



# **Traffic Calming for Pedestrians** at Miami Dade College Wolfson Campus

## Executive Summary

**September 2004**

*Prepared for:*  
Miami-Dade MPO

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## INTRODUCTION

The Wolfson Campus of Miami Dade College (MDC), located in the northern portion of the Central Business District (CBD) of Downtown Miami, currently has an enrollment in excess of 20,000 students. Due to the Downtown location and multiple city block layout of the campus within the City's grid street network, a substantial number of students, faculty, and staff are required to cross streets to access the various educational buildings and facilities, and parking facilities and transit stations located at the campus. The purpose of this study is to develop recommendations for traffic calming measures specifically aimed at reducing the negative effects of motor vehicle use on pedestrians in and around the Wolfson campus. These recommendations are proposed to improve pedestrian connections and safety at key locations at the campus. Figure 1 shows the Wolfson Campus layout, the project study area, and the project's specific focus areas.

## LITERATURE REVIEW

A literature review was completed to research specific pedestrian and traffic calming measures that have been included and recommended (even if not implemented) in Downtown Miami, as well as at other colleges or universities located in densely developed downtown urban environments. Studies with such a narrow focus were difficult to find; as such, other studies were reviewed which focused on colleges and universities not located in a major downtown area, as well as studies of urban and downtown areas not having a college or university.

The most prevalent issues among the various studies reviewed were those of pedestrian safety and of non-compliance by pedestrians at existing crosswalks or pedestrian signal phases. The most prevalent approaches for dealing with the issues are presented in Table 1, in which a summary of the most common pedestrian and traffic calming treatments recommended in the various studies reviewed is displayed. As shown, the most commonly proposed treatments to address these issues are enhancements to crosswalks, new or improved signals, enhanced signage, curb extensions, and pedestrian refuge islands.

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## ISSUES & RECOMMENDATIONS

Based on observed pedestrian issues at the MDC Wolfson Campus, a tiered recommendation plan was developed for each of the focus areas, which has been proposed to give the College some options regarding potential improvements at each of the focus areas. As depicted below the lower end tiers represent improvements that provide lower cost pedestrian enhancements that are easier to implement. Higher tiers include pedestrian improvements that offer more benefits and safer environments for pedestrians, but typically involve higher costs and more complex implementation. Most focus areas have 2 or 3 tiers, with only Focus Area A having 4 tiers.

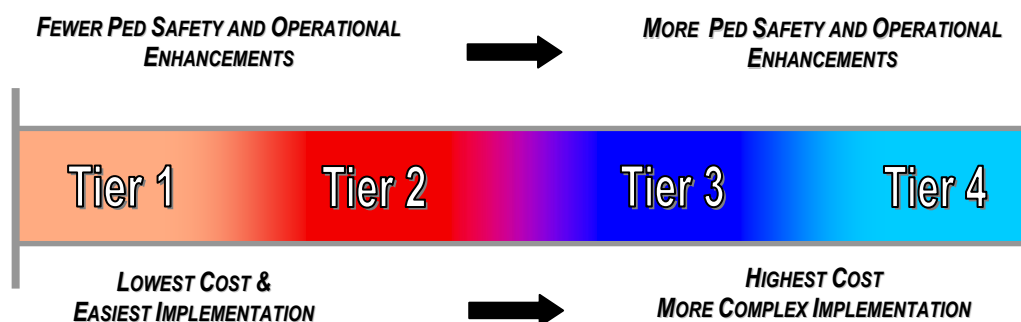


Table 2 presents the primary issues at each focus area, along with the recommendations proposed for each tier to address the issues, and planning level cost ranges for each of the recommended tiers. The source of the majority of the cost ranges is Alternative Treatments for At-Grade Pedestrian Crossings, published in 2001 by the Institute of Transportation Engineers. The range of these costs takes into consideration differing conditions at various sites, such as drainage requirements (for curb extensions) and materials used.

