

DISTRICTWIDE TRAFFIC OPERATIONS STUDIES
FM NO. 250093-1-32-03
TWO NO. 26



SAFE ROUTES TO SCHOOL

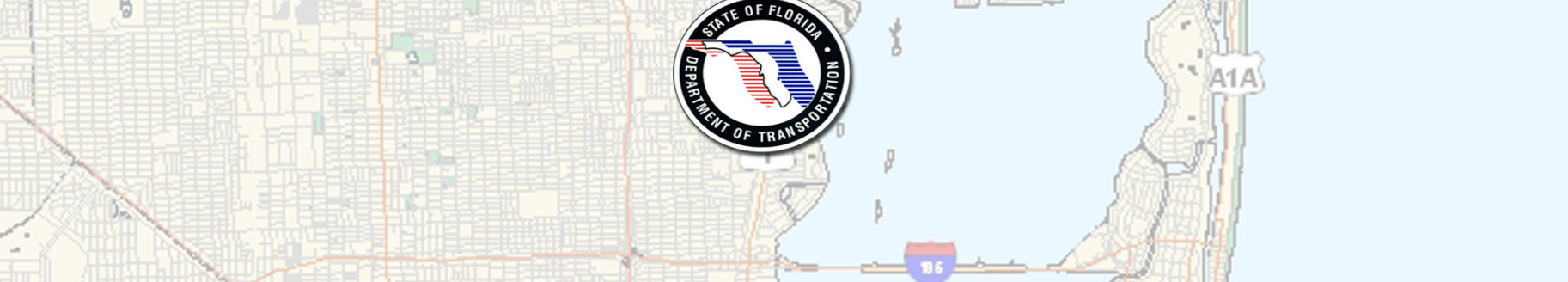
FINAL REPORT

North Miami Elementary

W. J. Bryan Elementary

95

Prepared for:
Florida Department of Transportation
District 6



Prepared by:

Reynolds, Smith and Hills, Inc.
JUL 12 2007

A map of the Miami area with a red pin marking the location of Riverside Elementary. The date "JULY 12, 2007" is printed in large black letters across the top of the map.

DISTRICTWIDE TRAFFIC OPERATIONS STUDIES

FM NO. 250093-1-32-03

TWO 26

SAFE ROUTES TO SCHOOL

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Fulford Elementary School

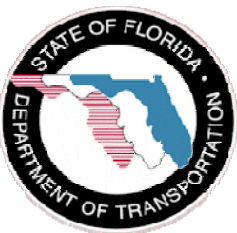
North Miami Elementary School

Riverside Elementary School

Southside Elementary School

W.J. Bryan Elementary School

Prepared for



Prepared by



Safe Routes to School (SRTS) Pilot Project

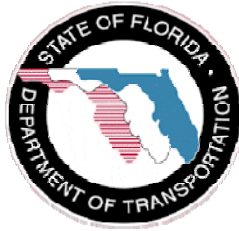
Financial Project No.: 25009313203

Task Work Order No.: 26

FINAL REPORT for **Fulford Elementary School**

Prepared for:

Florida Department of Transportation



District 6

Prepared by:



REYNOLDS, SMITH & HILLS, INC.

July 11, 2007

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1. INTRODUCTION

Safe Routes to School (SRTS) is a federally funded program that was authorized in August 2005 by Section 1404 of the federal transportation act, SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). The program targets children in grades K-8 and was developed to meet the following objectives:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age, and
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Florida's SRTS program is managed through the Florida Department of Transportation (FDOT). In accordance with the program guidelines, the FDOT awards projects for SRTS funding following a district-wide competitive application process. The FDOT District 6 Office in consultation with Miami-Dade County Metropolitan Planning Organization (MPO), Miami-Dade County School Board and Miami-Dade Public Works Department identified Fulford Elementary School as a prospective candidate for SRTS funding. RS&H was retained by the District to assist in identifying infrastructure improvement needs and preparing the required application forms for the SRTS program. This report was prepared in support of the application for funding proposed infrastructure improvements at Fulford Elementary School for the SRTS program.

2. PROJECT SCHOOL DATA

The following information pertains to the project school.

Name: Fulford Elementary

Address: 16140 NE 18th Street, North Miami Beach, Fl 33162 (Figure 1 shows project location map)

