may be some double counting of collisions because of overlap in the 1/4 mile area around schools, which is not corrected for in this document.

In spring 2002, the Transportation Services Division began examining the existing conditions at these schools to identify possible pedestrian safety improvements. The following chapters on the Pedestrian Route Network and Policy Recommendations provide additional information on improving school safety in general.

RANK	SCHOOL	ADDRESS	NUMBER OF CHILD PEDESTRIAN/VEHICLE COLLISIONS OVER 5 YEARS WITHIN 1/4 MILE
1	GARFIELD YEAR ROUND ELEMENTARY SCHOOL	1650 22ND AVENUE	11
2	HAWTHORNE YEAR ROUND ELEMENTARY SCHOOL	1700 28TH AVENUE	9
3	HIGHLAND YEAR ROUND ELEMENTARY SCHOOL	8521 A STREET	9 (TIE)
4	FREMONT HIGH SCHOOL	4610 FOOTHILL BOULEVARD	9 (TIE)
5	MARKHAM ELEMENTARY SCHOOL	7220 KRAUSE AVENUE	9 (TIE)
6	E MORRIS COX ELEMENTARY SCHOOL	9860 SUNNYSIDE STREET	8
7	DEWEY HIGH SCHOOL	3709 E. 12TH STREET	8 (TIE)
8	HOOVER ELEMENTARY SCHOOL	890 BROCKHURST STREET	8 (TIE)
9	FRICK JUNIOR HIGH SCHOOL	2845 64TH AVENUE	8 (TIE)
10	FRANKLIN YEAR ROUND ELEMENTARY SCHOOL	915 FOOTHILL BOULEVARD	7
10	CHARLES WHITTON ELEMENTARY SCHOOL	2920 E. 18TH STREET	7 (TIE)
10	ELMHURST MIDDLE SCHOOL	1800 98TH AVENUE	7 (TIE)

FIGURE 19 TOP TEN RANKED CHILD PEDESTRIAN/VEHICLE COLLISION SCHOOLS (1996-2000)



MAP 2 CHILD PEDESTRIAN/VEHICLE COLLISIONS NEAR SCHOOLS–OAKLAND (1996-2000)

Connections to Transit

Transit is a significant source of pedestrian trip generation. The Alameda-Contra Costa Transit District (AC Transit) and the Bay Area Rapid Transit District (BART) are the major providers of transit service in the City of Oakland. AC Transit's five largest bus lines travel along Oakland's major corridors and there are numerous smaller lines that cross all areas of the City. BART serves Oakland with eight passenger rail stations.

In Oakland, approximately 148,000 pedestrian trips on weekdays are to or from AC Transit buses.* People using Oakland BART stations may account for another 57,000 pedestrian trips.** These numbers are significant because many surveys on transportation mode share do not count how people get to and from transit. To suggest where those trips occur, Figure 21 identifies the five largest bus lines in Oakland and their daily patronage. Each of

BUS LINE (CORRIDOR)	1998 DAILY PATRONAGE
40/40L/43 TELEGRAPH/SHATTUCK/FOOTHILL/BANCROFT	22,000
51 COLLEGE/UNIVERSITY/BROADWAY/ALAMEDA	17,000
57/58 MACARTHUR	19,000
72/72L/73 SAN PABLO	13,000
82/82L E. 14TH/INTERNATIONAL	22,500
5 LINE TOTAL	93,500
SYSTEM TOTAL	**206,000**
% OF SYSTEM TOTAL	**45%**

FIGURE 20 AC TRANSIT DAILY RIDERS, TRUNK LINES (AC TRANSIT 2002)

* The number of 148,000 pedestrian trips is based on weekday boardings and alightings for AC Transit's Central and East Oakland planning zones (AC Transit Boarding and Alighting Survey, Fall 1997 – Winter 1998). Total pedestrian trips were computed using AC Transit's 1993 systemwide on-board survey that found 74.0% of respondents walked to the bus and 66.5% of respondents walked from the bus. The total figure may be slightly inflated because the Central Oakland planning zone includes Piedmont and Emeryville. On the other hand, the figure may be slightly deflated because it does not include pedestrian trips to or from transbay buses.