The individual pedestrian and traffic calming treatments included within the tiered recommendation plan are shown graphically in Figure 2 using symbols. Those symbols shown in gray are either existing conditions (if shown in Tier 1), or are improvements from a previous tier that are carried forward to the next tier. Table 3 presents a list of all treatments recommended at the Wolfson Campus, along with the most important pedestrian benefits of each treatment.

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## FUNDING OPTIONS

There are a number of different ways in which the various recommended improvements might be funded. Several options are listed below:

- City of Miami and/or Miami-Dade County Capital Improvement Program (CIP)
- People's Transportation Plan (PTP), from the City of Miami allocation
- Coordination with other projects (i.e., the proposed City of Miami Streetcar project)
- Coordination with new large scale developments
- TEA-21 (or its successor) – funds are available for pedestrian and traffic calming improvements through Transportation Enhancements, Surface Transportation Program (STP), Hazard Elimination Program (HEP), Transit Enhancements, and Transportation and Community and System Preservation Pilot Program (TCSP)

Access to TEA-21 funds is generally obtained through the Metropolitan Planning Organization (MPO), which plans, prioritizes, and submits projects for the use of these funds to the Florida Department of Transportation.

The first step in getting the recommended projects funded is for representatives from the MDC Wolfson Campus to meet with the City of Miami and Miami-Dade County to determine how these projects may be accommodated first and foremost as a component of other projects or programs, including sidewalk, safety, or spot improvement programs.





# MDC WOLFSON CAMPUS

## Study Area & Focus Areas

### LEGEND:

- Study Area
- Non-Study Area
- Focus Area
- MDC Wolfson Building Number







Table 1  
Recommended Pedestrian Treatments in Other Areas

Proposed or Recommended Treatment	Colleges/Universities											Cities					Total
	UGA	UNLV	Wisc	UC Bk	Marist	Rollins	G Wash	J Hopk	Drexel	MTU	Carlin	Bost U	Cambr	Brklyn	Sacrm	Seattle	
Crosswalk Improvements			✓	✓	✓			✓		✓	✓		✓		✓		8
New/Improved Signals		✓	✓	✓	✓			✓				✓			✓		8
Enhanced Signage	✓	✓				✓			✓								5
Curb Extensions												✓	✓	✓	✓		4
Sidewalk/Crosswalk Alignment		✓			✓				✓								4
Ped Refuge Islands		✓	✓					✓					✓				4
Landscaping	✓					✓											3
Raised Intersection	✓												✓	✓			3
Raised Crosswalk	✓						✓						✓				3
Exclusive Ped Phase/Leading Ped Interval	✓							✓						✓			3
Road Narrowing	✓										✓	✓					3
Greater Level of Enforcement		✓			✓					✓							3
Ped Overpass		✓					✓	✓									3
Chicanes													✓			✓	2
Ped Countdown Signal Timers					✓		✓										2
Lighting Improvements					✓												2
1-Way to 2-Way Street Conversions				✓											✓		2
Speed Humps																✓	1

UGA = Univ. of Georgia

G Wash = George Washington Univ.

Bost U = Boston Univ. (Route 20 Study)

UNLV = Univ. of Nevada Las Vegas

J Hopk = Johns Hopkins Univ.

Cambr = Cambridge, MA

Wisc = Univ. of Wisconsin

MTU = Michigan Technological Univ.

Brklyn = Brooklyn, NY

UC Bk = Univ. of California at Berkeley

Carlin = Carleton Univ.

