23. HURRICANE PREPAREDNESS

A. 1. Identify any residential development proposed within the hurricane vulnerability zone delineated in the applicable regional hurricane evacuation study, regional public hurricane shelter study or adopted county peacetime emergency plan. If so, delineate the proposed development's location on the appropriate county and/or regional hurricane evacuation map and respond to questions B.(1) and B.(2) below. Proposed mobile home and park trailer developments should answer question B.(1), regardless of location, or answer questions B.(1) and B.(2) below, if proposed within the hurricane vulnerability zone or the high hazard hurricane evacuation area.

Pursuant to the Agreement to Delete for the Parkland DRI as signed by the South Florida Regional Planning Council Director on March 29, 2006, a response to this question is not required.

A. 2. Identify any hotel/motel or recreational vehicle/travel trailer development proposed within the high hazard hurricane evacuation area delineated in the applicable regional hurricane evacuation study, regional public hurricane shelter study, or adopted county peacetime emergency plan. If present, delineate the proposed development's location on the appropriate county or regional hurricane evacuation map and answer questions B.(1) and B.(2) below.

Pursuant to the Agreement to Delete for the Parkland DRI as signed by the South Florida Regional Planning Council Director on March 29, 2006, a response to this question is not required.

A. 3. Identify whether the proposed development is located in a designated special hurricane preparedness district.

Pursuant to the Agreement to Delete for the Parkland DRI as signed by the South Florida Regional Planning Council Director on March 29, 2006, a response to this question is not required.

B. 1. For each phase of the development, determine the development's public hurricane shelter space requirements based on the behavioral assumptions identified in the applicable regional study or county plan. Identify the existing public hurricane shelter space capacity during the one hundred year or category three hurricane event within the county where the development is being proposed and indicate whether the county has a deficit or surplus of public hurricane shelter space during the one hundred year or category three hurricane event.

Pursuant to the Agreement to Delete for the Parkland DRI as signed by the South Florida Regional Planning Council Director on March 29, 2006, a response to Questions A.1, A.2 and A.3 were not required by this DRI since the project site is not located within any of the Hurricane Evacuation Storm Surge Evacuation Zones as designated by the Miami-Dade County Office of Emergency Management (see **Map 23-1**). Notwithstanding this fact, and even though the project site is not within an evacuation

zone, the South Florida Regional Planning Council requested that a response be provided for Question B.1 to determine the project's impact (if any) on public hurricane shelter space capacity.

To respond to this question, participation rates and destination percentages (including the percent of evacuees using local public shelter space), has been obtained from the *Miami-Dade Transportation Analysis Hurricane Evacuation Study Update 2003* (prepared by PBS&J for the US Army Corps of Engineers, Jacksonville District, in cooperation with the Miami-Dade County Office of Emergency Management). Data on behavioral assumptions, specifically related to the number of persons and vehicles per occupied dwelling unit, were obtained from the Year 2000 census data for the metropolitan area.

Given the fact that the project site is not located within a designated storm surge hurricane evacuation zone and therefore no evacuations would be mandatory, the proposed development (at buildout) was estimated to add 1,041 public shelter evacuees in the event that 50% of the project chose to evacuate, and 1,458 public shelter evacuees in the event that 70% of the project chose to evacuate. **Tables 23.1A and 23.1B** summarize the assumptions and calculated statistics for the number of project generated evacuating vehicles and project generated public shelter demand assuming that 50% (**Table 23.1A**) or 70% (**Table 23.1B**) of the units chose to evacuate. Given the character of the proposed development and its location completely outside any of the evacuation storm surge zones, it is unlikely that evacuation rates would reach even the levels studied herein. Homebuilding design in this project will be required to meet all applicable Florida Building Code Standards, and will be required to provide hurricane shutters or code compliance window protection for all residential and non residential buildings on site.

In July of 2005, the Miami-Dade County Office of Emergency Management indicated that hurricane evacuation center capacity for Miami-Dade County consists of 60,000 public shelter spaces with a hurricane storm demand estimated at 60,000 public shelter spaces.

The development program for the Parkland DRI includes a High School which will be designed to serve a dual purpose as Hurricane Evacuation Shelter. The facility is anticipated to increase the Miami-Dade County Shelter Capacity by 1,500 persons, thus the project will provide adequate shelter capacity for its residents in the unlikely event that 70% of Parkland chooses to evacuate.

Given the County's current shelter capacity and the additional shelter space that the Applicant will provide on site, it is anticipated that the proposed development will have little adverse impact on the availability of hurricane shelter space in Miami Dade County, and will in fact increase the availability of hurricane evacuation center capacity for Miami-Dade residents.

B. 2. For each phase of the development, determine the number of evacuating vehicles the development would generate during a hurricane evacuation event based on the transportation and behavioral assumptions identified in the applicable regional study or county plan. Identify the nearest designated hurricane evacuation route and determine what percentage of level of service E hourly directional and maximum service volume the project will utilize.