** Data on walking mode share to and from BART stations in the City of Oakland is not available. The number of 57,000 pedestrian trips is a rough estimate based on the following two assumptions. First, it assumes that average weekday entrances and exits to the BART system in the City of Oakland are approximately equal. This assumption suggests that there are 114,000 entrances to and exits from the BART system in Oakland. Second, it assumes that each BART rider will be a pedestrian on one end of her or his trip. This assumption suggests that half of all entrances and exits – 57,000 – will be pedestrian trips.

these corridors is identified as a major pedestrian route in the Pedestrian Route Network described in Chapter 3. Figure 21 provides average weekday exits and the walking mode share for AM peak entrances at each BART station in Oakland. For the stations in downtown Oakland, the pedestrian mode share for AM peak exits is likely much higher than for AM peak entrances.

BART STATIONS	AVERAGE WEEKDAY EXITS	WALKING MODAL SHARE (AM PEAK ENTRANCES)	PEDESTRIAN CONDITIONS
12th Street	12,510	27%	Downtown location – needs improved access under Interstate 880 to Jack London District.
19th Street	8,327	46%	Downtown location – needs crossing improvements along Broadway and 20th Street.
Coliseum	6,854	5%	Low density of surrounding land uses does not support pedestrian activity. Sidewalks are absent on north side of San Leandro Street. San Leandro is a wide and fast street that is not pleasant to walk along or cross.
Fruitvale	8,217	10%	The Fruitvale Transit Village Plan is addressing access issues to the Fruitvale BART station. Current conditions include unpleasant access through a parking lot via 34th Street.
Lake Merritt	4,655	27%	Downtown location – needs improved access under Interstate 880 to Jack London District.
MacArthur	6,527	24%	Needs improved connections under Highway 24 to the west side and Martin Luther King Jr. Way. Access from Telegraph Avenue via 40th Street is hazardous. Collisions have occurred at illegal mid-block crossing on 40th.
Rockridge	4,916	29%	This station is integrated into the surrounding land uses. Access for pedestrians is excellent. One-way streets surrounding the station area may encourage speeding.
West Oakland	4,979	9%	Low density of surrounding land uses does not support a large share of pedestrian activity. 7th Street is a multi-lane street that is difficult to cross due to large volumes of car and truck traffic and infrequent traffic signals.
Oakland Total	56,985		

FIGURE 21 BART DAILY RIDERS, OAKLAND STATIONS (BART 2000)

Education and Enforcement

The Oakland Pedestrian Safety Project (OPSP) is responsible for pedestrian safety education in the City of Oakland. Formed in 1995, the OPSP addresses pedestrian safety by building coalitions between City staff from the Public Works Agency, Community and Economic Development Agency, Police and Fire Services, Life Enrichment Agency as well as representatives of the Oakland Children's Hospital and other public health agencies and community representatives. Beginning in 2000, the OPSP was funded by a two-year, $600,000 grant from the State Office of Traffic Safety.

OPSP emphasizes the "three E's" of pedestrian injury prevention: Education, Engineering, and Enforcement. The major educational activities of the OPSP are:

- Walk a Child to School Day (annual event)
- Pedestrian Safety Week (annual event)

- Safe Moves Town (pedestrian safety training for children)
- public relations campaigns (including "It's Our Town, Let's Slow it Down")

The Oakland Police Department (OPD) works in conjunction with the OPSP to target enforcement of laws that promote pedestrian safety. OPD pedestrian safety programs include the following:

- pedestrian right-of-way enforcement ("pedestrian stings")
- pedestrian violation enforcement (jaywalking)
- data checklist of pedestrian collision information data (providing additional data on pedestrian collisions collected by officers)

The perception of criminal activity in streets is a deterrent to pedestrian activity. In addition to the regular beat operations of the OPD, the City of Oakland developed the Safe Walks to School program through the Office of the City Manager to protect children from assault when walking to and from school. The Safe Walks to School program is funded from allocations of Community Development Block Grant funds through Community Development District Boards.

The Safe Walks to School program places site monitors along the most heavily traveled streets of selected schools during the hours when children are present. Locations for the Safe Walks to School program were selected by rates of criminal activity affecting youth and truancy rates. Initiated in 2000-2001 school year, the program is currently in operation at five Oakland Public Schools.

Community Outreach

The community outreach process for the Pedestrian Master Plan consisted of community presentations plus monthly meetings throughout the two-year planning process of the Citizen's Pedestrian Advisory Committee (CPAC) and the Technical Advisory Committee (TAC).

