CHAPTER 4
IDENTIFICATION OF HIGH PEDESTRIAN CRASH SITES

The geo-coded pedestrian crash data was used to identify high pedestrian crash zones and sites in the study area. The GIS based methodology to identify pedestrian high crash zones and sites is presented next. The methodology involves several steps.

**Step 1 - Identify Pedestrian Crash Problems**
The focus of this step is to identify crash problems based on pedestrian crash characteristics in the study area. This is the first step of the zoning methodology recommended by NHTSA to identify high pedestrian crash sites. An overall analysis has to be conducted in order to identify pedestrian crash problems. As examples, pedestrian crashes at signalized intersections, pedestrian crashes at mid-block locations, pedestrian crashes involving children, and pedestrian crashes involving senior citizens are significant pedestrian crash problems in Las Vegas metropolitan area.

**Step 2 - Address Match Pedestrian Crash Data**
Until recently, NDOT used to store crash location related information in a crash database based on one of the 3 reference systems: street name / reference street name, mile post, or street address. The street name / reference street name location referencing system is mostly used in urban areas whereas mile post referencing system is used in rural areas. Mid-block locations are sometimes referenced using street address. The type of reference system, thus, depends on the focused study area. If the focus is to identify locations in a metropolitan area, then street name / reference street name location reference system is suitable. Pedestrian crash locations could be address matched using the “addressmatch” feature available in commonly used GIS software programs.

**Step 3 – Define Study Area**
The study area has to be identified and defined for analysis and evaluation of pedestrian safety countermeasures at selected pedestrian high crash sites. Such a study area could comprise of a set of zip codes, traffic analysis zones (TAZs) - (typically used in travel demand forecasting), census blocks, or census tracts.

Using TAZs or census blocks could lead to erroneous results in places like Las Vegas where large activity centers may have very little resident population. For example, a large hotel casino in Las Vegas may be a TAZ by itself with significant number of pedestrian crashes occurring in the TAZ. However, the resident population in such a TAZ would be very small because the census data do not consider guests or employees at hotels in resident population counts. Thus, the pedestrian rate (discussed on the next page) would be high indicating that the area is a “high pedestrian risk area” – which is not true. If it were possible to obtain accurate estimates of the number of people in TAZs (accounting for non-resident population), TAZs would serve as excellent candidates to identify zones. Considering such issues, a zip code was felt appropriate for analyses.
The address-matched pedestrian crash data is overlaid on the zip code coverage. The number of pedestrian crashes in each zip code is then estimated. The overlay process also facilitates incorporating data characterizing the zip code. Examples of such data include population, demographic, socio-economic, and land use characteristics.

The pedestrian crash rate is calculated by dividing the number of pedestrian crashes estimated in a zip code by the total population in the zip code. In fact, the pedestrian crash rates should be based on the nature of the safety problem being evaluated. For example, if pedestrian crashes involving senior citizens is the problem, pedestrian crash rates should be calculated by dividing the total number of pedestrian crashes involving senior citizens in the zip code by the total number of senior citizens in the same zip code. The study area should then be identified comprising of zip codes with significant pedestrian crash problem.

**Step 4 – Identify Pedestrian High Crash Zones in the Study Area**
The focus of this step is to identify pedestrian high crash zones (corridors comprising a set of links) in the study area. The road network in the study area has to be analyzed to identify zones with clusters of crashes.

**Step 5 – Rank Pedestrian High Crash Zones**
A detailed analysis of pedestrian crashes in each zone is then conducted. Pedestrian crash indices are developed to help such analyses. These look at aspects such as pedestrian crashes in the vicinity of a zone, severity of such crashes, and length of the zone (corridor).

Two different types of crash indices were developed in this study. The first index, Crash Index 1, is computed by multiplying the total number of pedestrian crashes in the zone per mile by a weighted factor and then divided by 100. The weighted factor is computed by dividing the total number of fatal pedestrian crashes and severe injury crashes (injury type “A”; discussed in the next page) by the length of the corridor. Crash Index 1 is mathematically represented using the following equation:

\[
\text{Crash Index } 1_{\text{Zone}} = \frac{\# \text{ Ped Crashes}_{\text{Zone}} \times \# \text{ Fatal Ped Crashes}_{\text{Zone}} + \# \text{ Severe Injury Ped Crashes}_{\text{Zone}}}{\text{Length}_{\text{Zone}}} 
\]

The second measure, Crash Index 2, is computed by multiplying the total number of pedestrian crashes in the zone per mile by a weighted factor and then divided by 100. The weighted factor is computed by dividing the total number of fatal pedestrian crashes times 5 and severe injury crashes times 3 by the length of the corridor. Crash Index 2 is mathematically represented using the following equation:

\[
\text{Crash Index } 2_{\text{Zone}} = \frac{\# \text{ Ped Crashes}_{\text{Zone}} \times 5 \times \# \text{ Fatal Ped Crashes}_{\text{Zone}} + 3 \times \# \text{ Severe Injury Ped Crashes}_{\text{Zone}}}{\text{Length}_{\text{Zone}}} 
\]
The zones are then ranked based on either Crash Index 1 or Crash Index 2 to allocate funds to enhance safety in the selected zones.

**Step 6: Identify High Crash Sites in the Selected Zones**

Not all sites in the zones have significant pedestrian crash problems. Also, the type of problem could differ between locations within a zone. The focus of this task is to research and identify high pedestrian crash sites in each zone. Pedestrian safety countermeasures are then selected by analyzing pedestrian crashes and their causes at each site in each zone.

**Results and Discussion**

Figure 16 (page 4-18) shows fatal crashes and injury crashes in the Las Vegas metropolitan area between 1996 and 2000. Figure 17 (page 4-19) shows computed pedestrian crash rates by zip code. Shaded zones indicate those zones that have pedestrian crash rates higher than the average pedestrian crash rate per 1,000 populations for the entire study area.

Figure 18 (4-20) shows selected high risk zones (corridors) to research pedestrian safety countermeasures in the study area. Figures 19 through 34 (pages 4-21 through 4-36) show pedestrian crashes at identified high pedestrian crash zones.

