CAMBRIDGE SYSTEMATICS

Bicycle Safety Program Plan

prepared for

Miami-Dade Metropolitan Planning Organization

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Executive Summary

The Miami-Dade Metropolitan Planning Organization (MPO) developed a Geographic Information Systems (GIS) database of reported traffic crashes involving bicycles for the years 1996 to 2002. The database contains over 4,500 crash records obtained from the Florida Department of Highway Safety and Motor Vehicles, Florida Highway Patrol and County and municipal police departments, and includes spatial information on the location of each crash, as well as other crash characteristics of the bicyclist, driver, and roadway.

The objective of this study was to use software developed for the Federal Highway Administration (FHWA) to identify common crash types occurring at locations throughout the County, and develop countermeasures to address the physical conditions and bicyclist or driver behaviors at these locations to enhance safety for cyclists throughout Miami Dade County in the future. This software – called the Pedestrian and Bicycle Crash Analysis Tool (PBCAT) – was used to allocate one of 73 districts and defined "crash types" to the crash reports for further analysis using GIS software.

A study advisory committee was identified at the outset of this project to help guide the analysis, provide input based on local experience, and carefully review the findings of the study. The committee was comprised of representatives of 10 local agencies that work within the bicycle safety arena – including the County, police departments, hospitals and transportation agencies and the local bicycle advocacy group – and met three times during the nine-month study to review progress and provide comments and suggestions.

A number of approaches was taken to evaluate the seven years of crash data. Geographic analysis was used to identify areas where high densities of crashes were occurring. The crash types were consolidated into nine subgroups and used with GIS to identify locations where common crash types occurred. And finally, a focused geographic cluster analysis was used to identify hotspot locations that experienced a high incidence of bicycle crashes.

The study team visited a total of 22 crash hotspots throughout the County to carefully review site conditions with reference to the individual crash reports, and developed engineering and programmatic countermeasures for implementation to enhance bicycle safety in Miami-Dade County. Bicycle activity was noted at each of the locations visited – during the relatively short period the study team was at each site – clearly indicating the extent to which this mode of transportation is a critical element of mobility for so many county residents.

The study found that physical treatments were applicable in approximately 50 percent of the high crash locations identified, and that education and enforcement programs – aimed at both cyclists and drivers – would be needed in combination with engineering treatments at those locations, as well as at the

remaining locations identified in the hotspot analysis, to address the safety issues. A series of engineering treatments and countermeasures is presented in this report for specific sites identified through the analysis. Educational and enforcement programs are also outlined as relevant to specific community areas.

Behaviors that contributed to the bicycle crashes commonly included:

- Failure to adhere to signals and traffic control signs (both cyclists and drivers),
- Riding against traffic,
- Riding on sidewalks,
- Riding at night without lights, and
- Failure to yield to bicyclists (and pedestrians).

Implementation of the physical, educational, and enforcement countermeasures should be the shared responsibility of County and local governments, schools, and local community organizations representing the people that are so affected by bicycle crashes. Addressing the dangerous behaviors of cyclists will go a long way to enhance safety for this mode of transportation in Miami-Dade County.