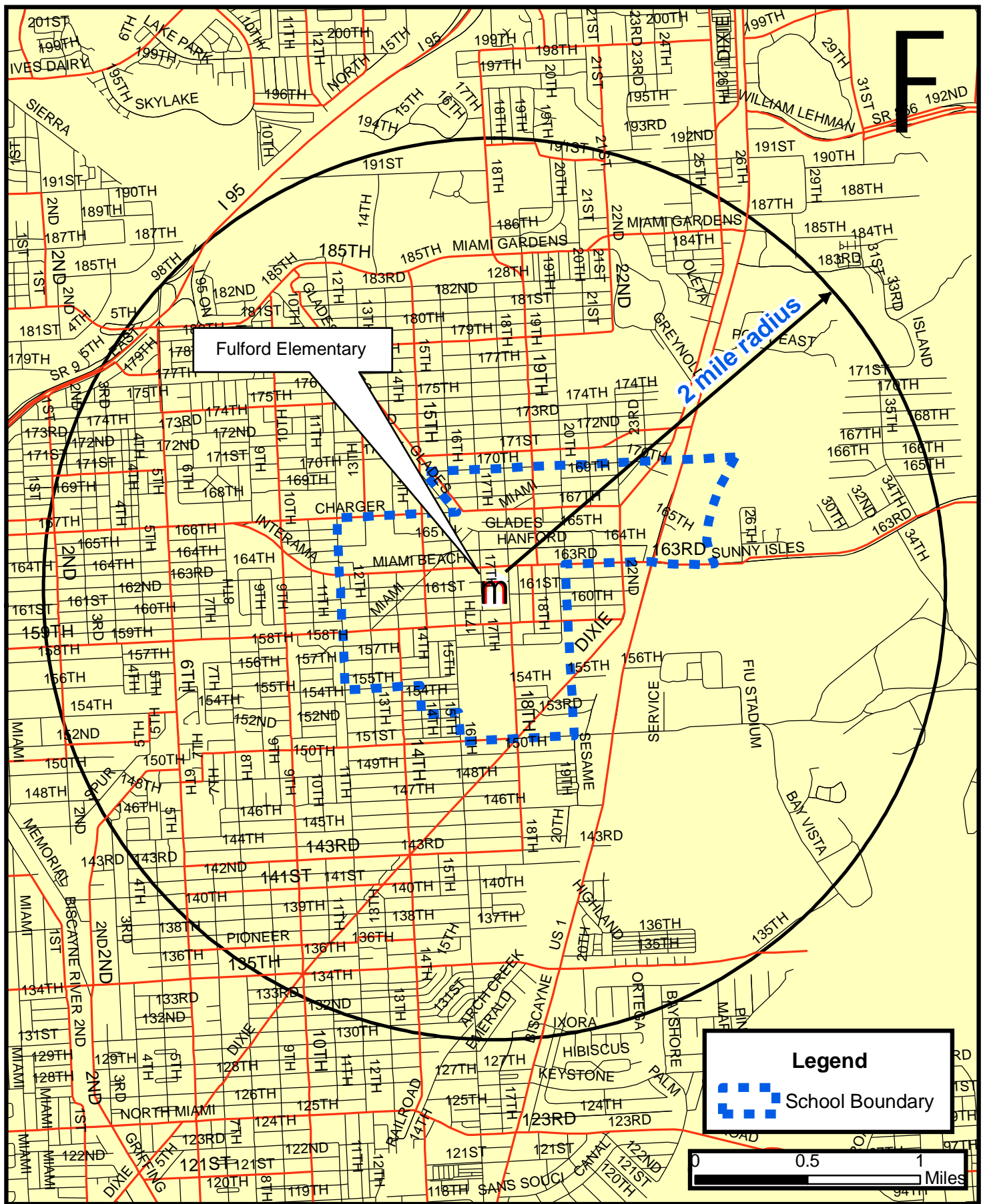
Enrollment: 687 students (School year 2006 to 2007)

School Attendance Boundary: Attendance boundary is shown in Figure 1.

Estimated mode split for transportation to/from school (based on interviews with school officials):

- Walk/Ride = Not Available
- Private Car = Not Available
- Buses = Not Available





3. CRASH HISTORY

Pedestrian and bicycle crashes reported throughout Miami-Dade County for the period 2002 through 2004 were obtained from the MPO. A GIS analysis was conducted using the crash data to identify pedestrian and bicycle crashes that were reported within the limits of the school attendance boundary (or 2 mile radius). The analysis identified fatal crashes, injury crashes and juvenile crashes. Appendix A shows plots of the crashes reported within the project limits. The crash data is summarized in Table 1.

The recommended SRTS for Fulford Elementary are presented in Section 5 of the report. Table 2 contains crash details for pedestrian/bicycle collisions that were reported along the recommended SRTS. As shown in Table 2, NE 19 Avenue experienced four pedestrian crashes (none involving juveniles) and NE 163 Street experienced one crash that a juvenile. A detailed research of the individual police crash reports would be required to identify probable causal factors for these pedestrian crashes and what, if any, specific engineering countermeasures may be considered to reduce these crashes. This research is beyond the limited scope of this SRTS project. Notwithstanding, based on the field reviews that were conducted for this study recommended improvements were developed to address roadway and traffic deficiencies that would enhance overall safety conditions for pedestrian and bicycle traffic using the proposed safe routes.

4. DEVELOPMENT OF SRTS

SRTS for Fulford Elementary School were developed based on guidelines contained in the Safe Routes to School, Procedure Manual developed by Miami-Dade County, MPO September 2005. Several additional reference sources also provided guidance in developing safe routes for the project school. Notable among these were:

- National Center for Safe Routes to School: <http://www.saferouteroutesinfo.org/>
- Federal Highway Safe Routes to School: <http://safety.fhwa.dot.gov/saferoutes/>

Preliminary SRTS were initially developed for the project school based on reviews of several engineering factors. These included:

- School attendance boundary
- Aerial photographs
- Land use data (see Appendix B)
- Frequency/severity of juvenile pedestrian and bicycle crashes
- Roadway characteristics (sidewalks, medians, buffers, etc.)
- Speed limits
- Traffic volumes
- Location of traffic control devices
- Driveway density
- Location of canals and railroad crossings



Table 1
Summary of Pedestrian and Bicycle Crashes
Fulford Elementary

| Road Name | Segment | | 2002 Ped & Bike Crashes | | | | | | 2003 Ped & Bike Crashes | | | | | | 2004 Ped & Bike Crashes | | | | | |
|---------------|---------------|---------------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|
| | | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | |
| | From | To | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries |
| NE 12 Avenue | NE 155 Street | NE 167 Street | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 4 |
| NE 14 Avenue | NE 163 Street | NE 155 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 15 Avenue | NE 155 Street | NE 167 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 |
| NE 16 Avenue | NE 153 Street | NE 167 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 17 Avenue | NE 165 Street | NE 160 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 18 Avenue | NE 151 Street | NE 165 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| NE 19 Avenue | NE 170 Street | NE 163 Street | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 |
| NE 22 Avenue | NE 163 Street | NE 170 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 4 |
| NE 161 Street | NE 18 Avenue | NE 22 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 164 Street | NE 15 Avenue | NE 22 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 166 Street | NE 20 Avenue | NE 17 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 167 Street | Golden Glades | NE 22 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 170 Street | Golden Glades | NE 23 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 163 Street | NE 12 Avenue | Biscayne Blvd | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | | | 0 | 2 | 0 | 11 | 0 | 13 | 0 | 1 | 0 | 14 | 0 | 15 | 0 | 0 | 0 | 15 | 0 | 19 |