Figure 35 (page 4-37) shows the number of pedestrian crashes in each zone. Figure 36 (page 4-38) shows the percent of pedestrian crashes by location in each zone. Figure 37 and 38 (pages 4-39 and 4-40) show the percent of pedestrian crashes by age of pedestrian involved in crashes in each zone. Figure 39 (page 4-41) shows the percent of day time and night time pedestrian crashes in each zone. Figure 40 (page 4-42) shows percent of pedestrian crashes by injury type. Injury type "A" designates a serious visible bleeding injury such as a compound fracture or large gaping wound. Victim, in this case, must be transported. Injury type "B" indicates minor visible injury such as a bruise or abrasion with minor bleeding. Injury type "C" indicates non-visible injury.

Table 3 (pages 4-43, 4-44) shows pedestrian crash characteristics for each selected zone. Table 4 (pages 4-45, 4-46) shows the crash characteristics as percent of crashes in the zone. Demographic (population) characteristics of each zone are shown in Table 5 (page 4-47). Population characteristics include total population, population by gender, population by age group and population by ethnicity. Traffic and road conditions of each pedestrian high crash zone are shown in Table 6 (page 4-48). Computed Crash Index 1 and Crash Index 2 for each zone are shown in Table 7 (page 4-49). Rank of each crash zone based on Crash Index 1 and Crash Index 2 are shown in Table 8 (page 4-50).

Description of unique characteristics of the study area, characteristics of each zone such as existing road and traffic conditions, the crash profile, and pedestrian high crash sites in each zone are discussed next.
Unique Characteristics of the Study Area

- Over the last decade, based on population, the Las Vegas metropolitan area has been the fastest growing urban area in the US. This is expected to continue over the next decade.
- Because of the growth and rapid changes in land use, the Las Vegas area offers unique opportunities to implement and evaluate significant changes to the design and operations of transportation facilities.
- The Las Vegas metropolitan area has had one of the highest per capita pedestrian crash rates in the US.
- Lack of visibility and inadequate detection / comprehension of traffic control devices (for both motorists and pedestrians) are major concerns related to pedestrian safety.
- High motor vehicle speed is a common issue pertaining to pedestrian safety or lack thereof.
- Las Vegas has a relatively high proportion of children and senior population.
- The study area has a very diverse ethnic population (40 percent non-white)

1. Maryland Parkway: Flamingo Wash to Sierra Vista Drive

- This crash zone is classified as a 6-lane minor arterial, 0.81 centerline miles in length with a posted speed limit of 30 mph.
- The Average Daily Traffic (ADT) is about 42,000 vehicles.
- Diverse ethnic population – predominantly White and Hispanic population.
- Population in this area is mainly in the age group of 18 to 49 years. The second largest group in this area is the age group over 64 years of age.
- Land-uses adjacent to the corridor include shopping malls, commercial centers, schools, restaurants / fast food outlets, and high density residential – apartments.
- It is a part of the second busiest transit route in the Las Vegas valley (articulated buses on 10 minute headways).
- A total of 49 crashes occurred in this area during the study period 1996-2000 with 94 percent injury and 6 percent fatal.
- Female pedestrians were involved in 51 percent of the crashes in this area.
- Pedestrians less than 18 years old accounted for 24 percent of total crashes.
- Pedestrians aged 50 to 64 years old accounted for 10 percent of total crashes.
- Pedestrians over 64 years of age accounted for 8 percent of total crashes.
- Day time crashes accounted for 71 percent of total crashes.
- Monday (25 percent), Wednesday (16 percent), and Friday (20 percent) have a high percent of total crashes.
- Pedestrians crossing at an intersection with the signal accounted for 20 percent of total crashes.
- Pedestrians crossing at an intersection against signal accounted for 10 percent of total crashes.
- Pedestrians crossing at un-signalized intersections accounted for 10 percent of total crashes.
- Pedestrians crossing at non-intersection accounted for 31 percent of total crashes.
- Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 10 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 6 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 4 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total.
• This corridor contains high pedestrian risk sites at Maryland Parkway / Sierra Vista Drive, Maryland Parkway/ Dumont Street, and Maryland Parkway/ Twain Avenue.

2. Harmon Avenue: Paradise Road to Las Vegas Boulevard
• This crash zone is classified as 4-lane principal arterial, 1.10 centerline miles in length with a posted speed limit of 35 mph.
• The ADT is about 4,600 vehicles.
• Diverse ethnic population – predominantly Hispanic population
• Populations in this area are mainly in age groups of 18 to 49 year. The second largest group in this area is age group of 50 to 64 years.
• Land-uses adjacent to the corridor include Hotels/Casinos, commercial centers, and high-density residential apartments.
• A total of 82 crashes occurred in this corridor during the study period 1996-2000 with 96 percent injury and 3 percent fatality.
• Male pedestrians were involved in 71 percent of total pedestrian related crashes.
• Pedestrians less than 18 years old accounted for 7 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 16 percent of total crashes
• Pedestrians over 64 years of age accounted for 7 percent of total crashes.
• Day time crashes accounted for 44 percent of total crashes.
• Tuesday (17 percent), Friday (17 percent), and Saturday (23 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 33 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 10 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 4 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 34 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 4 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 12 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 2 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 1 percent of total.
• This corridor contains the high pedestrian risk locations at Harmon Avenue/ Paradise Road, Harmon Avenue: Paradise Road to Tropicana Wash, and at Harmon Avenue/ Las Vegas Boulevard.
3. Flamingo Road: Paradise Road to Las Vegas Boulevard