Pursuant to Figure 7 from the Transportation Element of the adopted Miami-Dade County CDMP (see **Map 23-2**), designated evacuation routes in the vicinity of the proposed DRI consist of Florida's Turnpike (HEFT), SR 874, SR 826, SR 836 and US-1. An alternative Figure 7 inclusive of Krome Avenue as a designated hurricane evacuation route was adopted by Miami-Dade County on October 10, 2002 pursuant to Ordinance No. 02-198, however this action remains the subject of pending litigation and therefore the October 2002 inclusion of Krome Avenue as a designated hurricane evacuation route is not yet applicable (see **Map 23-3**).

Given the location of the DRI outside any of the designated storm surge hurricane evacuation zones, the project's participation in hurricane evacuation was evaluated assuming 50% of the residential units evacuated, and 70% of the residential units evacuated. Projected traffic assignments to the designated hurricane evacuation routes are provided on the attached **Map 23-4**. The percentage of project traffic assumed to use these designated (and pending) evacuation routes (for evacuation) at project buildout is provided in **Tables 23.1A and 23.1B** under the 50% and 70% evacuation scenarios. Also provided are the calculations of evacuation project traffic as a percent of the level of service E hourly directional maximum service volume.

Using the updated hurricane study and the socioeconomic and behavioral assumptions referenced above, the proposed development at build out (with a 50% Evacuation Participation Rate) will add a total of 3,644 evacuating vehicles in a category 3 storm to the adjacent evacuation roadway segments. The proposed development at build out (with a 70% Evacuation Participation Rate) will add a total of 5,102 evacuating vehicles in a category 3 storm to the adjacent evacuation roadway segments.

To calculate the development's maximum ***hourly*** contribution to the evacuation network, the highest hourly percentage (30%) of evacuees loading the road network was obtained from the medium behavioral response curve shown in Figure 2-5 on page 2-10 of the updated hurricane study referenced above. Using the highest hourly percentage of 30% and the assumptions set forth in **Tables 23.1A and 23.1B**, the proposed development's maximum hourly contribution of evacuation traffic for each roadway segment is provided at buildout in **Tables 23.1A and 23.1B**.

Those roadways designated as official evacuation routes (pursuant to Figure 7 of the Transportation Element in the adopted CDMP) were then also analyzed to determine if the proposed development would utilize 25 percent or more of the evacuation route's LOS E hourly directional maximum service volume and would thus have a material adverse effect (state's DRI definition) on the local area's evacuation network. **Tables 23.1A and 23.1B** provide the calculations to show the maximum hourly evacuation vehicles as a % of the LOS E hourly directional service volume.

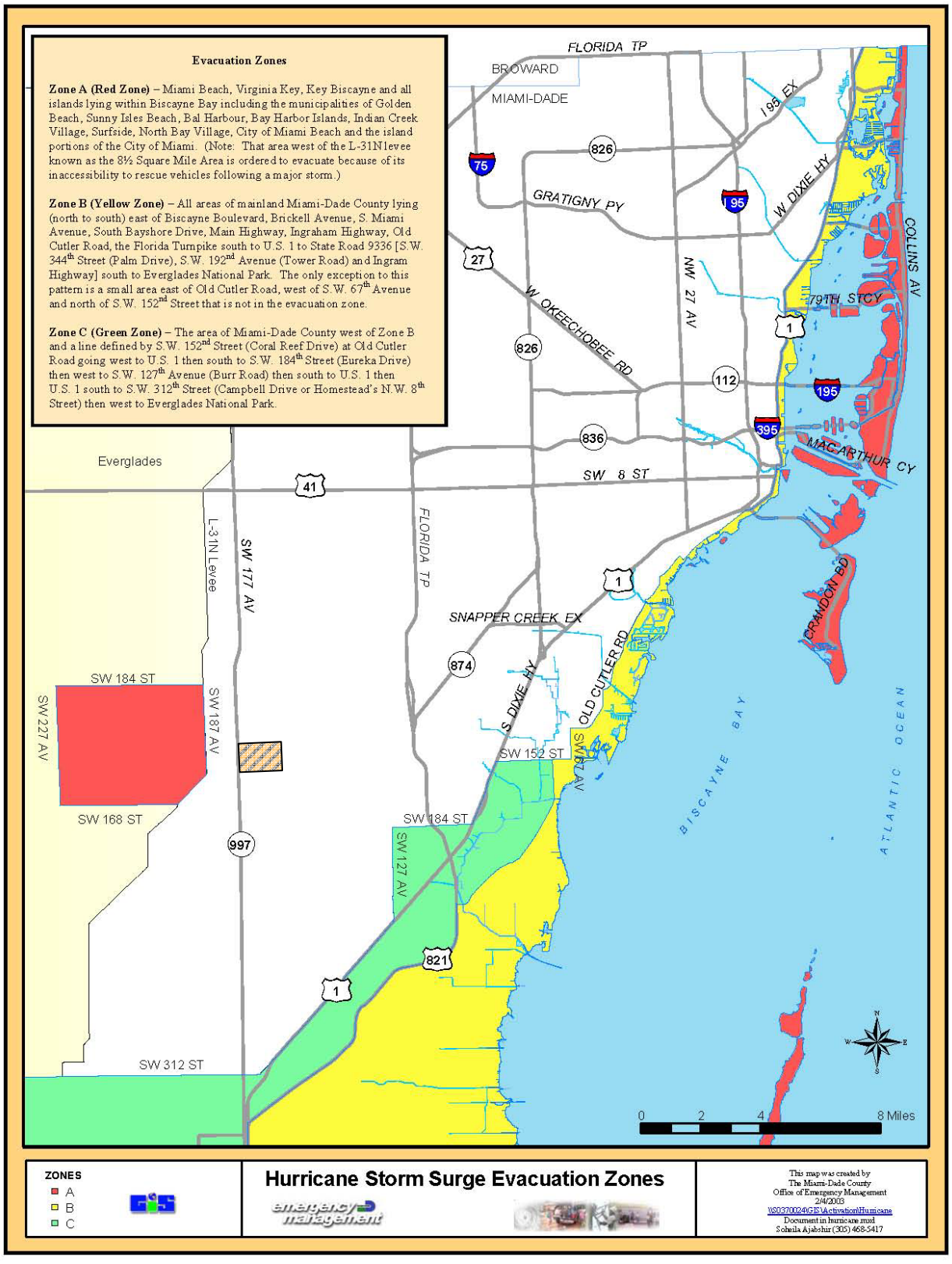
Evacuation vehicles assigned to Florida's Turnpike represent 10.5% of the LOS E maximum service volume when 50% of the project vehicles evacuate, and 14.7% of the LOS E maximum service volume when 70% of the project vehicles evacuate. For all other designated hurricane evacuation routes, evacuation vehicles also stay below the 25% threshold of LOS E (see **Map 23-5**).