Note: 1. Juveniles= children between the ages of 5-13 years
2. Others= children and adults greater than the age of 13 years

Table 2
Summary of Crashes Reported on Proposed Safe Routes
Fulford Elementary, 2002-2004

| CRASH DETAILS | | | | | | | |
|---|-------------|---------------|-------------|----------|----------------|-----------------|--------------------|
| Safe Route | Case Number | Date of Crash | Day of Week | Time | Pedestrian Age | Injury/Fatality | Location of Crash |
| NE 19 Avenue (From NE 163 Street to NE 170 Street) | 584562300 | 11/20/02 | Tue | 12:44 PM | 17 | Injury | NE 170 Street |
| | 584519720 | 02/23/02 | Fri | 4:16 PM | 51 | Injury | NE 163 Street |
| | 584567550 | 02/26/03 | Tue | 2:05 PM | 20 | Injury | NE 163 Street |
| | 584589170 | 03/04/04 | Wed | 4:24 PM | 15 | Injury | NE 168 Street |
| NE 159 Street (From NE 14 Avenue to NE 18 Avenue) | 584563590 | 12/12/02 | Wed | 12:34 PM | 14 | Injury | NE 12 Avenue |
| | 584567450 | 02/25/03 | Mon | 5:30 PM | 76 | Injury | NE 14 Avenue |
| NE 16 Avenue (From NE 153 Street to NE 167 Street) | 584550560 | 05/01/02 | Tue | 9:30 PM | 42 | Injury | NE 158 Street |
| | 584586210 | 01/06/04 | Mon | 3:35 PM | 20 | Injury | 16099 NE 16 Avenue |
| NE 163 Street (From NE 18 Avenue to NE 19 Avenue) | 755891150 | 11/02/04 | Mon | 7:34 PM | 8 | Injury | NE 18 Avenue |

Note: Juvenile crashes are highlighted in gray.

5. RECOMMENDED SRTS

Following the process described in Section 4, the recommended SRTS was developed for Fulford Elementary School. The map on the following page shows the recommended SRTS. Table 3 shows pertinent roadway and traffic characteristics for the road segments along the recommended SRTS.

6. FIELD REVIEW

Field reviews for Fulford Elementary School were conducted on May 25, 2007. The primary deficiencies that were identified along the proposed safe routes were missing sidewalk, crosswalks, school zone signage, and pedestrian heads. A list of the comprehensive deficiencies observed can be found in Appendix C.

7. RECOMMENDED IMPROVEMENTS AND COST ESTIMATES

Based on the field reviews that were conducted along the SRTS (Section 5), recommended infrastructure improvements were developed to encourage and enhance safety for children walking or bicycling to/from school. The recommended infrastructure improvements were limited to eligible projects specified in Florida's SRTS Application Guidelines. Table 4 shows a listing of recommended infrastructure improvement projects along the safe route segments. Table 3 also includes cost estimates for the improvements. The cost estimates were developed based on FDOT's average unit cost rates for projects implemented in District 6 region. The total cost for infrastructure improvements was estimated at \$72,721.66.

SAFE ROUTES TO SCHOOL

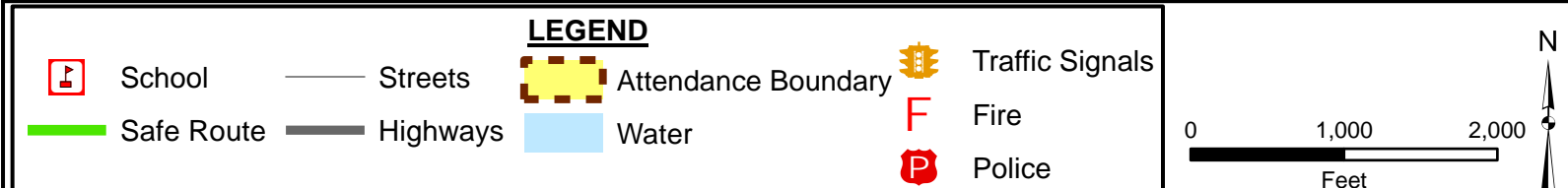


Table 3
Fulford Elementary
Existing Roadway and Traffic Characteristics for SRTS Segments

| Road | Segment | | Facility Type | Speed Limit | AADT ¹ | Ped & Bike Crashes ² |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|-------------------|---------------------------------|
| | From | To | | | | |
| NE 19 th Avenue | NE 163 rd Street | NE 170 th Street | City Collector | 40 mph | Moderate | 6 |
| NE 18 th Avenue | NE 159 th Street | NE 163 rd Street | City Local Street | 35 mph | Low | 1 |
| NE 14 th Avenue | NE 155 th Street | NE 163 rd Street | City Local Street | 35 mph | Low | 2 |
| NE 16 th Avenue | NE 153 rd Street | NE 167 th Street | City Local Street | 35 mph | Low | 4 |
| NE 163 rd Street | NE 18 th Avenue | NE 19 th Avenue | State Road (Minor Arterial) | 40 mph | Moderate | 6 |
| NE 159 th Street | NE 12 th Avenue | NE 18 th Avenue | City Collector | 40 mph | Low | 0 |

Notes:

1. For road segments where AADT data was not readily available, traffic volume is assessed as light, moderate or heavy based on fields observed conditions.
2. Total pedestrian and bicycle crashes for 2002 - 2004