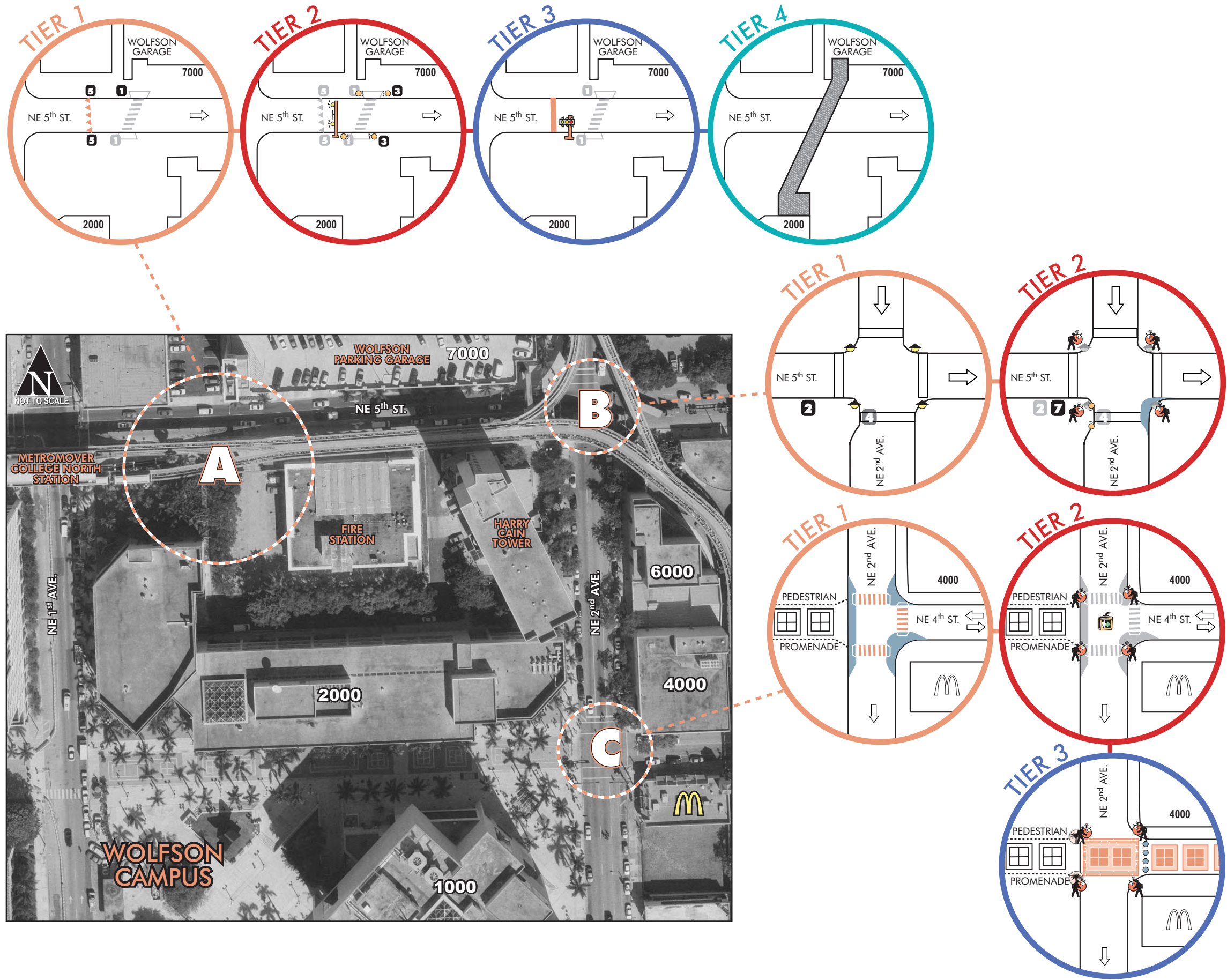
Sacrm = Sacramento, CA

## MDC Wolfson Campus Issues and Tiered Recommendations

Issues	Tier 1 Recommendations	Tier 2 Recommendations	Tier 3 Recommendations	Tier 4 Recommendations
<b>Focus Area A: NE 5th Street at Wolfson Garage</b>				
 <ul style="list-style-type: none"> <li>▪ Heavy ped volume midblock (500-600 crossing per hour during peak hours)</li> <li>▪ Significant truck traffic</li> <li>▪ 5th St is a primary route into the Port</li> <li>▪ Potential for multiple threat ped crashes with 3-lane section</li> </ul>	Advance Yield Line "Yield Here to Pedestrians" Signs Pedestrian Crossing Warning Sign  (\$900 - \$1,400)	Tier 1 Improvements, plus the following: Overhead Sign w/ Flashing Beacons Bollards w/ Automatic Detection "Walk Between Posts to Activate Flashing Crosswalk" Signs for Peds  (\$17,100 - \$51,700)	Exclusive Pedestrian Signal   (\$50,000 - \$75,000)	Pedestrian Bridge   (\$500,000 - \$3,000,000)
<b>Focus Area B: NE 5th Street/NE 2nd Avenue</b>				
 <ul style="list-style-type: none"> <li>▪ Significant pedestrian activity (450 per hour in west crosswalk during peak hours)</li> <li>▪ Vehicle view of pedestrians can be obstructed by Metromover column</li> <li>▪ 3 ped crashes (1996-2003), 1 fatality</li> <li>▪ Lighting is very poor</li> </ul>	"Watch Turning Vehicles" Pavement Legend for Peds "Turning Traffic Must Yield to Peds" Sign Ped-Oriented Street Lighting  (\$16,500 - \$25,000)	Tier 1 Improvements, plus the following: Countdown Ped Signal Indicators Curb Extension (SE corner) "Pedestrian in Crosswalk" Internally Illuminated "Smart Sign"  (\$31,500 - \$71,400)		
<b>Focus Area C: NE 2nd Avenue/NE 4th Street</b>				