The evacuation traffic assignments from the DRI are not anticipated to impact clearance times for Miami Dade County road segments in the north and northeast part of the county. These segments will control the overall evacuation clearance times on which the county bases its evacuation decision making. The proposed DRI will have little to no impact on the bottlenecks in the other parts of the county.

C. Identify and describe any action(s) or provisions that will be undertaken to mitigate impacts on hurricane preparedness.

Pursuant to the Agreement to Delete for the Parkland DRI as signed by the South Florida Regional Planning Council Director on March 29, 2006, a response to this question is not required.

Notwithstanding that requirement, the development program for the Parkland DRI includes a High School which will be designed to serve a dual purpose as Hurricane Evacuation Shelter (see **Map 23-6**). The facility is anticipated to increase the Miami-Dade County Shelter Capacity by 1,500 persons, which will be more than adequate to accommodate the projected 1,458 public shelter evacuees in the unlikely event that 70% of the Parkland population chooses to evacuate.



Legend

Site Location

Zone A
Zone B
Zone C

Map 23-1
Hurricane Evacuation Zones
Parkland
August 2006

Source: Cathy Sweetapple & Associates

TABLE 23.1A
PARKLAND
HURRICANE EVACUATION TRAFFIC ANALYSIS

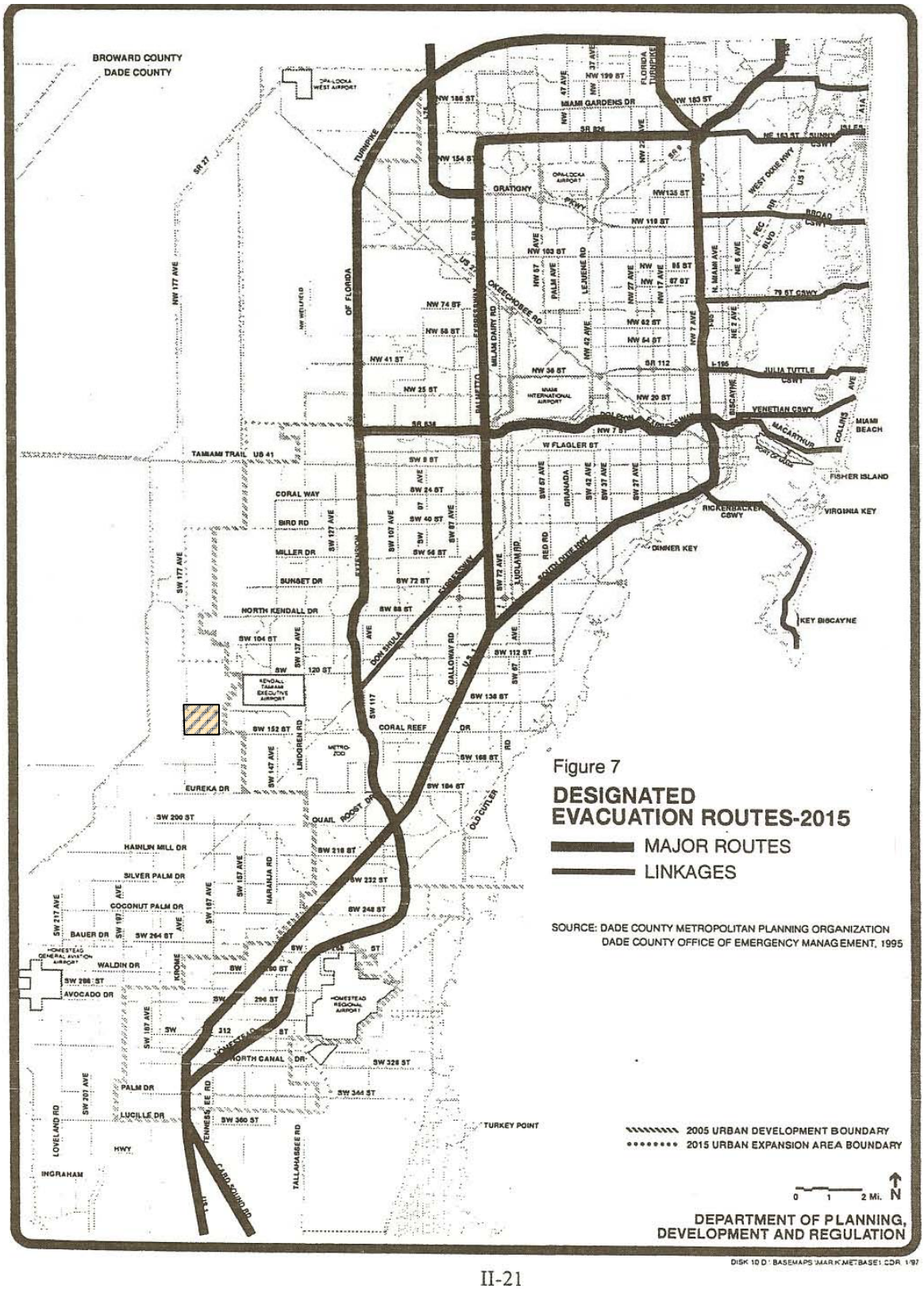
Evacuation Vehicles Generated by Project						
Dwelling Units	6941	residential du's				
	0	hotel rooms				
Evacuation Participation Rate/ Category 3 Hurricane	**50%**	of units				
Vehicles per Unit	1.75	vehicles per permanent unit				
	1.05	vehicles per occupied seasonal unit				
Evacuation Vehicle Usage Rate	60%	of permanent unit vehicles				
	100%	of seasonal unit vehicles				
Seasonal Unit Occupancy Levels	35%	low seasonal occupancy				
	95%	high seasonal occupancy				
Additional Evacuation Vehicles Generated by Project	**Category 3**					
	3644 evac vehicles					
Public Shelter Demand Generated by Project						
People per Unit	3.00	people per permanent unit				
	3.00	people per occupied seasonal unit				
Percent of Evacuees to Local Public Shelter	10%	of permanent resident evacuees (remainder to local homes of friends/relatives or out of county)				
	2%	of seasonal resident evacuees (remainder to out of county destinations)				
Additional Public Shelter Demand Generated by Project	**Category 3**					
	1041 people					

Evacuation Vehicles as Percent of LOS E Directional Service Volume						
	Category 3					
	Designated Evacuation Routes					
	HEFT Florida's Turnpike	SR 874	SR 826	SR 836	US-1	Krome Avenue Not Yet Applicable Pursuant to Litigation
Percent of Evacuation Traffic Using Adjacent Evacuation Road Network	**80%**	**10%**	**10%**	**10%**	**5%**	**15%**
Evacuation Vehicles by Route	2915 vehicles	364 vehicles	364 vehicles	364 vehicles	182 vehicles	547 vehicles
Hghest Hourly Contribution of Evacuation Traffic as a % of Total Evacuation Traffic Based on Medium Behavioral Response Curve	30%	30%	30%	30%	30%	30%
Highest Hourly Contribution of Evacuation Traffic by Route from Project	875 vehicles	109 vehicles	109 vehicles	109 vehicles	55 vehicles	164 vehicles
Maximum Directional LOS E Service Volume by Route	8320 veh per hour	6150 veh per hour	8380 veh per hour	8380 veh per hour	2790 veh per hour	1860 veh per hour
Maximum Hourly Evacuation Vehicles as a % of LOS E Hourly Directional Service Volume	**10.5%**	**1.8%**	**1.3%**	**1.3%**	**2.0%**	**8.8%**