Table 4
Fulford Elementary School
Cost Estimate for Recommended Improvements

| Road Segment | Recommended Improvements | Length (ft) | Unit Cost | Unit | Total |
|---|---|-------------|------------|------|-------------|
| NE 19th Avenue (From NE 163rd Street To NE 170th Street) | - Install crosswalk at NE 170th Street - west side | 40 | \$2.00 | ft | \$80.00 |
| | - Install pedestrian countdown signals | 8 | \$1,428.51 | ea | \$11,428.08 |
| NE 18th Avenue (From NE 159 Street To NE 163 Street) | - Install crosswalk at NE 158th Street - west side | 40 | \$2.00 | ft | \$53.33 |
| | - Install crosswalk at NE 157th Terrace - west side and east side | 80 | \$2.00 | ft | \$160.00 |
| | - Install pedestrian countdown signals | 8 | \$1,428.51 | ea | \$11,428.08 |
| | - Install flourescent yellow green pedestrian sign | 4 | \$244.41 | ea | \$977.64 |
| NE 14th Avenue (From NE 163 StreetTo NE 155 Street) | - Install crosswalk at NE 160 Street - west side and east side | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at Miami Drive - west side and east side | 290 | \$2.00 | ft | \$386.67 |
| NE 16 Avenue (From NE 153 Street To NE 167 Street) | - Install crosswalk at NE 158 Street - west side | 40 | \$2.00 | ft | \$53.33 |
| | - Install crosswalk at NE 157 Terrace - east side | 45 | \$2.00 | ft | \$60.00 |
| | - Install 4" sidewalk at NE 154 Terrace | 650 | \$49.70 | sy | \$21,536.67 |
| | - Install 4" sidewalk at NE 158 Street | 66 | \$49.70 | sy | \$2,186.80 |
| | - Install 6" sidewalk at NE 158 Street | 24 | \$79.59 | sy | \$1,273.44 |
| | - Install crosswalk at NE 160 Street - east side and west side | 80 | \$2.00 | ft | \$2,160.00 |
| Preliminary Total Cost | | | | | \$51,944.04 |
| Contingencies (20%) | | | | | \$10,388.81 |
| Mobilization (10%) | | | | | \$5,194.40 |
| Maintence of Traffic (10%) | | | | | \$5,194.40 |
| Grand Total Cost | | | | | \$72,721.66 |

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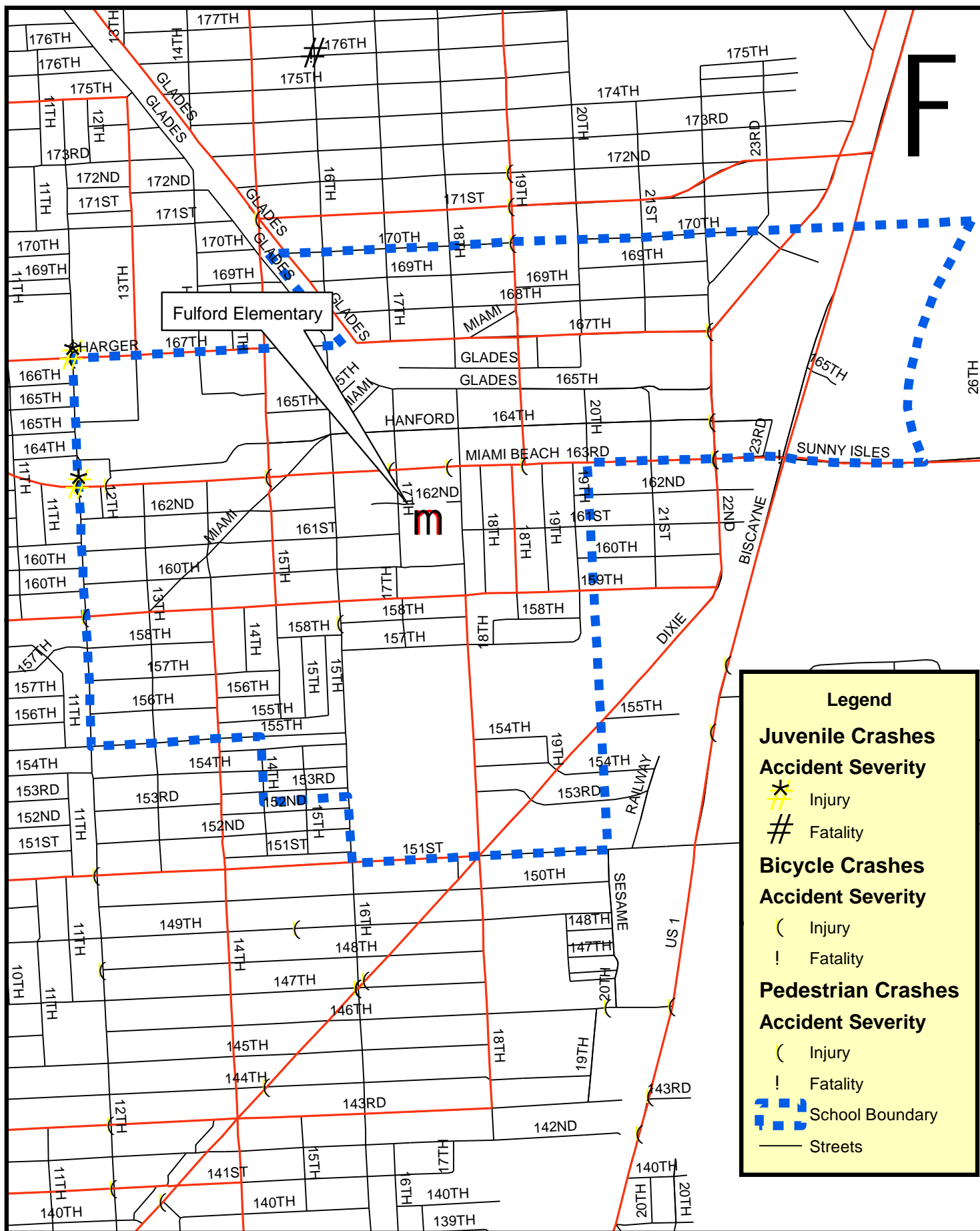
Appendix A – Maps of Pedestrian and Bicycle Crashes