 <ul style="list-style-type: none"> <li>▪ Very heavy ped traffic (650-1,000 crossing per hour during peak hours)</li> <li>▪ Conflicts between WB left turning vehicles &amp; pedestrians crossing in south crosswalk</li> <li>▪ Low volume of vehicles using 4th St</li> </ul>	Curb Extensions (NE/SE corner; W side) Zebra Crosswalk Striping  (\$16,500 - \$63,000)	Tier 1 Improvements, plus the following: Countdown Ped Signal Indicators Leading Pedestrian Signal Interval  (\$20,500 - \$70,300)	Pedestrian Promenade Extension  Textured Pavement (2nd Ave/4th St)  Countdown Ped Signal Indicators Wolfson Campus Gateway Feature (\$1,467,000 - \$1,669,000)	
<b>Focus Area D: NE 3rd Street</b>				
 <ul style="list-style-type: none"> <li>▪ Heavy pedestrian activity crossing 3rd St midblock (300 per hour during peak hour)</li> <li>▪ Bldg 1 steps are angled - peds tend to cross 3rd St at this same angle</li> </ul>	Advance Yield Line "Yield Here to Pedestrians" Signs Landscaping Planter at Bldg 1 Steps Pedestrian Railing on Bldg 1 Steps "Use Crosswalk" Signs for Peds  (\$4,600 - \$13,100)	Tier 1 Improvements, plus the following: Shift MDC Parking Lot driveway west Shift Crosswalk (Curb Ramp, Zebra Crosswalk Striping)  Ped-Oriented Lighting on Walkway E. of MDC Parking Lot  (\$19,900 - \$36,600)	Tier 2 Improvements, plus: Raised Crosswalk   (\$29,900 - \$56,600)	
<b>Focus Area E: NE 1st Avenue</b>				
 <ul style="list-style-type: none"> <li>▪ Heavy pedestrian activity crossing 3rd St midblock (400 per hour during peak hour)</li> <li>▪ Midblock pedestrian crossings occur over the entire block, not at one location</li> <li>▪ Many pedestrians cut through the MDC parking lot</li> </ul>	Pedestrian Railing on E. sidewalk along 1st Ave   (\$6,250 - \$8,750)	Tier 1 Improvements, plus the following: Fencing & Landscaping along Borders of MDC Parking Lot  Countdown Ped Signal Indicators (2nd & 3rd St intersections on 1st Ave) Zebra Crosswalk Striping (1st Ave/3rd St)  (\$35,690 - \$83,250)		