TABLE 23.1B
PARKLAND
HURRICANE EVACUATION TRAFFIC ANALYSIS

Evacuation Vehicles Generated by Project						
Dwelling Units	6941	residential du's				
	0	hotel rooms				
Evacuation Participation Rate/ Category 3 Hurricane	**70%**	of units				
Vehicles per Unit	1.75	vehicles per permanent unit				
	1.05	vehicles per occupied seasonal unit				
Evacuation Vehicle Usage Rate	60%	of permanent unit vehicles				
	100%	of seasonal unit vehicles				
Seasonal Unit Occupancy Levels	35%	low seasonal occupancy				
	95%	high seasonal occupancy				
Additional Evacuation Vehicles Generated by Project	**Category 3**					
	5102 evac vehicles					
Public Shelter Demand Generated by Project						
People per Unit	3.00	people per permanent unit				
	3.00	people per occupied seasonal unit				
Percent of Evacuees to Local Public Shelter	10%	of permanent resident evacuees (remainder to local homes of friends/relatives or out of county)				
	2%	of seasonal resident evacuees (remainder to out of county destinations)				
Additional Public Shelter Demand Generated by Project	**Category 3**					
	1458 people					

Evacuation Vehicles as Percent of LOS E Directional Service Volume						
	Category 3					
	Designated Evacuation Routes					
	HEFT Florida's Turnpike	SR 874	SR 826	SR 836	US-1	Krome Avenue Not Yet Applicable Pursuant to Litigation
Percent of Evacuation Traffic Using Adjacent Evacuation Road Network	**80%**	**10%**	**10%**	**10%**	**5%**	**15%**
Evacuation Vehicles by Route	4081 vehicles	510 vehicles	510 vehicles	510 vehicles	255 vehicles	765 vehicles
Hghest Hourly Contribution of Evacuation Traffic as a % of Total Evacuation Traffic Based on Medium Behavioral Response Curve	30%	30%	30%	30%	30%	30%
Highest Hourly Contribution of Evacuation Traffic by Route from Project	1224 vehicles	153 vehicles	153 vehicles	153 vehicles	77 vehicles	230 vehicles
Maximum Directional LOS E Service Volume by Route	8320 veh per hour	6150 veh per hour	8380 veh per hour	8380 veh per hour	2790 veh per hour	1860 veh per hour
Maximum Hourly Evacuation Vehicles as a % of LOS E Hourly Directional Service Volume	**14.7%**	**2.5%**	**1.8%**	**1.8%**	**2.7%**	**12.3%**