Figure 2-11 Bicycle Crash Locations

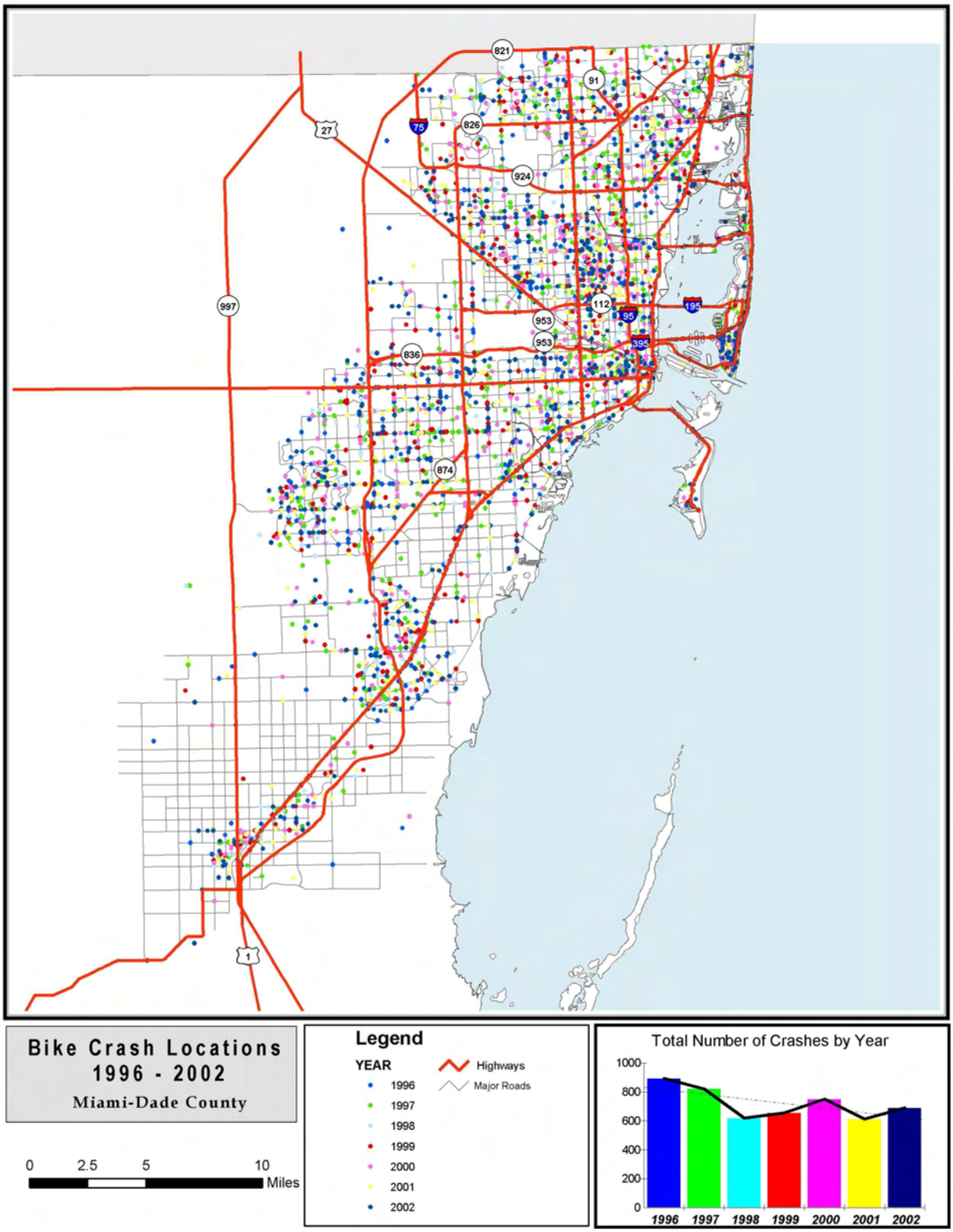
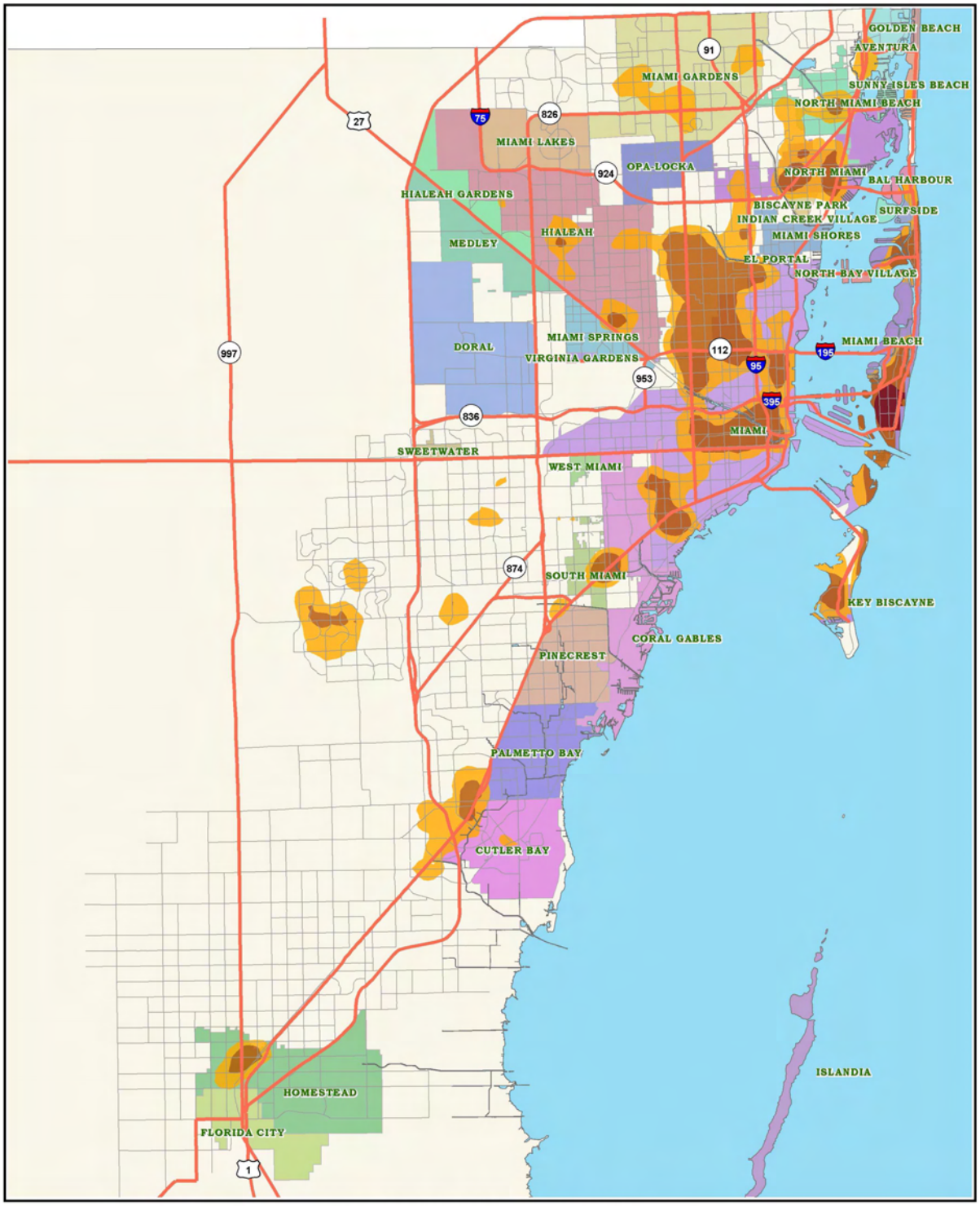


Figure 2-13 Crash Density Map



MIAMI-DADE COUNTY

Crash Densities 1996-2002