

Crashes on Kirby Drive

The following is information about safety on Kirby Drive. There are several caveats to the data and analysis, which you should be aware of:

1. The data H-GAC has analyzed is distributed by the Accident Records Bureau of the Department of Public Safety. This is the state agency vested with documenting crashes for the State. Currently, their reporting requirements are that all fatal crashes, all injury crashes, and all property damage only (PDO) crashes in which one or more vehicles were towed be reported. Thus, they do not include the typical 'fender bender' in which no one is injured and all vehicles are driven away from the crash scene. In other words, the data we have represent the more serious crashes.
2. We've geocoded the crashes. However, because the data are kept in a very old information system by DPS in which road names are represented either by five-digit codes, the first five letters of the road name, or control-section numbers (for rural state roads), there is inevitably some geocoding error. We were able to geocode about 82% of all crashes in the DPS data set with about 90% accuracy on average.
3. To date, we have only geocoded crashes for 1999. Thus, any conclusions about location are only tentative.
4. Spatial accuracy is within 50-100 yards. One would need actual crash diagrams to have more accuracy.
5. Please cite the Accident Records Bureau of the Texas Department of Public Safety as the source for the crash data and cite the Houston-Galveston Area Council as the source for the crash analysis.

Given these caveats, the results of the analysis are as follows:

1. In 1999, there were 306 crashes that occurred on Kirby Drive from its intersection with Allen Parkway in the north to its intersection with Holmes Road (below IH 610 South). Of these 306 crashes, 104 occurred north of the US 59 West (Southwest) freeway, 151 occurred between US 59 West and IH 610 South, and 51 occurred south of IH 610 South.
2. Of the 306 crashes in 1999, there were 2 fatal, 6 incapacitating injury (Type A), 37 non-incapacitating injury (Type B) and 150 possible injury crashes (Type C). There were also 111 serious PDO crashes. As mentioned above, this is only a sub-set of all PDO crashes.
3. Figure 1 below shows a map of the distribution of crashes. Each crash location is represented by a red dot. At any one location, there may be

more than one crash. However, since the program plots the crashes on top of each other, multiple crashes cannot be identified from this map.

4. Of the 306 crashes, 272 were with other motor vehicles, 1 was with a pedestrian, 2 were with bicyclists, and 26 were with fixed objects.
5. The *CrimeStat* program was used to identify the most frequent crash locations.¹ Figure 2 below shows a map of the five locations that had ten or more crashes in 1999. These were at:
 - A. The access ramp to IH 610 South (26 crashes),
 - B. The access ramp to US 59 West (19 crashes),
 - C. The intersection with Bissonet (11 crashes),
 - D. On the block between Milford and North (10 crashes), and
 - E. The intersection with Holcombe/Bellaire (10 crashes).
6. Crash hot spots are small areas where there are a concentration of crashes. They are a better indicator of hazard than a single location since the number of crashes at a particular location depends on spatial accuracy and precision. Using the *CrimeStat* program, nine hot spots were identified. The most serious were:
 - A. The approach to IH 610 South (39 crashes),
 - B. The approach to US 59 West (26 crashes),
 - C. A stretch between Sunset and Robinhood (20 crashes),
 - D. A stretch south of US 59 West to Bartlett (18 crashes), and
 - E. A stretch between South and Roxton (18 crashes).
7. Based on the estimate of VMT from our modeling group, *crash risk* was calculated. This is the number of crashes per 100 million vehicle miles traveled (VMT). In 1999, crash risk on Kirby was 415.4 crashes per 100 million VMT. This is much higher than the regional average of 199 crashes per 100 million VMT. Compared to the region as a whole, crash risk is very high. Further, our region is the worst in the State of Texas and is one of the worst in the country. Consequently, the crash risk on Kirby has to be considered very severe by national standards. Aside from the approaches to the two freeways (US 59 West and IH 610 south), crash risk was very high between Inwood Drive and Main Street where it averaged 489.3 crashes per 100 million VMT.