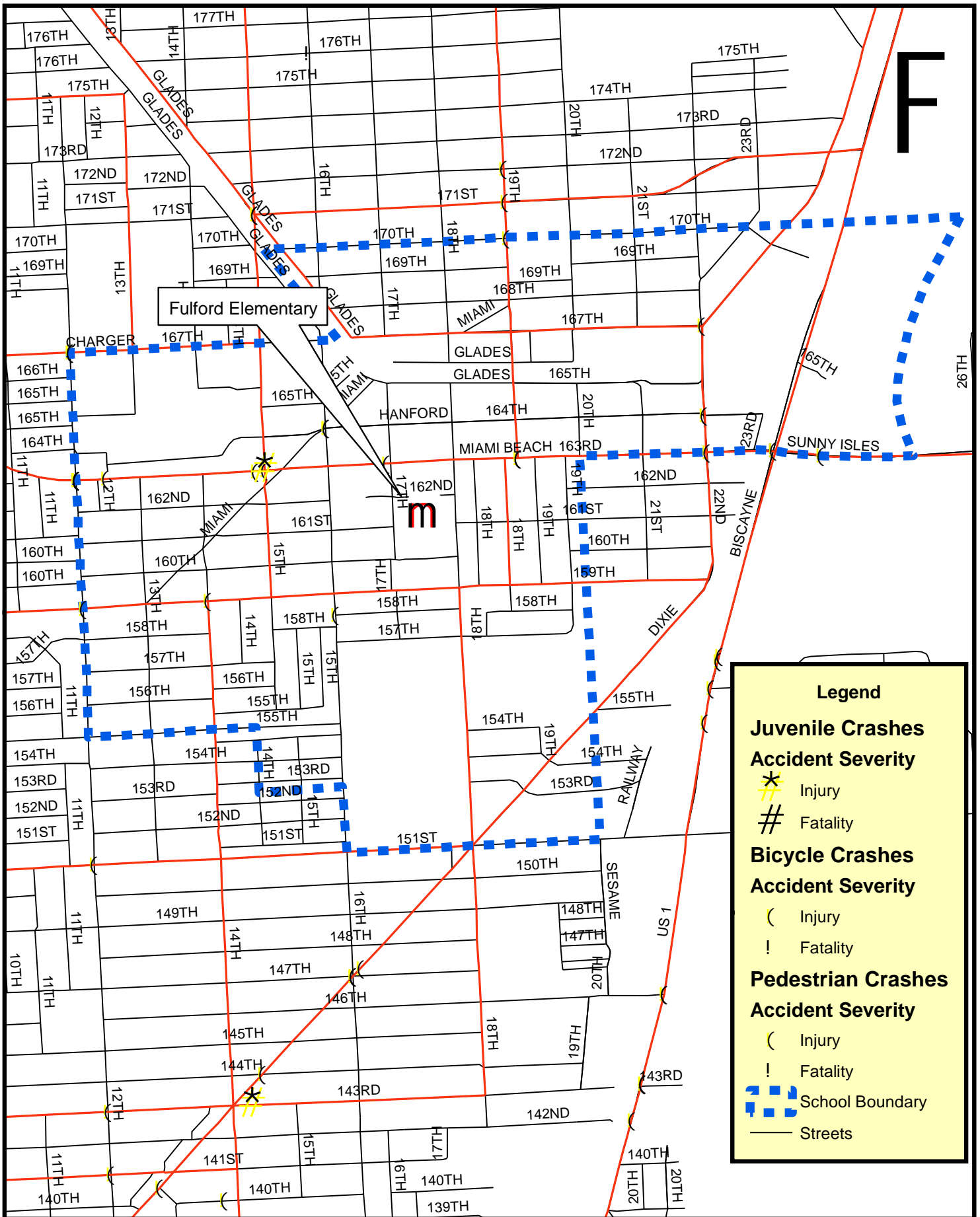
Appendix B – Land Use Map

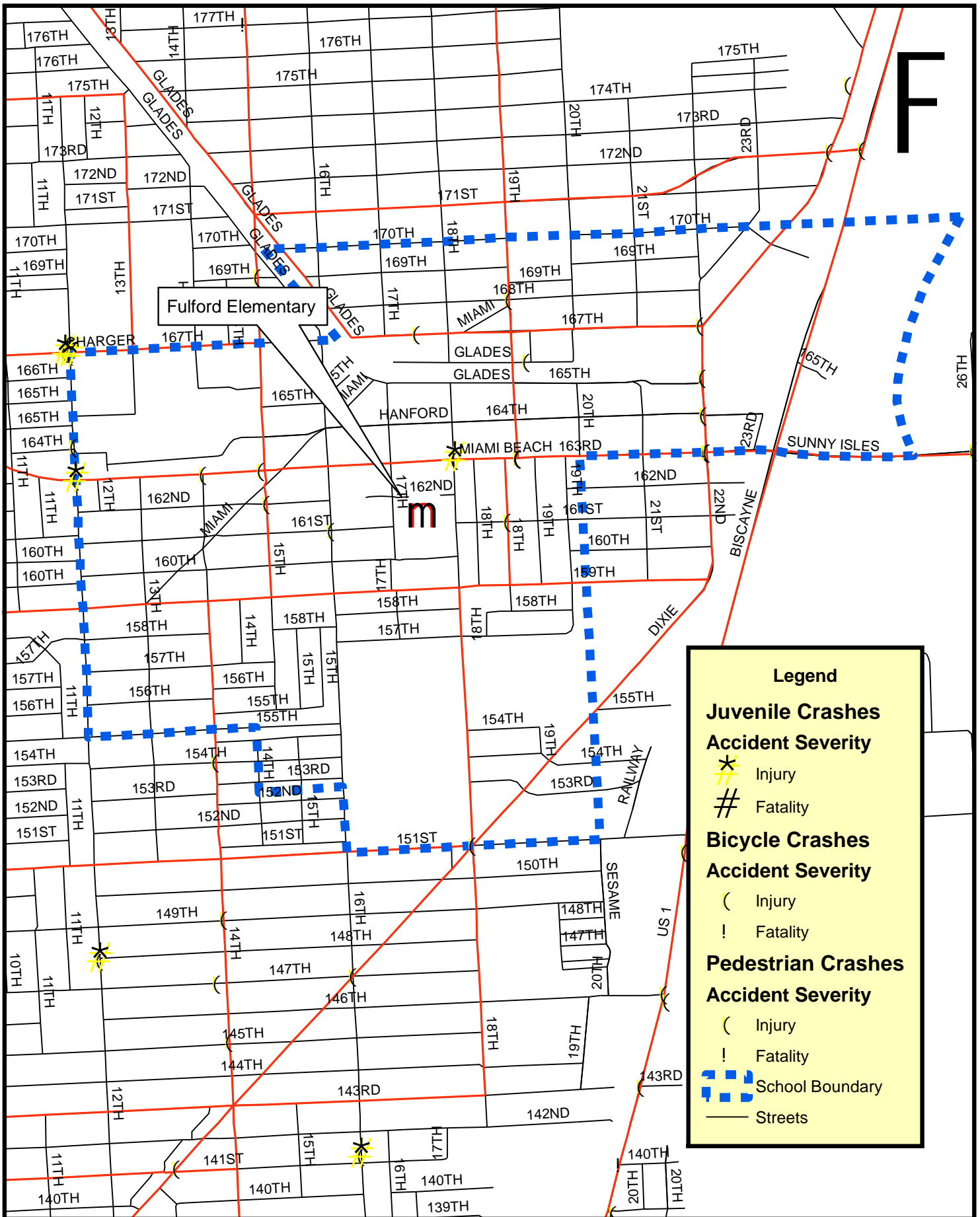
Appendix C – Existing Route Deficiencies



APPENDIX A
Maps of Pedestrian and Bicycle Crashes



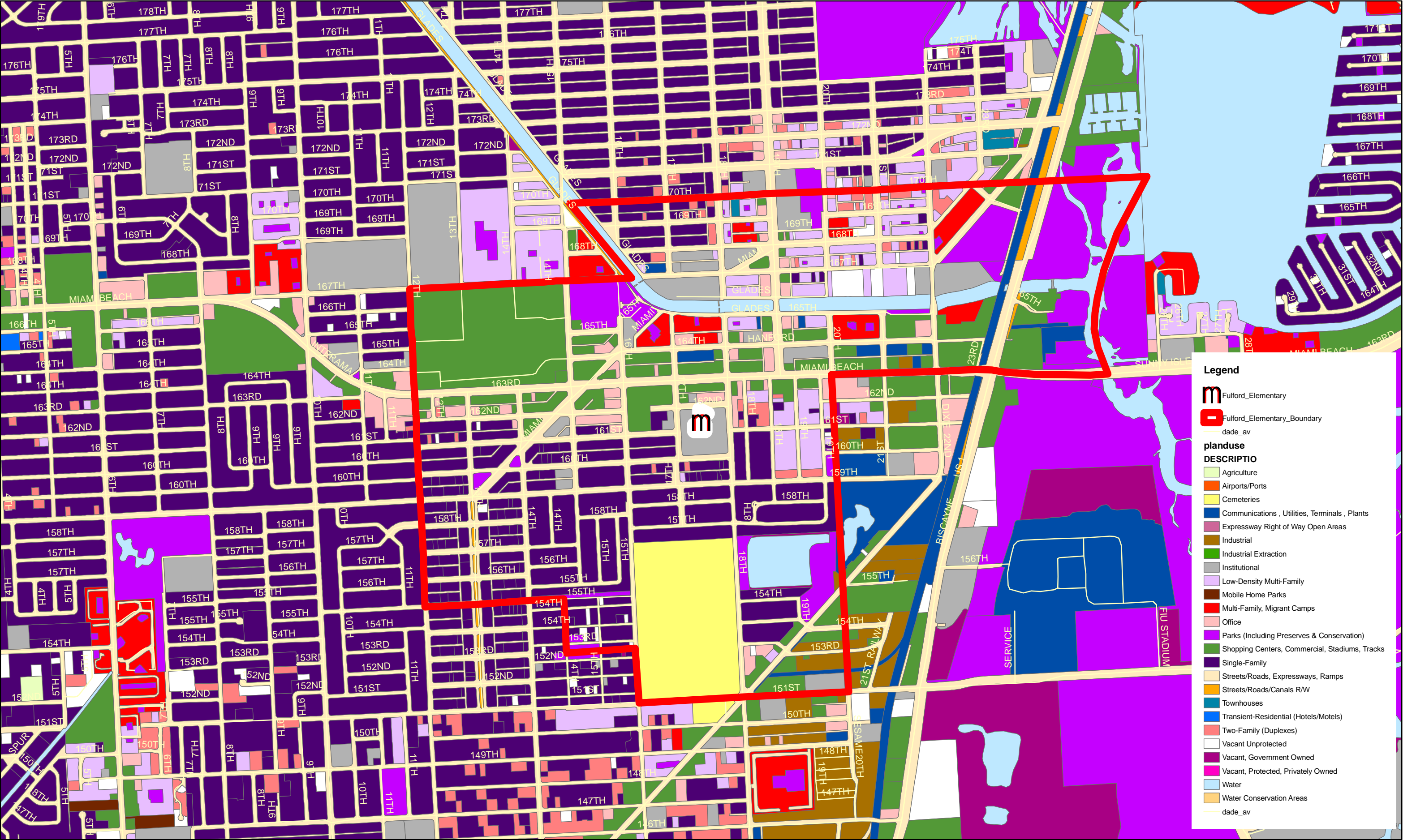




APPENDIX B

Land Use Map

Fulford Elementary



APPENDIX C

Existing Route Deficiencies

SAFE ROUTE TO SCHOOL PROJECT
Fulford Elementary
16140 NE 18 Avenue, North Miami Beach, FL 33161

Improvements Needed

From the Field:

Route- NE 19 Avenue (From NE 163rd St. to NE 170th St.)