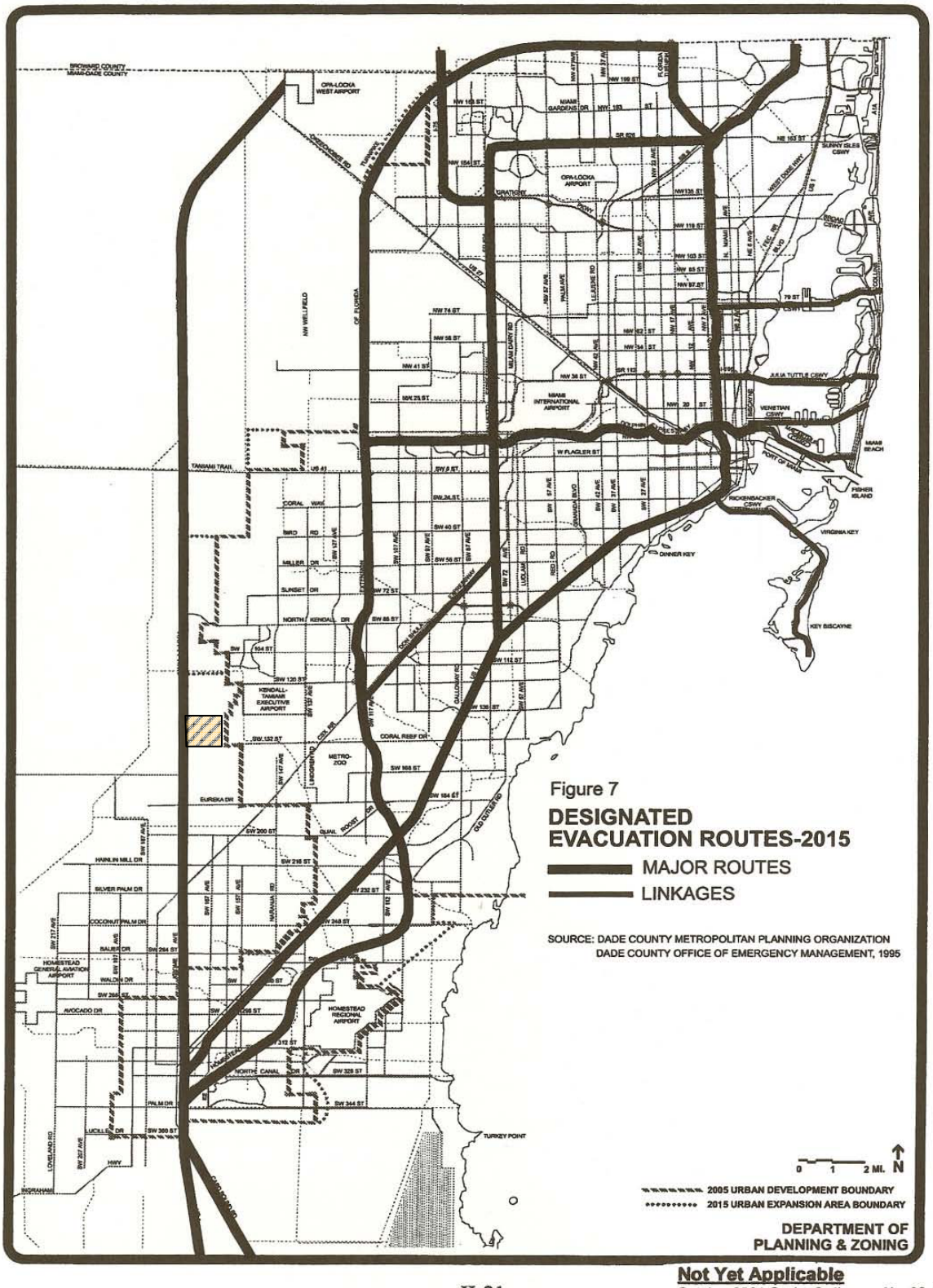


Legend

Site Location

Map 23-2
Figure 7 from the Transportation Element of the Adopted Miami-Dade County CDMP
Parkland
August 2006