Community Outreach Presentations

The Oakland Pedestrian Safety Project (OPSP) conducted 70 community presentations reaching 1,750 Oaklanders during the planning process. Members of the CPAC and staff of OPSP brought citywide collision maps to Neighborhood Crime Prevention Councils (NCPCs) and community groups throughout the City. Citizens identified areas and issues of concern through these outreach efforts. The City Commissions on Aging and Disability and the Public Safety Committee of the City Council were additional sources of input.

The community meetings identified the following two major issues throughout the city:

- safety walking along and crossing major streets
- safety walking to and around schools

Regardless of the particular neighborhood, the overwhelming proportion of community feedback identified crossing streets with two or more lanes in each direction as a major obstacle to safe and comfortable walking. This issue speaks directly to the balancing act between accommodating vehicles traveling through a neighborhood and accommodating pedestrians within a neighborhood. Second, community groups identified the safety of routes to school and safety along the perimeter of schools including drop off and pick up areas. In particular, large numbers of parents driving children to school create hazardous conditions for kids. *These two issues regarding schools and major streets are directly related because community concern is often greatest where routes to school cross wide streets.*

"At the core...is the pedestrian. Pedestrians are the catalyst, which makes the essential qualities of communities meaningful. They create the place and time for casual encounters and the practical integration of diverse places and people. Without the pedestrian, a community's common ground – its parks, sidewalks, squares and plazas, become useless obstructions to the car. Pedestrians are the lost measure of a community, they set the scale for both center and edge of our neighborhoods."

Peter Calthorpe

Community Outreach

The following list explains other issues identified in community meetings as common concerns:

Crossing Issues

- Streets with large volumes of motor vehicles are difficult to cross.
- Many busy pedestrian areas don't have frequent enough crossings.
- Streets with many lanes are difficult to cross because of their width.
- Drivers often do not yield for pedestrians at crosswalks.
- Traffic signals do not provide enough crossing time for families, seniors, and persons with disabilities.
- Local streets are dangerous to cross when used as "cut-through" routes by drivers.

Enforcement

- Speeding cars are a problem on both one-way and multi-lane streets.
- Speeding cars entering and exiting freeways threaten pedestrian safety.
- Speeding buses are a problem.
- Double-parked vehicles block sight lines between pedestrians and drivers.
- Cars parked on sidewalks create hazards by forcing pedestrians into the street.

School Safety Issues

- Residents are concerned about drivers failing to yield to pedestrians in school zones.
- Drivers do not always obey stop signs and crossing guards in school zones.
- Some streets near schools are missing sidewalks.
- Traffic moves too fast near many schools.
- Children do not understand how streets are dangerous.
- Schools do not have enough crossing guards and stop signs to regulate traffic.
- Double parking in school zones needs more stringent enforcement.
- Residents are frustrated by drivers who "do donuts" on local streets and near schools.

Streetscaping Issues

- The prevalence of trash and petty crime discourages walking.
- Older curb ramps are too steep for persons in wheelchairs and create drainage problems.
- Diagonal curb ramps direct people into the intersection, not the crosswalk.
- Many sidewalks and crosswalks are not adequately lit.
- Neighborhood commercial streets should be safe and inviting for pedestrians.
- The area between Lake Merritt and the Estuary lacks an adequate pedestrian connection.

Citizen's Pedestrian Advisory Committee

The Citizen's Pedestrian Advisory Committee (CPAC) provided continuous public oversight and feedback during the development of the Pedestrian Master Plan. The CPAC was composed of district representatives appointed by each City Councilmember and one mayoral appointee from each of the Mayoral Commissions on Aging and Disability. Additional representatives of several community stakeholder groups including the Building Owner's and Manager's Association (BOMA), the Bicycle and Pedestrian Advisory Committee, and Urban Ecology also attended meetings. The CPAC met monthly for one and a half years to oversee the planning process. Members of the CPAC are listed in the Acknowledgements at the beginning of this document.

Technical Advisory Committee

The Technical Advisory Committee (TAC) was comprised of city staff and provided an analogous role to the CPAC. Meetings included representatives from the Public Works Agency, Community and Economic Development Agency (CEDA), City Manager's Americans with Disabilities Act (ADA) Programs, and other City departments and programs. The TAC was also a forum for working with the Alameda-Contra Costa Transit District (AC Transit). The TAC met monthly for over one and a half years. Members of the TAC are listed in the Acknowledgements at the beginning of this document.