- At SW 170 Street crosswalks are needed on the west side.

Route- NE 163 Street (From US 1 to NE 12 Avenue)

- No improvements are needed.

Route- NE 18 Avenue (From NE 159 St. to NE 163 St.)

- At 158 Street crosswalk is needed on the west side.
- At 157 Terrace crosswalk needed east side and west side

Route- NE 159 Street (From NE 12 Ave. to NE 20 Ave.)

- No improvements.

Route- NE 14 Avenue (From NE 163 St. to NE 155 St.)

- At 160 Street crosswalk is needed on the east and west side.
- At Miami Drive crosswalk is needed on the east and west side.

Route- NE 16 Avenue (From NE 153 St. to NE 167 St.)

- At NE 158 Street crosswalk is needed on the west side.
- At NE 157 Terrace crosswalk is needed on the east side.
- At NE 154 Terrace sidewalk is missing(App ? feet)
- At NE 158 Street sidewalk is missing about two blocks south.
- At NE 160 Street crosswalk is needed on the west side and east side.

DISTRICTWIDE TRAFFIC OPERATIONS STUDIES

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SAFE ROUTES TO SCHOOL

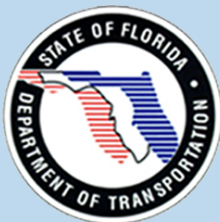
NORTH MIAMI ELEMENTARY SCHOOL

FINAL REPORT

Prepared for:

Florida Department of Transportation

District 6



Prepared by:

RS&H

Reynolds, Smith and Hills, Inc.

July 12, 2007

Safe Routes to School (SRTS) Pilot Project

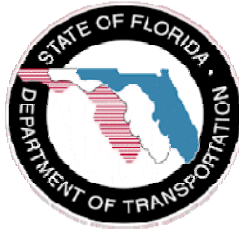
Financial Project No.: 25009313203

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FINAL REPORT for **North Miami Elementary School**

Prepared for:

Florida Department of Transportation



District 6

Prepared by:



REYNOLDS, SMITH & HILLS, INC.

July 11, 2007

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Appendix A – Maps of Pedestrian and Bicycle Crashes

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1. INTRODUCTION

Safe Routes to School (SRTS) is a federally funded program that was authorized in August 2005 by Section 1404 of the federal transportation act, SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). The program targets children in grades K-8 and was developed to meet the following objectives:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age, and
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Florida's SRTS program is managed through the Florida Department of Transportation (FDOT). In accordance with the program guidelines, the FDOT awards projects for SRTS funding following a district-wide competitive application process. The FDOT District 6 Office in consultation with Miami-Dade County Metropolitan Planning Organization (MPO), Miami-Dade County School Board and Miami-Dade Public Works Department identified North Miami Elementary School as a prospective candidate for SRTS funding. RS&H was retained by the District to assist in identifying infrastructure improvement needs and preparing the required application forms for the SRTS program. This report was prepared in support of the application for funding proposed infrastructure improvements at North Miami Elementary School for the SRTS program.

2. PROJECT SCHOOL DATA

The following information pertains to the project school.

Name: North Miami Elementary

Address: 655 NE 145th Street, North Miami, Fl 33161 (Figure 1 shows project location map)

Enrollment: 924 students (School year 2006 to 2007)

School Attendance Boundary: Attendance boundary is shown in Figure 1.

Estimated mode split for transportation to/from school (based on interviews with school officials):

- Walk/Ride = 60%
- Private Car = 38%
- Buses = 2%



3. CRASH HISTORY

Pedestrian and bicycle crashes reported throughout Miami-Dade County for the period 2002 through 2004 were obtained from the MPO. A GIS analysis was conducted using the crash data to identify pedestrian and bicycle crashes that were reported within the limits of the school attendance boundary (or 2 mile radius). The analysis identified fatal crashes, injury crashes and juvenile crashes. Appendix A shows plots of the crashes reported within the project limits. The crash data is summarized in Table 1.

The recommended SRTS for Henry M. Flagler Elementary are presented in Section 5 of the report. Table 2 contains crash details for pedestrian/bicycle collisions that were reported along the recommended SRTS. As shown in Table 2, NE 6 Avenue experienced a relatively high number of pedestrian crashes during the 3-year study period – 24 pedestrian crashes were reported including four juvenile crashes. A detailed research of the individual police crash reports would be required to identify probable causal factors for these pedestrian crashes and what, if any, specific engineering countermeasures may be considered to reduce these crashes. This research is beyond the limited scope of this SRTS project. Notwithstanding, based on the field reviews that were conducted for this study recommended improvements were developed to address roadway and traffic deficiencies that would enhance overall safety conditions for pedestrian and bicycle traffic using the proposed safe routes.