Source: Cathy Sweetapple & Associates



II-21

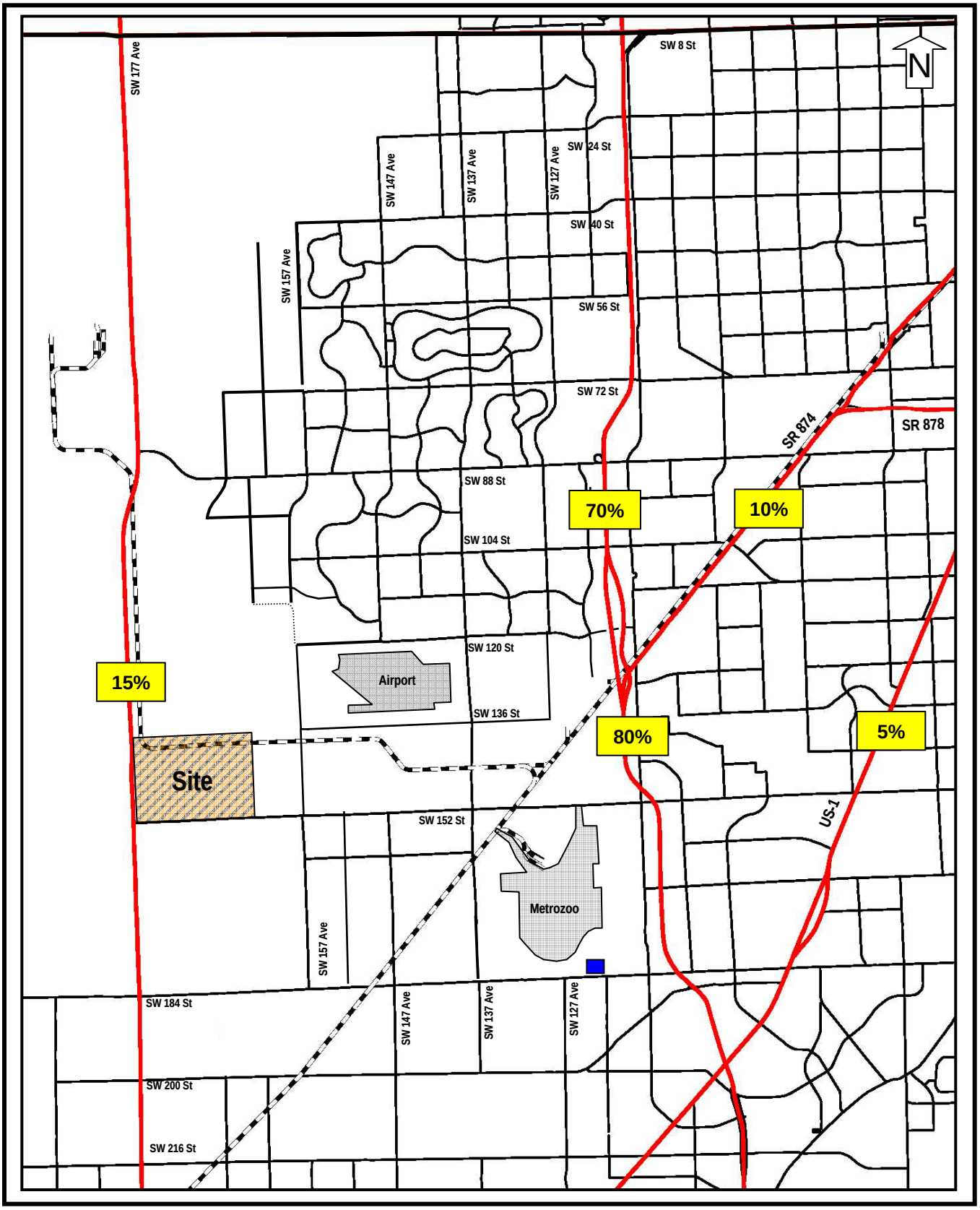
Not Yet Applicable
October 2001 Cycle, Ordinance No. 02-198
October 10, 2002