Figure 1:

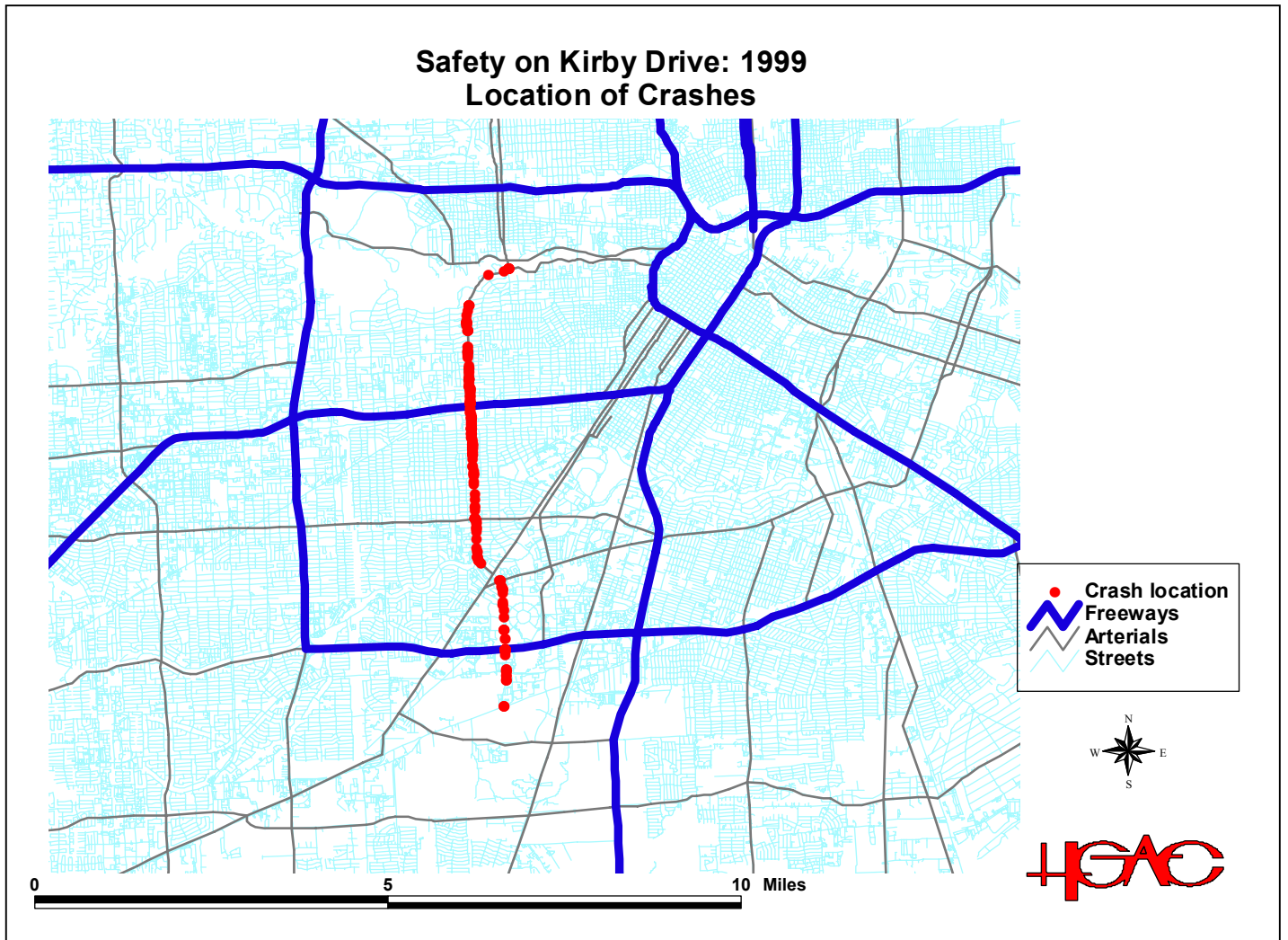
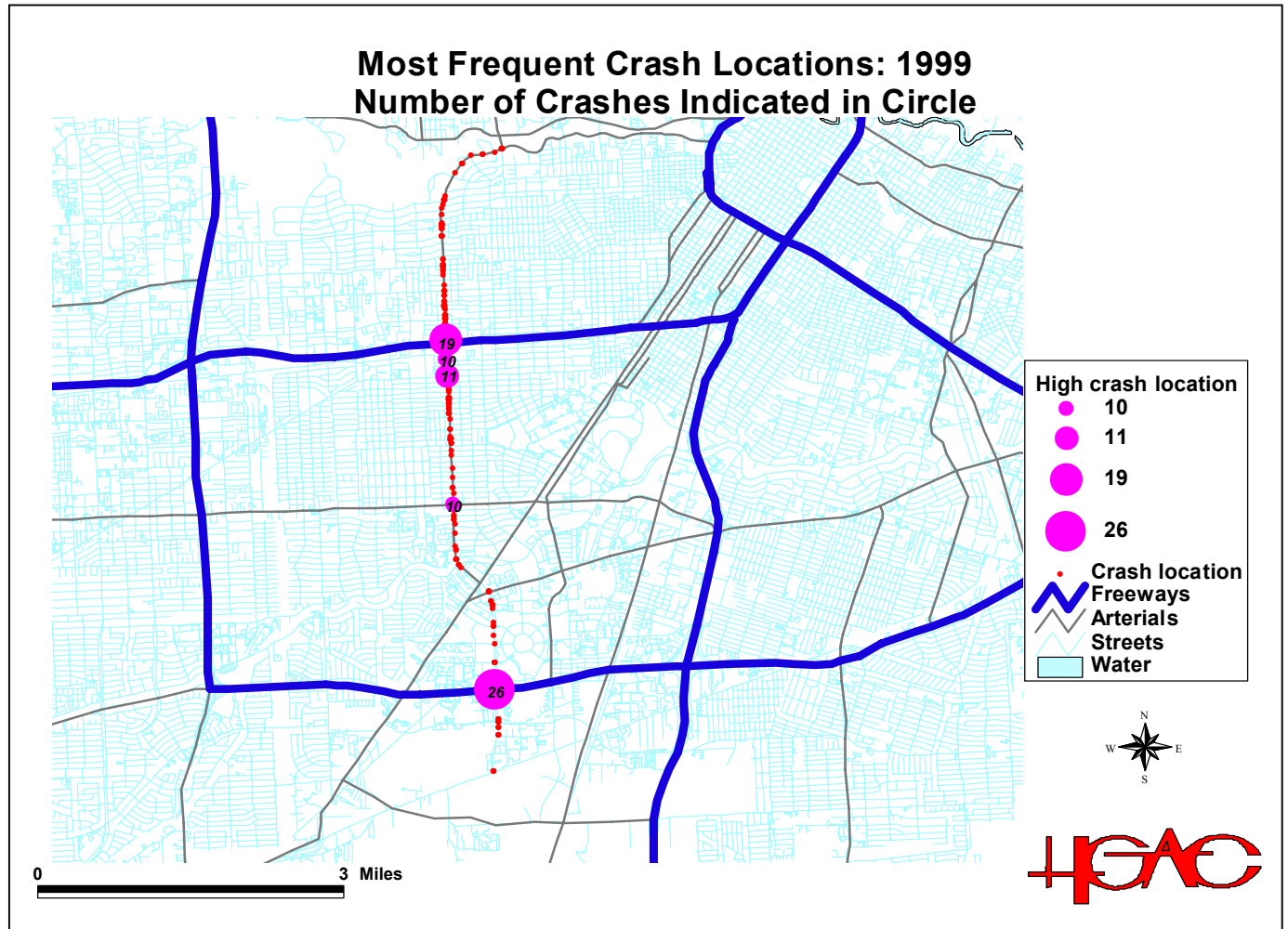


Figure 2:



ⁱ See Ned Levine, "CrimeStat: A Spatial Statistics Program for the Analysis of Metropolitan Crime Distributions (version 2.0)". National Institute of Justice: Washington, DC. 2002.
<http://www.icpsr.umich.edu/nacjd/crimestat.html>