- This crash zone is classified as 6-lane principal arterial, 1.15 centerline miles in length with a posted speed limit of 35 mph.
- The ADT is about 62,000 vehicles.
- Diverse ethnic population – predominantly White population.
- Populations in this area are mainly in age groups of 18 to 49 year. The second largest group in this area is age group of 50 to 64 years.
- Land-uses adjacent to the corridor include Hotels/ casinos, malls, commercial center including restaurants and fast food outlets, and residential apartments.
- Total 84 crashes occurred in this area during the study period 1996-2000 with approximately 96 percent injury and 4 percent fatal.
- Male pedestrians were involved in 70 percent of the pedestrian related crashes.
- Pedestrians less than 18 years old accounted for 7 percent of total crashes.
- Pedestrians aged 50 to 64 years old accounted for 15 percent of total crashes.
- Pedestrians over 64 years of age accounted for 7 percent of total crashes.
- Day time crashes accounted for 44 percent of total crashes.
- Tuesday (17 percent), Friday (17 percent), and Saturday (23 percent) have a high percent of total crashes.
- Pedestrians crossing at an intersection with the signal accounted for 33 percent of total crashes.
- Pedestrians crossing at an intersection against signal accounted for 10 percent of total crashes.
- Pedestrians crossing at un-signalized intersections accounted for 4 percent of total crashes.
- Pedestrians crossing at non-intersection accounted for 33 percent of total crashes.
- Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
- Pedestrians ‘ran into roadway’ accounted for 4 percent of total crashes.
- Pedestrians ‘not in roadway’ accounted for 12 percent of total crashes.
- Pedestrians crossing at non-intersection with a crosswalk accounted for 2 percent of total crashes.
- Pedestrians crossing at intersection with no marked crosswalks accounted for 1 percent of total.
- This corridor contains the high pedestrian risk locations Flamingo Road / Las Vegas Boulevard, Flamingo Road / Koval Lane and Flamingo Road/Paradise Road. However, Flamingo Road/Las Vegas Boulevard intersection was excluded from the study as pedestrian overpasses were constructed and opened in 2000 with an objective to eliminate pedestrian movements at the intersection.

4. Bonanza Road: D Street to H Street

- This crash zone is classified as 4-lane minor arterial, 0.50 centerline miles in length with a posted speed limit of 35 mph.
- The ADT is about 18,700 vehicles.
- Diverse ethnic population – predominantly African-American population.
• Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is the age group over 64 years of age.
• Located close to the Las Vegas downtown area - considered to be socio-economically depressed area. Adjacent areas have lot of homeless people and a shelter / soup kitchen. The area also includes high residential-apartments
• Total 19 crashes occurred in this area during the study period 1996-2000 with 79 percent injury and 21 percent fatal.
• Male pedestrians were involved in 78 percent of the crashes.
• Pedestrians less than 18 years old accounted for 16 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 37 percent of total crashes
• Pedestrians over 64 years of age accounted for 0 percent of total crashes.
• Day time crashes accounted for 68 percent of total crashes.
• Tuesday (16 percent), Friday (26 percent), and Saturday (32 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 11 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 11 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 0 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 63 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 0 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 0 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 5 percent of total crashes.
• This corridor contains the high pedestrian risk locations at Bonanza Road/F Street and Bonanza Road/D Street.

5. Twain Avenue: Cambridge Street to Palos Verde Street
• This crash zone is classified as 4-lane minor arterial, 0.40 centerline miles in length with a posted speed limit of 30 mph.
• The ADT is about 22,500 vehicles.
• Diverse ethnic population – predominantly Hispanic population.
• Populations in this area are mainly in age groups of 18 to 49 year. The second largest group in this area is the age group over 64 years of age.
• Land-uses adjacent to the corridor include commercial center, restaurants and fast food outlets, and residential apartments.
• Total 20 crashes occurred in this area during the study period 1996-2000 with approximately 85 percent injury and 15 percent fatality.
• Female pedestrians were involved in 45 percent of crashes.
• Pedestrians less than 18 years old accounted for 35 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 20 percent of total crashes.
Pedestrians over 64 years of age accounted for 5 percent of total crashes.
Day time crashes accounted for 40 percent of total crashes.
Tuesday (30 percent), Wednesday (15 percent), Friday (25 percent), and Saturday (15 percent) have a high percent of total crashes.
Pedestrians crossing at an intersection with the signal accounted for 20 percent of total crashes.
Pedestrians crossing at an intersection against signal accounted for 0 percent of total crashes.
Pedestrians crossing at un-signalized intersections accounted for 5 percent of total crashes.
Pedestrians crossing at non-intersection accounted for 50 percent of total crashes.
Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
Pedestrians ‘ran into roadway’ accounted for 0 percent of total crashes.
Pedestrians ‘not in roadway’ accounted for 0 percent of total crashes.
Pedestrians crossing at non-intersection with a crosswalk accounted for 0 percent of total crashes.
Pedestrians crossing at intersection with no marked crosswalks accounted for 5 percent of total.
This corridor contains the high pedestrian risk corridors at Twain Avenue: Cambridge Street to Swenson Street and Twain Avenue: Swenson Street to Palos Verde Street.

6. Lake Mead Boulevard: Pecos Road to Las Vegas Boulevard
This crash zone is classified as 6-lane Minor arterial, 1.82 centerline miles in length with a posted speed limit of 45 mph.
The ADT is about 29,900 vehicles.
Diverse ethnic population – predominantly Hispanic population
Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is age group of age less than 18 year.
Land-uses adjacent to the corridor include several small commercial activity units, restaurants, single-family dwelling units, and high density residential-apartments.
Total 68 crashes occurred in this area during the study period 1996-2000 with 98 percent injury and 2 percent fatal.
Male pedestrians involved in 62 percent crashes.
Pedestrians less than 18 years old accounted for 41 percent of total crashes.
Pedestrians aged 50 to 64 years old accounted for 6 percent of total crashes.
Pedestrians over 64 years of age accounted for 9 percent of total crashes.
Day time crashes accounted for 65 percent of total crashes.
Wednesday (16 percent) and Thursday (16 percent) have a high percent of total crashes.
Pedestrians crossing at an intersection with the signal accounted for 21 percent of total crashes.
Pedestrians crossing at an intersection against signal accounted for 12 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 3 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 46 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 3 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 6 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 4 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 0 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total.
• This corridor contains the high pedestrian risk locations at Lake Mead Boulevard/Las Vegas Boulevard, Lake Mead Boulevard/McDaniel Street, Lake Mead Boulevard: Belmont Street to McCarran Street, Lake Mead Boulevard/Pecos Road.