# MDC WOLFSON CAMPUS

## Tiered Recommendations



### LEGEND:

#### Symbols

- Improvements from previous tier (or existing conditions)
- Direction of Traffic Flow
- Zebra Crosswalk Striping
- Advanced Yield Line
- Advanced Stop Line
- Curb Ramp
- Curb Extensions
- Mastarm with Exclusive Pedestrian Signal
- Mastarm with Overhead Pedestrian Warning Sign & Flashing Beacons
- Pedestrian bridge
- Textured Pavement within Intersection
- Pedestrian Promenade Extension
- Bollards
- Bollards with Automatic Pedestrian Detectors
- Pedestrian Oriented Street Lighting
- Pedestrian Railing
- Leading Pedestrian Signal Interval
- Countdown Pedestrian Signal Indicators
- Wolfson Campus Gateway Feature
- Landscaping & Fencing
- Handicap Accessible

#### Signage & Striping

- 1** Pedestrian Crossing Warning Sign (W11-2, W16-7)
- 2** "Turning Traffic Must Yield to Pedestrians" Sign (R10-15)
- 3** "Walk Between Posts To Activate Flashing Crosswalk - Watch For Cars Before Crossing Sign
- 4** "Watch Turning Vehicles" (Pavement Legend)
- 5** "Yield Here to Pedestrians" Sign (R1-5 or R1-5a)
- 6** "Use Crosswalk" Sign (R9-3b)
- 7** "Pedestrian in Crosswalk" lighted sign - tied to automatic detectors in bollards