Legend

Site Location

Map 23-3
Alternative Figure 7 (Not Yet Applicable) Adopted on October 10, 2002 by Miami-Dade County
Parkland
August 2006

Source: Cathy Sweetapple & Associates



Legend

Site Location

Existing Rail Lines

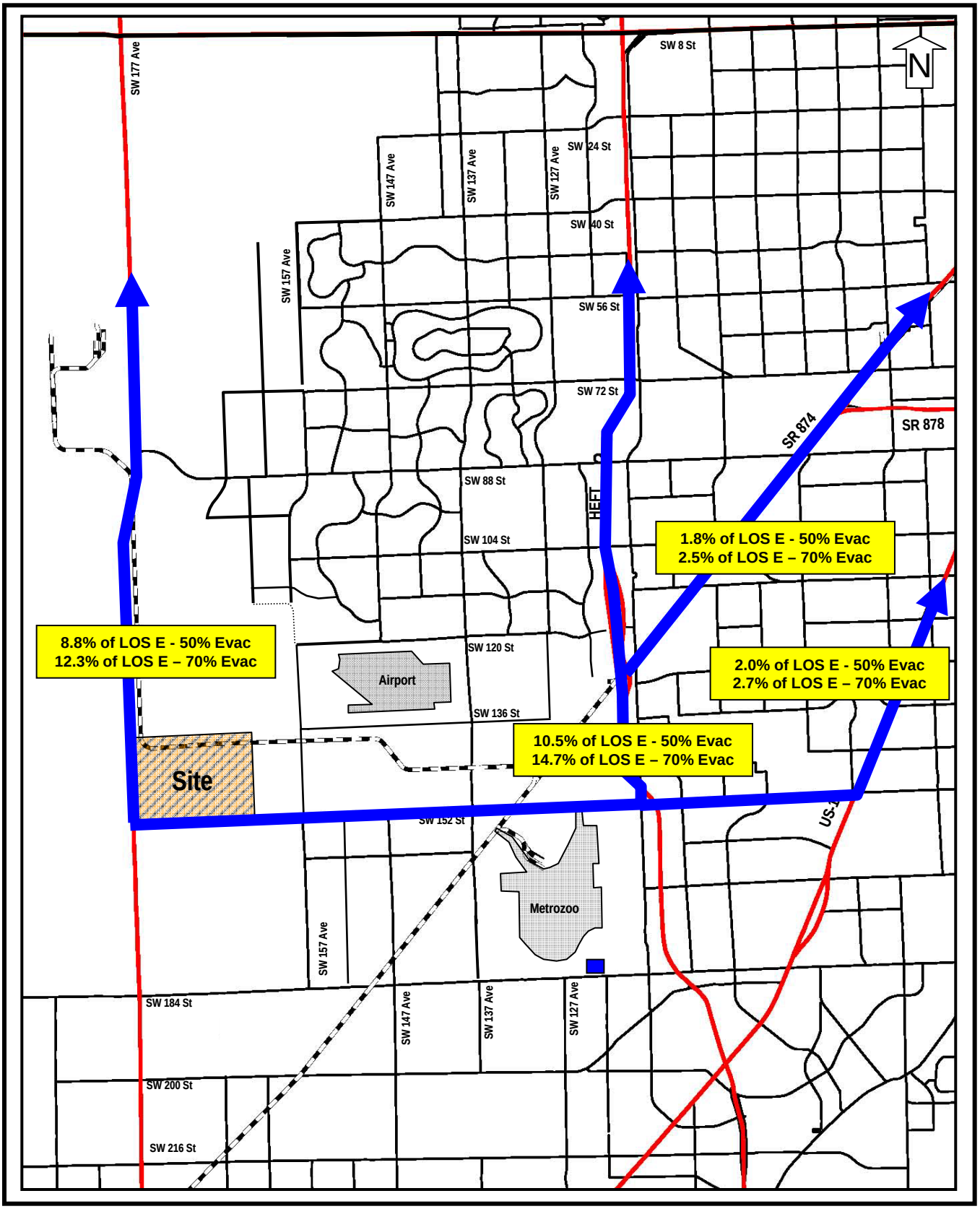
FIHS Roadways

Existing Shelter

XX% Evacuation Distribution % from the DRI

Map 23-4
Hurricane Evacuation Distribution for DRI Traffic
Parkland
August 2006

Source: Cathy Sweetapple & Associates



Legend