7. Fremont Street: 15th Street to 6th Street
• This crash zone is classified as 4-lane minor arterial, 0.66 centerline miles in length with a posted speed limit of 30 mph.
• The ADT is about 12,400 vehicles.
• Diverse ethnic population – predominantly White population.
• Populations in this area are mainly in age group of 18 to 49 years. The second largest group in this area is the age group over 64 years of age.
• Located close to the Las Vegas downtown area.
• Total 32 crashes occurred in this area during the study period 1996-2000 with no fatality during the study period.
• Male pedestrians involved in 69 percent of crashes.
• Pedestrians less than 18 years old accounted for 3 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 25 percent of total crashes.
• Pedestrians over 64 years of age accounted for 6 percent of total crashes.
• Day time crashes accounted for 63 percent of total crashes.
• Friday (22 percent), and Saturday (25 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 41 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 9 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 16 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 16 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 6 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 3 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 0 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 3 percent of total crashes.
8. Desert Inn Road / Boulder Hwy (1200 ft)
- This crash zone is classified as 6-lane principal arterial, 0.91 centerline miles in length with a posted speed limit of 45 mph.
- The ADT is about 35,667 vehicles.
- Diverse ethnic population—predominantly White population.
- Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is the age group over 64 years of age.
- Land-uses adjacent to the corridor include commercial centers, restaurants, and residential apartments.
- Total 30 crashes occurred in this area during the study period 1996-2000 with 93 percent injury and 7 percent fatal.
- Male pedestrians involved in 70 percent of crashes.
- Pedestrians less than 18 years old accounted for 10 percent of total crashes.
- Pedestrians aged 50 to 64 years old accounted for 17 percent of total crashes.
- Pedestrians over 64 years of age accounted for 13 percent of total crashes.
- Day time crashes accounted for 57 percent of total crashes.
- Tuesday (23 percent), Friday (20 percent), and Saturday (20 percent) have a high percent of total crashes.
- Pedestrians crossing at an intersection with the signal accounted for 17 percent of total crashes.
- Pedestrians crossing at an intersection against signal accounted for 0 percent of total crashes.
- Pedestrians crossing at un-signalized intersections accounted for 7 percent of total crashes.
- Pedestrians crossing at non-intersection accounted for 47 percent of total crashes.
- Pedestrians ‘standing in a safety zone’ accounted for 10 percent of total crashes.
- Pedestrians ‘ran into roadway’ accounted for 3 percent of total crashes.
- Pedestrians ‘not in roadway’ accounted for 7 percent of total crashes.
- Pedestrians crossing at non-intersection with a crosswalk accounted for 0 percent of total crashes.
- Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total.
- This corridor contains the high pedestrian risk locations at Desert Inn Road/Boulder Hwy.

9. Charleston Boulevard: Eastern Avenue to Las Vegas Boulevard
- This crash zone is classified as 4-lane Principal arterial, 1.77 centerline miles in length with a posted speed limit of 45 mph.
- The ADT is about 30,000 vehicles.
- Diverse ethnic population – predominantly White population.
• Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is the age group over 64 years of age.
• Land-uses adjacent to the corridor include office complexes, several small commercial activity units, restaurants, and residential-apartments. It is an elder neighborhood that has seen some revitalization activity.
• Total 84 crashes occurred in this area during the study period 1996-2000 with 98 percent injury and 2 percent fatal.
• Male pedestrians involved in 73 percent of crashes.
• Pedestrians less than 18 years old accounted for 25 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 12 percent of total crashes.
• Pedestrians over 64 years of age accounted for 5 percent of total crashes.
• Day time crashes accounted for 66 percent of total crashes.
• Monday (19 percent), Wednesday (21 percent), and Friday (26 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 20 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 14 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 9 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 28 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 2 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 6 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 5 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 2 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 1 percent of total.
• This corridor contains the high pedestrian risk locations at Charleston Boulevard/ Las Vegas Boulevard, Charleston Boulevard/ Maryland Parkway, Charleston Boulevard/ Eastern Avenue.

10. Maryland Parkway: Desert Inn Road to Sahara Avenue
• This crash zone is classified as 6-lane minor arterial, 1.14 centerline miles in length with a posted speed limit of 30 mph.
• The ADT is about 41,500 vehicles.
• Diverse ethnic population-predominantly Hispanic population
• Populations in this area are mainly in age groups of 18 to 49 years. The second largest group in this area is age group of 50 to 64 years.
• Land-uses adjacent to the corridor include hospitals, office complexes, commercial centers, restaurants, and high-density residential-apartments.
• Total 42 crashes occurred in this area during the study period 1996-2000 with 98 percent injury and 2 percent fatal.
• Male pedestrians involved in 60 percent crashes.
• Pedestrians less than 18 years old accounted for 19 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 7 percent of total crashes
• Pedestrians over 64 years of age accounted for 14 percent of total crashes.
• Day time crashes accounted for 60 percent of total crashes.
• Wednesday (19 percent) and Friday (21 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 36 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 10 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 0 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 24 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 5 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 10 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 2 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total.
• This corridor contains the high pedestrian risk locations at Maryland Parkway/Sahara Avenue, and Maryland Parkway/Karen Avenue, Maryland Parkway/Desert Inn Road.

11. Bonanza Road: Eastern Avenue to Las Vegas Boulevard
• This crash zone is classified as 6-lane principal arterial, 1.15 centerline miles in length with a posted speed limit of 45 mph.
• The ADT is about 20,600 vehicles.
• Diverse ethnic population – predominately Hispanic population.
• Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is age group of age less than 18 year.
• Land-uses adjacent to the corridor include office complexes, small commercial malls, and high-density residential-apartments and single-family dwelling units. It is an elder neighborhood.
• Total 30 crashes occurred in this area during the study period 1996-2000 with 97 percent injury and 3 percent fatality.
• Male pedestrians involved in 70 percent of crashes.
• Pedestrians less than 18 years old accounted for 37 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 20 percent of total crashes.
• Pedestrians over 64 years of age accounted for 10 percent of total crashes.
• Day time crashes accounted for 73 percent of total crashes.
• Monday (17 percent), Wednesday (23 percent), and Friday (20 percent) have a high percent of total crashes 33 percent of total crashes were at a mid-block without a crosswalk.
• Pedestrians crossing at an intersection with the signal accounted for 20 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 13 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 3 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 33 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 17 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 3 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 0 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 3 percent of total.
• This corridor contains the high pedestrian risk locations at Bonanza Road/ Eastern Avenue, Bonanza Road/ Maryland Parkway, and Bonanza Road/ Las Vegas Boulevard.