# MDC WOLFSON CAMPUS

## Tiered Recommendations

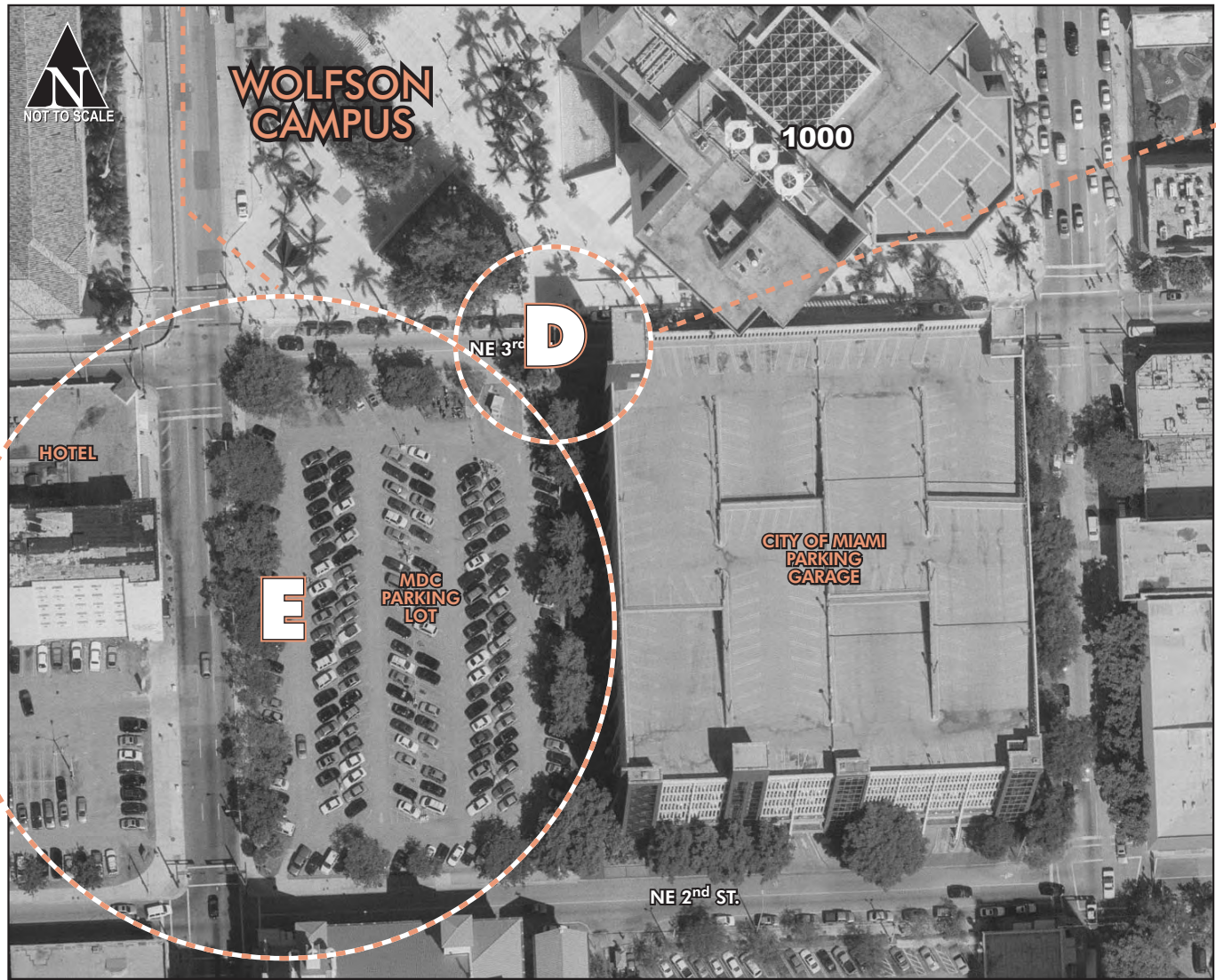
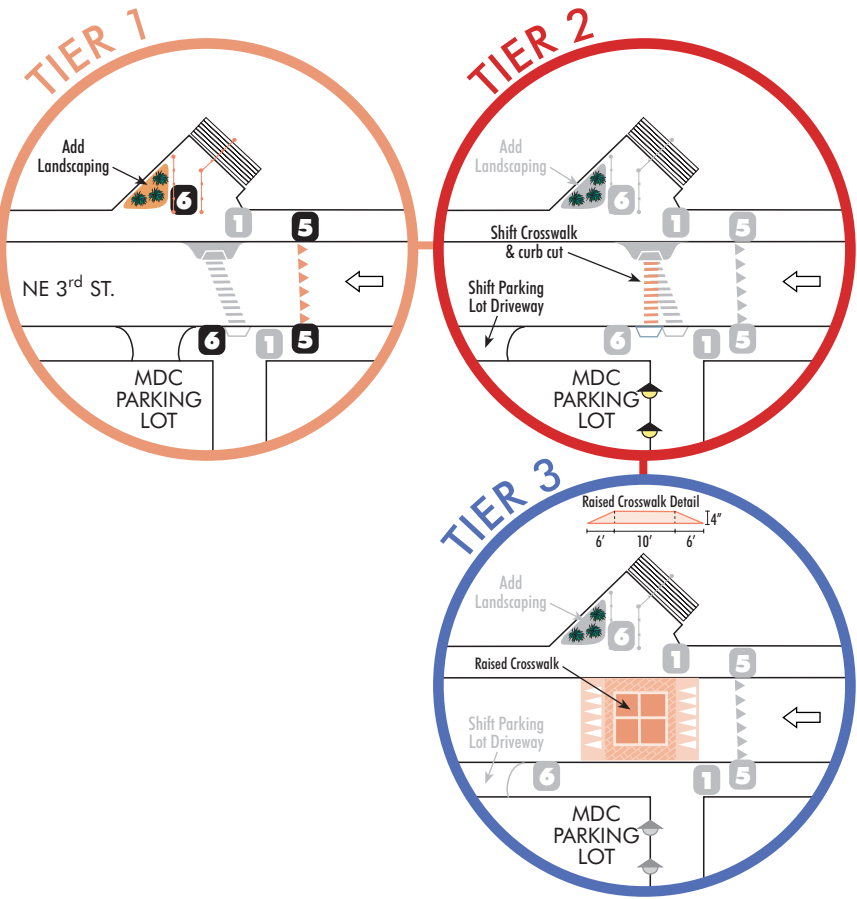
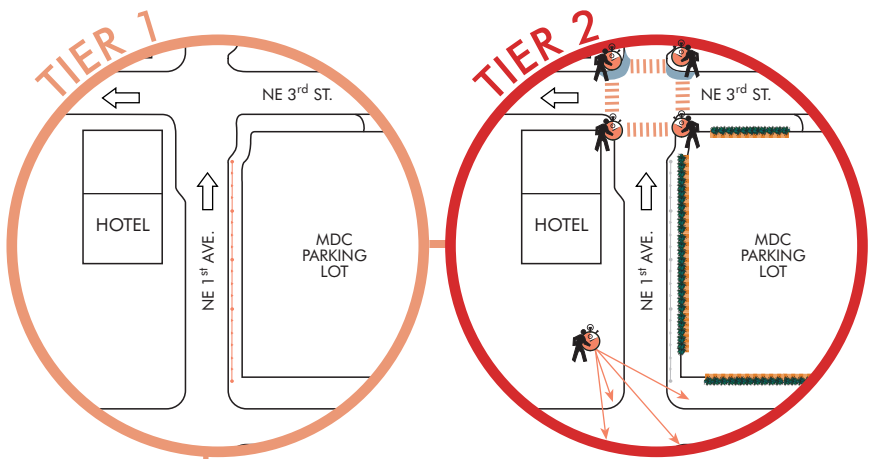
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#### Signage & Striping