Site Location

Existing Rail Lines

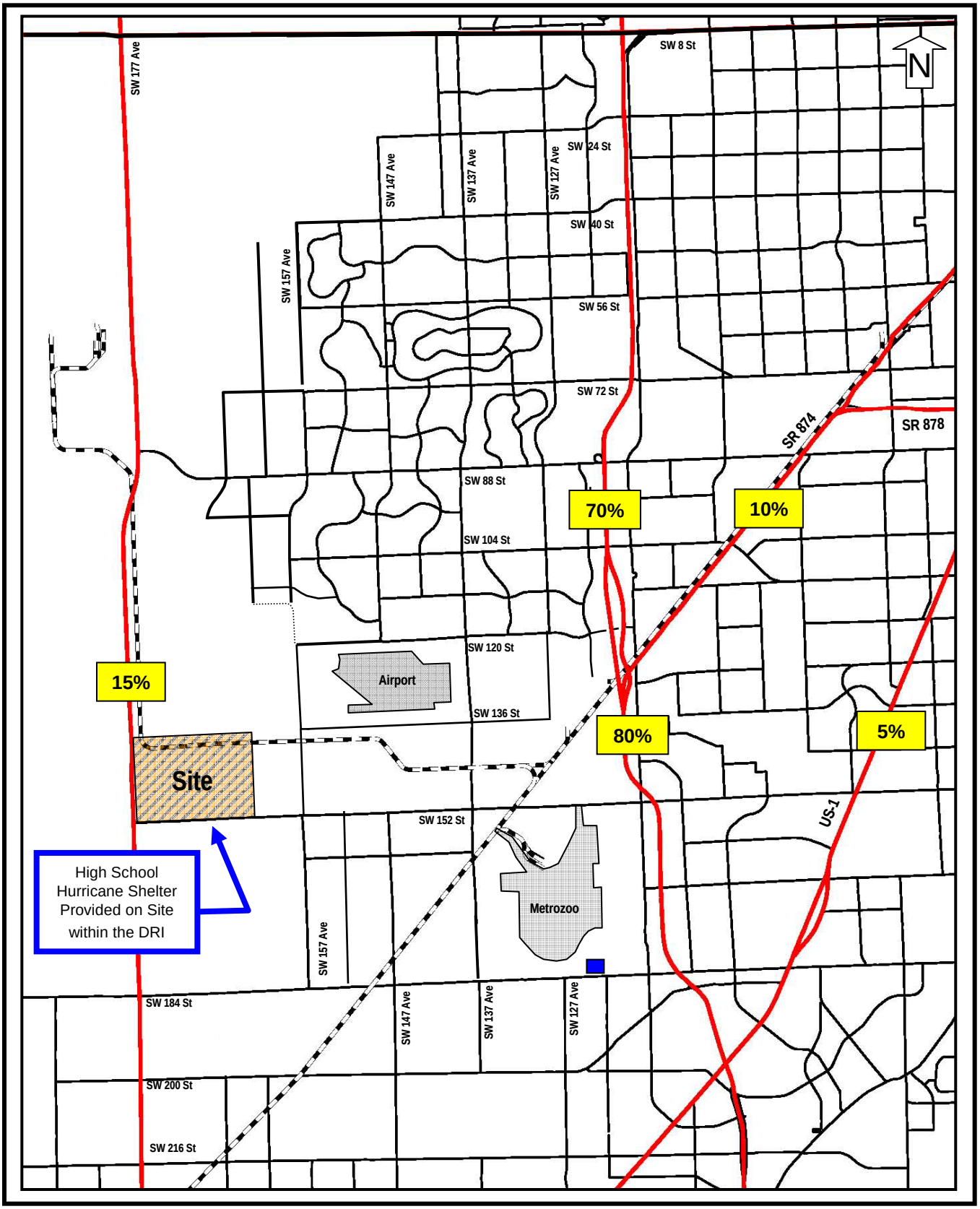
FIHS Roadways

Existing Shelter

XX% Evacuation % of LOS E

Map 23-5
Hurricane Evacuation Distribution as a Percent of LOS E
Parkland
August 2006

Source: Cathy Sweetapple & Associates



Legend

Site Location

Existing Rail Lines

FIHS Roadways

Existing Shelter

XX% Evacuation Distribution % from the DRI

Map 23-6
Hurricane Evacuation Enhancements
Parkland
August 2006

Source: Cathy Sweetapple & Associates