12. Downtown
• The downtown crash zone is classified as 4-lane minor arterial, 3.84 centerline miles in length with a posted speed limit of 30 mph.
• The ADT is about 14,760 vehicles.
• Diverse ethnic population – predominantly White population
• Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is the age group over 64 years of age.
• Land-uses adjacent to the corridor include hotel/casinos, strip malls and other commercial activity. The area also includes the Down Town Transportation Center (DTC).
• Total 117 crashes occurred in this area during the study period 1996-2000 out of which 97 percent were injury and 3 percent fatal.
• Male pedestrians were involved in 69 percent of the crashes.
• Pedestrians less than 18 years old accounted for 14 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 18 percent of total crashes
• Pedestrians over 64 years of age accounted for 15 percent of total crashes.
• Day time crashes accounted for 76 percent of total crashes.
• Monday (17 percent), Wednesday (22 percent), and Thursday (17 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 43 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 9 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 4 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 15 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 3 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 5 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 8 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 2 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total.
• This corridor contains the high pedestrian risk locations at Main Street/ Fremont Street, Main Street/ Carson Avenue, Fourth Street/ Ogden Avenue, Fourth Street/ Fremont Street, Las Vegas Boulevard/ Fremont Street, Las Vegas Boulevard/ Carson Avenue, Las Vegas Boulevard/ Bridger Avenue.

13. Charleston Boulevard: Nellis Boulevard to Pecos Road
• This crash zone is classified as 6-lane principal arterial, 2.25 centerline miles in length with a posted speed limit of 45 mph.
• The ADT is about 49,500 vehicles.
• Diverse ethnic population – predominantly White population
• Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is the age group over 64 years of age.
• Land-uses adjacent to the corridor include commercial centers, restaurants/fast food outlets, high-density residential-apartments, and residential neighborhood.
• Total 58 crashes occurred in this area during the study period 1996-2000 with 97 percent injury and 3 percent fatal.
• Male pedestrians were involved in 57 percent of crashes.
• Pedestrians less than 18 years old accounted for 24 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 7 percent of total crashes.
• Pedestrians over 64 years of age accounted for 7 percent of total crashes.
• Day time crashes accounted for 76 percent of total crashes.
• Monday (16 percent), Tuesday (17 percent), and Wednesday (22 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 17 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 5 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 9 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 36 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 2 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 16 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 5 percent of total crashes.
• Pedestrians crossing at non-intersection with a crosswalk accounted for 2 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total.
• This corridor contains the high pedestrian risk locations at Charleston Boulevard/Lamb Boulevard, Charleston Boulevard: Lamont Street to Lucerne Street, and Charleston Boulevard/Nellis Boulevard.
14. Tropicana Avenue: Pecos Road to Spencer Street
- This crash zone is classified as 6-lane principal arterial, 1.60 centerline miles in length with a posted speed limit of 45 mph.
- The ADT is about 79,125 vehicles.
- Diverse ethnic population – predominantly Hispanic population
- Populations in this area are mainly in age groups of 18 to 49 year. The second largest group in this area is age group of 50 to 64 years.
- Land-uses adjacent to the corridor include high-density residential apartments and commercial centers. This corridor is very close to University of Nevada, Las Vegas. Therefore pedestrians include college students.
- Total 49 crashes occurred in this area during the study period 1996-2000 with 98 percent injury and 2 percent fatal.
- Male pedestrians involved in 59 percent of crashes.
- Pedestrians less than 18 years old accounted for 39 percent of total crashes.
- Pedestrians aged 50 to 64 years old accounted for 6 percent of total crashes
- Pedestrians over 64 years of age accounted for 8 percent of total crashes.
- Day time crashes accounted for 76 percent of total crashes.
- Monday (16 percent) and Wednesday (27 percent) have a high percent of total crashes 27 percent of total crashes occurred at mid-block without a crosswalk.
- Pedestrians crossing at an intersection with the signal accounted for 20 percent of total crashes.
- Pedestrians crossing at an intersection against signal accounted for 8 percent of total crashes.
- Pedestrians crossing at un-signalized intersections accounted for 0 percent of total crashes.
- Pedestrians crossing at non-intersection accounted for 27 percent of total crashes.
- Pedestrians ‘standing in a safety zone’ accounted for 2 percent of total crashes.
- Pedestrians ‘ran into roadway’ accounted for 10 percent of total crashes.
- Pedestrians ‘not in roadway’ accounted for 12 percent of total crashes.
- Pedestrians crossing at non-intersection with a crosswalk accounted for 0 percent of total crashes.
- Pedestrians crossing at intersection with no marked crosswalks accounted for 2 percent of total.
- This corridor contains the high pedestrian risk locations Tropicana Avenue/Spencer Street, Tropicana Avenue/Eastern Avenue, and Tropicana Avenue/Pecos Road.

15. Flamingo Road/Boulder Hwy (1200 ft)
- This crash zone is classified as 6-lane principal arterial, 0.91 centerline miles in length with a posted speed limit of 45 mph speed limit.
- The ADT is about 21,667 vehicles.
- Diverse ethnic population – predominantly White population
- Populations in this area are mainly in age groups 18 to 49 years. People with age greater than 64 years old are the second largest population in this area.
• Land-uses adjacent to the corridor include commercial centers with parking lot, restaurants/fast food outlets, and high-density residential-apartments.
• This corridor contains the high pedestrian risk locations Flamingo Road/Boulder Hwy and Flamingo Road/Nellis Boulevard.
• Total 24 crashes occurred in this corridor during the study period 1996-2000, with no pedestrian fatalities recorded.
• Male pedestrians were involved in 67 percent of the crashes.
• Pedestrians less than 18 years old accounted for 25 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 4 percent of total crashes
• Pedestrians over 64 years of age accounted for 17 percent of total crashes.
• Day time crashes accounted for 63 percent of total crashes.
• Wednesday (17 percent), Thursday (21 percent), and Friday (21 percent) have a high percent of total crashes
• Pedestrians crossing at an intersection with the signal accounted for 17 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 8 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 4 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 42 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 0 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 21 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 0 percent of total
• This corridor contains the high pedestrian risk location Flamingo Road/Boulder Hwy