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# MDC Wolfson Campus

## Benefits of Treatments








Recommended Improvement	Symbol	Benefit
Zebra Crosswalk Striping		Improves visibility of crosswalk
Advance Yield Line		Encourages drivers to stop well in advance of the crosswalk; Helps to reduce the potential for pedestrian crashes on multi-lane streets
Curb Ramp		Provides access to sidewalks for those with disabilities
Curb Extension		Reduces the distance that pedestrians travel in the street; Improves the visibility of pedestrians
Exclusive Pedestrian Signal		Eliminates pedestrian-vehicle conflicts by separating pedestrian and vehicle movements in time
Overhead Pedestrian Warning Sign w/ Flashing Beacons		Draws driver attention to a crosswalk; Drivers more likely to yield
Pedestrian Bridge		Eliminates pedestrian-vehicle conflicts by separating pedestrian and vehicle movements in space
Textured Pavement within Intersection		Increases driver awareness of pedestrian activity by improving visibility of crosswalk
Pedestrian Promenade Extension		Extends vehicle-free pedestrian corridor
Raised Crosswalk		Makes crosswalks more visible; Reduces driver speeds at the crosswalk
Bollard w/ Automatic Pedestrian Detection		Improves effectiveness of flashing beacons; Does not require pedestrians to push a button
Pedestrian-Oriented Lighting		Improves visibility of pedestrians by drivers; Pedestrians feel safer in well lit areas
Pedestrian Railing		Directs pedestrians to appropriate crossing locations; Prevents midblock crossings
Leading Pedestrian Signal Interval		Reduces ped-vehicle conflicts -- allows peds to start crossing a few seconds before vehicles are given a green indication to turn across the crosswalk
Countdown Pedestrian Signal Indicator		Shows peds how long the ped phase will last; Discourages crossing at the end of a phase
Wolfson Campus Gateway Feature		Identifies the college and the need for drivers to watch for pedestrians; Helps to slow speeds
Landscaping & Fencing		Provides a border; Helps to direct pedestrians to the appropriate walking paths
Landscaping Planter		Helps to direct pedestrians to the appropriate walking paths



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Table 3

## MDC Wolfson Campus Benefits of Treatments

Recommended Improvement	Symbol	Benefit
Pedestrian Crossing Warning Sign		Warns drivers of areas with high pedestrian activity
"Turning Traffic Must Yield to Pedestrians" Sign		Defines rule for turning vehicles with respect to peds
"Walk Between Posts to Activate Flashing Crosswalk - Watch for Cars Before Crossing" Sign		Shows pedestrians where to walk to activate flashing beacons
"Watch Turning Vehicles" Pavement Legend		Alerts pedestrians to watch for turning vehicles while crossing the street
"Yield Here to Pedestrians" Sign		Shows drivers the appropriate location to yield to pedestrians
"Use Crosswalk" Sign		Encourages pedestrians to use a marked crosswalk
"Pedestrian in Crosswalk" Internally Illuminated Sign activated by bollards with automatic detection		Alerts drivers to the presence of a crossing pedestrian when the driver's view may be obstructed



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Table 3 (continued)