16. Maryland Parkway: Tropicana Avenue to Flamingo Road
• This crash zone is classified as 6-lane minor arterial, 1.10 centerline miles in length with a posted speed limit of 30 mph.
• The ADT is about 37,000 vehicles.
• Diverse ethnic population – predominantly White population
• Populations in this area are mainly in age groups of 18 to 49 years old. The second largest group in this area is the age group over 64 years of age.
• Land-uses adjacent to the corridor include University, high-density residential apartments, and, commercial centers including restaurants and fast food outlets.
• It is a part of the second busiest transit route in the Las Vegas valley (articulated buses on 10 minute headways)
• Total 49 crashes occurred in this corridor during the study period 1996-2000, with no pedestrian fatalities.
• Male pedestrians were involved 57 percent of total crashes.
• Pedestrians less than 18 years old accounted for 24 percent of total crashes.
• Pedestrians aged 50 to 64 years old accounted for 12 percent of total crashes.
• Pedestrians over 64 years of age accounted for 4 percent of total crashes.
• Daytime crashes accounted for 82 percent of total crashes.
• Tuesday (18 percent), Wednesday (18 percent), Thursday (20 percent), and Friday (20 percent) have a high percent of total crashes.
• Pedestrians crossing at an intersection with the signal accounted for 22 percent of total crashes.
• Pedestrians crossing at an intersection against signal accounted for 10 percent of total crashes.
• Pedestrians crossing at un-signalized intersections accounted for 6 percent of total crashes.
• Pedestrians crossing at non-intersection accounted for 31 percent of total crashes.
• Pedestrians ‘standing in a safety zone’ accounted for 0 percent of total crashes.
• Pedestrians ‘ran into roadway’ accounted for 2 percent of total crashes.
• Pedestrians ‘not in roadway’ accounted for 16 percent of total crashes.
• Pedestrians crossing at intersection with no marked crosswalks accounted for 2 percent of total crashes.
• This corridor contains the high pedestrian risk locations at Maryland Parkway/Flamingo Road, Maryland Parkway/Harmon Avenue, Maryland Parkway/Delmar, and Maryland Parkway/Tropicana Avenue.

Forty seven high pedestrian crash sites are selected based on analysis high risk zones. Figure 41 (page 4-51) shows selected pedestrian crash sites in the selected zones. Figure 42 (page 4-52) shows pedestrian high crash sites in Downtown Las Vegas.
FIGURE 16 Fatal and Injury Pedestrian Crashes in the Las Vegas Metro Area
FIGURE 17 Pedestrian Crash Rates by Zip code in the Las Vegas Metro Area.
FIGURE 18 Selected High Risk Zones in the Study Area
FIGURE 20 Harmon Avenue: Paradise Road to Las Vegas Boulevard

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University of Nevada, Las Vegas
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Las Vegas, NV 89154-4007

Pedestrian Crashes 1996 - 2000

Las Vegas Blvd
Harmon Ave
Tropicana Wash
Paradise Rd

0.2 Miles

Zone

0.2
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Las Vegas Blvd
Harmon Ave
Tropicana Wash
Paradise Rd

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FIGURE 21 Flamingo Road: Paradise Road to Las Vegas Boulevard
FIGURE 22 Bonanza Road: D Street to H Street

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0.05 0 0.05 0.1 Miles

Pedestrian Crashes 1996 - 2000

Fatal Crashes

Injury Crashes

Zone Streets

FIGURE 22 Bonanza Road: D Street to H Street
FIGURE 26 Desert Inn Road and Boulder Highway Intersection
FIGURE 27 Charleston Boulevard: Eastern Avenue to Las Vegas Boulevard
FIGURE 28 Maryland Parkway: Desert Inn Road to Sahara Avenue
FIGURE 31 Charleston Boulevard: Nellis Road to Pecos Road
FIGURE 33 Flamingo Road and Boulder Highway Intersection

Flamingo Rd
Boulder Hwy
Nellis Blvd

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Las Vegas, NV 89154-4007

0.2 0 0.2 Miles

Zone
Streets
Pedestrian Crashes 1996 - 2000

Fatal Crashes
Injury Crashes
FIGURE 34 Maryland Parkway: Tropicana Avenue to Flamingo Road
FIGURE 36. Percent of Pedestrian Crashes by Location in Each Zone

ZONE

Percent of Pedestrian Crashes

Non-Intersection
Intersection
FIGURE 37: Percent of Pedestrian Crashes by Age Group in Each Zone.
FIGURE 38 Percent of Pedestrian Crashes for Selected Age Groups in Each Zone
FIGURE 39 Percent of Day Time and Night Time Pedestrian Crashes in Each Zone
FIGURE 40 Percent of Pedestrian Crashes by Injury Type in Each Zone
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TABLE 3 Pedestrian Crashes in Each Pedestrian High Crash Zone
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<tr>
<th>Zone #</th>
<th>Zone Description</th>
<th># of Ped Crashes by Day of the Week</th>
<th># of Ped Crashes by Light</th>
<th># of Ped Crashes by Injury Type</th>
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<td></td>
</tr>
<tr>
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<td>77 1 4 1 7 1 3 22 74 36 6</td>
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</tr>
<tr>
<td>9</td>
<td>Charleston Blvd (Eastern Ave - Las Vegas Blvd)</td>
<td>8 21 51 56 27 3 16 7 18 7 22 11</td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>Maryland Pkwy (Desert Inn Rd - Sahara Ave)</td>
<td>59 2 4 2 9 1 2 53 68 79 4</td>
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<td></td>
</tr>
<tr>
<td>11</td>
<td>Bonanza Rd (Eastern Ave - Las Vegas Blvd)</td>
<td>5 1 3 1 0 2 28 52 74 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Downtown</td>
<td>10 26 75 89 26 6 21 17 26 20 15 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Charleston Blvd (Nellis Rd - Pecos Rd)</td>
<td>7 23 26 45 13 3 9 10 13 8 7 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Tropicana Ave (Pecos Rd - Spencer St)</td>
<td>4 21 21 37 12 4 8 7 13 7 6 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Flamingo Rd / Boulder Hwy (1200 ft)</td>
<td>38 1 3 1 53 33 14 53 5 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Maryland Pkwy (Tropicana Ave - Flamingo Rd)</td>
<td>1 13 32 40 91 59 1 0 5</td>
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<td></td>
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</table>

Note for Ped Action:
1 MARYLAND PKWY (RESIDENTIAL - NOT EXPRESSWAY)
2 MARYLAND PKWY (INTERSTATE - NOT EXISTING)
3 MARYLAND PKWY (INTERSTATE - EXISTING)
4 TWAIN AVE (RESIDENTIAL - NOT EXPRESSWAY)
5 TWAIN AVE (RESIDENTIAL - EXPRESSWAY)
6 TWAIN AVE (INTERSTATE - NOT EXISTING)
7 TWAIN AVE (INTERSTATE - EXISTING)
8 TWAIN AVE (RESIDENTIAL - HIGHWAY)
9 TWAIN AVE (INTERSTATE - HIGHWAY)
10 TWAIN AVE (INTERSTATE - HIGHWAY)
11 TWAIN AVE (INTERSTATE - HIGHWAY)
12 TWAIN AVE (INTERSTATE - HIGHWAY)
13 TWAIN AVE (INTERSTATE - HIGHWAY)
14 TWAIN AVE (INTERSTATE - HIGHWAY)
15 TWAIN AVE (INTERSTATE - HIGHWAY)
16 TWAIN AVE (INTERSTATE - HIGHWAY)
TABLE 4 Percent of Pedestrian Crashes in Each Pedestrian High Crash Zone (Cont.)

<table>
<thead>
<tr>
<th>Zone #</th>
<th>Zone Description</th>
<th>% of Ped Crashes by Injury</th>
<th>% of Ped Crashes by Day of the Week</th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>Bonanza Rd (D St - H St)</td>
<td>21.05</td>
<td>78.95 100.00 78.95 10.53 15.79 47.37 36.84 0.00 31.58 68.42</td>
</tr>
<tr>
<td>5</td>
<td>Twain Ave (Cambridge St - Palos Verde St)</td>
<td>15.00</td>
<td>85.00 100.00 40.00 45.00 35.00 40.00 20.00 5.00 40.00 60.00</td>
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<tr>
<td>6</td>
<td>Lake Mead Blvd (Pecos Rd - Las Vegas Blvd)</td>
<td>35.29</td>
<td>64.71 35.29 10.29 14.71 14.71 16.18 16.18 13.24 14.71</td>
</tr>
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<td>Fremont St (15th St - 6th St)</td>
<td>21.88</td>
<td>62.50 37.50 9.38 12.50 3.13 12.50 15.63 21.88 25.00</td>
</tr>
<tr>
<td>8</td>
<td>Desert Inn Rd/ Boulder Hwy (1200 ft)</td>
<td>23.33</td>
<td>23.33 46.67 56.67 43.33 6.67 6.67 23.33 13.33 10.00 20.00</td>
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<tr>
<td>9</td>
<td>Charleston Blvd (Eastern Ave - Las Vegas Blvd)</td>
<td>9.52</td>
<td>60.71 32.14 3.57 19.05 8.33 21.43 13.10</td>
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<tr>
<td>10</td>
<td>Maryland Pkwy (Desert Inn Rd - Sahara Ave)</td>
<td>11.90</td>
<td>21.43 57.14 69.05 28.57 11.90 7.14 14.29 19.05 16.67 21.43</td>
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<tr>
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<td>Bonanza Rd (Eastern Ave - Las Vegas Blvd)</td>
<td>16.67</td>
<td>43.33 33.33 73.33 26.67 6.67 16.67 6.67 23.33 13.33 20.00</td>
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<tr>
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<td>Downtown</td>
<td>8.55</td>
<td>22.22 64.10 76.07 22.22 5.13 17.95 14.53 22.22 17.09 12.82</td>
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<tr>
<td>13</td>
<td>Charleston Blvd (Nellis Rd - Pecos Rd)</td>
<td>12.07</td>
<td>39.66 44.83 77.59 22.41 5.17 15.52 17.24 22.41 13.79 12.07</td>
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<tr>
<td>14</td>
<td>Tropicana Ave (Pecos Rd - Spencer St)</td>
<td>8.16</td>
<td>42.86 42.86 75.51 24.49 8.16 16.33 14.29 26.53 14.29 12.24</td>
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<tr>
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<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>12.50</td>
<td>33.33 54.17 62.50 37.50 12.50 12.50 4.17 16.67 20.83 20.83</td>
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<tr>
<td>16</td>
<td>Maryland Pkwy (Tropicana Ave - Flamingo Rd)</td>
<td>2.04</td>
<td>26.53 65.31 81.63 18.37 2.04 10.20 18.37 18.37 20.41 20.41</td>
</tr>
<tr>
<td>Zone</td>
<td>Maryland Pkwy (Flamingo Wash - Sierra Vista Dr)</td>
<td>Maryland Pkwy (Desert Inn Rd - Sahara Ave)</td>
<td>Bonanza Rd (Eastern Ave - Las Vegas Blvd)</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>20.41 10.20 10.20 30.61 0.00 10.20 6.12 4.08 0.00</td>
<td>35.71 9.52 0.00 23.81 0.00 4.76 9.52 2.38 0.00</td>
<td>20.00 13.33 3.33 33.33 0.00 16.67 3.33 0.00 3.33</td>
</tr>
<tr>
<td>Zone #</td>
<td>Total Population</td>
<td>Population by Age Group</td>
<td>Population by Gender</td>
</tr>
<tr>
<td>-------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>---------------------</td>
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<tr>
<td>1</td>
<td>11,872</td>
<td>5,500</td>
<td>2,050</td>
</tr>
<tr>
<td>2</td>
<td>7,777</td>
<td>1,527</td>
<td>526</td>
</tr>
<tr>
<td>3</td>
<td>7,777</td>
<td>1,305</td>
<td>1,198</td>
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<td>4</td>
<td>1,401</td>
<td>357</td>
<td>337</td>
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<tr>
<td>5</td>
<td>14,268</td>
<td>2,632</td>
<td>894</td>
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<td>6</td>
<td>25,271</td>
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<td>524</td>
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<tr>
<td>7</td>
<td>1,872</td>
<td>334</td>
<td>97</td>
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<td>4,326</td>
<td>884</td>
<td>259</td>
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<td>2,616</td>
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<td>143</td>
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<td>9,652</td>
<td>1,775</td>
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<td>12,208</td>
<td>2,162</td>
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**TABLE 5** Population Characteristics of Each Pedestrian High Crash Zone
<table>
<thead>
<tr>
<th>Zone #</th>
<th>Zone Center-Lane</th>
<th>MTRS</th>
<th># of Lanes</th>
<th>ADT</th>
<th>Speed (mph)</th>
<th># of Lanes</th>
<th>Center-Lane MILES</th>
<th>Functional Class</th>
<th>ADT (vehicles/day)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Maryland Pkwy (Flamingo Ave - Flamingo Rd)</td>
<td>37'000</td>
<td>30</td>
<td>1.10</td>
<td>90</td>
<td>6</td>
<td>30,000</td>
<td>Minor Arterial</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>Flamingo Rd (North End - Flamingo Rd)</td>
<td>31'667</td>
<td>45</td>
<td>6</td>
<td>90</td>
<td>6</td>
<td>42,000</td>
<td>Minor Arterial</td>
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<tr>
<td>3</td>
<td>Flamingo Rd (S. 79th St - Sierra Vista Dr)</td>
<td>79'135</td>
<td>45</td>
<td>9</td>
<td>0.90</td>
<td>6</td>
<td>25,000</td>
<td>Minor Arterial</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>Flamingo Rd (Paradise Rd - Pecos Rd)</td>
<td>49'500</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>4</td>
<td>35,000</td>
<td>Minor Arterial</td>
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<tr>
<td>5</td>
<td>Flamingo Rd (Paradise Rd - Pecos Rd)</td>
<td>76'000</td>
<td>30</td>
<td>1.4</td>
<td>76</td>
<td>14</td>
<td>62,000</td>
<td>Principal Arterial</td>
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<td>6</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
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<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>21,667</td>
<td>Principal Arterial</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'667</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>6</td>
</tr>
<tr>
<td>12</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
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</tr>
<tr>
<td>16</td>
<td>Flamingo Rd/ Boulder Hwy (1200 ft)</td>
<td>35'000</td>
<td>45</td>
<td>6</td>
<td>0.91</td>
<td>6</td>
<td>35,667</td>
<td>Principal Arterial</td>
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TABLE 6 Traffic and Road Conditions of Each Pedestrian High Crash Zone
<table>
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<tr>
<th>Zone #</th>
<th>Zone</th>
<th>Crash Index 1</th>
<th>Crash Index 2</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Maryland Pkwy (Flamingo Wash - Sierra Vista Dr)</td>
<td>8.96</td>
<td>31.37</td>
</tr>
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<td>2</td>
<td>Harmon (Paradise Rd - Las Vegas Blvd)</td>
<td>8.13</td>
<td>28.46</td>
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<td>Flamingo Rd (Paradise Rd - Las Vegas Blvd)</td>
<td>7.62</td>
<td>26.68</td>
</tr>
<tr>
<td>4</td>
<td>Bonanza Rd (D St - H St)</td>
<td>6.84</td>
<td>26.60</td>
</tr>
<tr>
<td>5</td>
<td>Twain Ave (Cambridge St - La Porte Ave)</td>
<td>5.14</td>
<td>15.43</td>
</tr>
<tr>
<td>6</td>
<td>Desert Inn Rd/Las Vegas Blvd (1200 ft)</td>
<td>4.36</td>
<td>11.23</td>
</tr>
<tr>
<td>7</td>
<td>Charleston Blvd (Nellis Rd - Pecos Rd)</td>
<td>3.26</td>
<td>9.12</td>
</tr>
<tr>
<td>8</td>
<td>Maryland Pkwy (Desert Inn Rd - Sahara Ave)</td>
<td>1.94</td>
<td>6.46</td>
</tr>
<tr>
<td>9</td>
<td>Bonanza Rd (Eastern Ave - Las Vegas Blvd)</td>
<td>1.94</td>
<td>4.54</td>
</tr>
<tr>
<td>10</td>
<td>Downtown</td>
<td>1.36</td>
<td>3.97</td>
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<td>Bonanza Rd (Desert Inn Rd - Sunrise Ave)</td>
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<td>Tropicana Ave (Pecos Rd - Spencer Rd)</td>
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TABLE 7 Pedestrian Crash Rates by Zone
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<th>Zone</th>
<th>Zone #</th>
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<tbody>
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<td>1</td>
<td>Maryland Pkwy (Flamingo Ave - Flamingo Rd)</td>
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</tr>
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<td>2</td>
<td>Harmon (Paradise Rd - Las Vegas Blvd)</td>
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</tr>
<tr>
<td>3</td>
<td>Maryland Pkwy (Paradise Rd - Sierra Vista Dr)</td>
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</tr>
<tr>
<td>4</td>
<td>Charleston Blvd (Nellis Rd - Paradise Rd)</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>Flamingo Rd (Paradise Rd - Sierra Vista Dr)</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Downton</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>Flamingo Rd (Las Vegas Blvd - Flamingo Rd)</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Desert Inn Rd (Desert Inn Rd - Sahara Ave)</td>
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<td>Desert Inn Rd (1200 ft)</td>
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<td>Desert Inn Rd (1200 ft)</td>
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</tr>
<tr>
<td>16</td>
<td>Desert Inn Rd (1200 ft)</td>
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</tr>
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**TABLE 8** Ranking of Pedestrian High Crash Zones
FIGURE 4.2 High Pedestrian Risk Locations in Downtown, Las Vegas

High Pedestrian Risk Locations
Major Streets

0.1 0 0.1 0.2 0.3 Miles

Transportation Research Center
Howard R. Hughes College of Engineering
University of Nevada, Las Vegas
4505 Maryland Parkway, P.O. Box 454007
Las Vegas, NV 89154-4007

Streets

Bonanza Rd
Charleston Blvd
Las Vegas Blvd
Main St
Bridger Ave
Carson Ave
Ogden Ave

N E W

FIGURE 4.2 High Pedestrian Risk Locations in Downtown, Las Vegas