Table 1
Summary of Pedestrian and Bicycle Crashes
North Miami Elementary

| Road Name | Segment | | 2002 Ped & Bike Crashes | | | | | | 2003 Ped & Bike Crashes | | | | | | 2004 Ped & Bike Crashes | | | | | |
|---------------|---------------|---------------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|
| | | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | |
| | From | To | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries |
| NE 6 Avenue | NE 151 Street | NE 135 Street | 0 | 2 | 1 | 8 | 1 | 10 | 0 | 4 | 0 | 6 | 0 | 10 | 0 | 2 | 0 | 8 | 0 | 10 |
| NE 149 Street | NE 5 Avenue | NE 13 Avenue | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 10 Avenue | NE 151 Street | NE 135 Street | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 135 Street | NE 5 Avenue | NE 10 Avenue | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 3 |
| NE 12 Avenue | NE 153 Street | NE 139 Street | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| NE 143 Street | NE 5 Avenue | NE 12 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 147 Street | NE 12 Avenue | NE 145 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 145 Street | NE 5 Avenue | NE 12 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| NE 5 Avenue | NE 151 Street | NE 135 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | | | 0 | 2 | 1 | 21 | 1 | 23 | 0 | 6 | 0 | 10 | 0 | 16 | 0 | 0 | 0 | 13 | 0 | 17 |

Note: 1. Juveniles= children between the ages of 5-13 years
2. Others= children and adults greater than the age of 13 years

Table 2
Summary of Crashes Reported on Proposed Safe Routes
North Miami Elementary, 2002-2004

| CRASH DETAILS | | | | | | | |
|--|-------------|---------------|-------------|----------|----------------|-----------------|-------------------|
| Safe Route | Case Number | Date of Crash | Day of Week | Time | Pedestrian Age | Injury/Fatality | Location of Crash |
| NE 6 Avenue (From NE 151 Street to NE 139 Street) | 733768590 | 07/17/02 | Tue | 4:40 PM | 30 | Injury | NE 135 Street |
| | 733762170 | 04/25/02 | Wed | 12:45 PM | 18 | Injury | NE 140 Street |
| | 721491260 | 01/30/02 | Tue | 3:40 PM | 10 | Injury | NE 141 Street |
| | 733751240 | 07/27/02 | Fri | 9:20 PM | 14 | Injury | 14175 NE 6 Avenue |
| | 721498540 | 03/15/02 | Thu | 6:35 PM | 71 | Injury | NE 142 Street |
| | 733753200 | 06/29/02 | Fri | 11:15 PM | 30 | Injury | NE 143 Street |
| | 733756900 | 07/16/02 | Mon | 3:00 PM | 12 | Injury | NE 145 Street |
| | 720490770 | 03/16/02 | Fri | 7:15 PM | 27 | Injury | NE 147 Street |
| | 712601950 | 11/16/02 | Fri | 2:13 PM | 43 | Injury | NE 149 Street |
| | 720710380 | 08/30/02 | Thu | 4:02 PM | 16 | Injury | NE 150 Street |
| | 721729980 | 07/15/02 | Sun | 10:35 PM | 60 | Injury | NE 150 Street |
| | 705135400 | 04/01/03 | Mon | 10:49 AM | 9 | Injury | NE 150 Street |
| | 705134880 | 10/19/03 | Sat | 10:52 AM | 16 | Injury | NE 150 Street |
| | 705145410 | 06/13/03 | Thu | 7:50 AM | 36 | Injury | NE 149 Street |
| | 732876360 | 12/14/03 | Sat | 12:15 PM | 17 | Injury | NE 147 Street |
| | 733785320 | 01/17/03 | Thu | 6:57 AM | 19 | Injury | NE 145 Street |
| | 733797810 | 06/25/03 | Tue | 7:05 AM | 5 | Injury | NE 144 Street |
| | 733792050 | 07/11/03 | Thu | 7:45 AM | 40 | Injury | NE 141 Street |
| | 721720130 | 12/09/04 | Wed | 5:50 AM | 37 | Injury | NE 150 Street |
| | 720162680 | 02/27/04 | Thu | 1:57 PM | 30 | Injury | 15001 NE 6 Avenue |
| | 732855630 | 05/29/04 | Fri | 9:29 PM | 29 | Injury | NE 149 Street |
| | 728633560 | 02/11/04 | Tue | 7:00 PM | 33 | Injury | NE 149 Street |
| | 737789490 | 07/16/04 | Thu | 3:30 PM | 10 | Injury | NE 143 Street |
| | 737776090 | 05/26/04 | Tue | 3:30 PM | 24 | Injury | NE 143 Street |
| NE 147 Street (From NE 12 Avenue to NE 145 Street) | 737794830 | 03/25/04 | Wed | 6:55 PM | 17 | Injury | NE 8 Avenue |
| NE 143 Street (From NE 12 Avenue to NE 6 Avenue) | 721491430 | 04/17/02 | Tue | 7:28 AM | 61 | Injury | NE 10 Avenue |
| | 721488250 | 01/29/02 | Mon | 8:40 AM | 16 | Injury | NE 12 Avenue |
| NE 145 Street (From NE 12 Avenue to NE 6 Avenue) | 737769450 | 05/26/04 | Tue | 2:19 PM | 10 | Injury | NE 6 Avenue |

Note: Juvenile crashes are highlighted in gray.

4. DEVELOPMENT OF SRTS

SRTS for North Miami Elementary School were developed based on guidelines contained in the Safe Routes to School, Procedure Manual developed by Miami-Dade County, MPO September 2005. Several additional reference sources also provided guidance in developing safe routes for the project school. Notable among these were:

- National Center for Safe Routes to School: <http://www.saferouteroutesinfo.org/>
- Federal Highway Safe Routes to School: <http://safety.fhwa.dot.gov/saferoutes/>

Preliminary SRTS were initially developed for the project school based on reviews of several engineering factors. These included:

- School attendance boundary
- Aerial photographs
- Land use data (see Appendix B)
- Frequency/severity of juvenile pedestrian and bicycle crashes
- Roadway characteristics (sidewalks, medians, buffers, etc.)
- Speed limits
- Traffic volumes
- Location of traffic control devices
- Driveway density
- Location of canals and railroad crossings

Meetings were subsequently held with the school principal and other key staff members to further develop and refine the proposed SR2S. Input was also gained from the Parent Teachers Association (PTA) and the project steering committee that included representatives from the MPO, the School Board and the Public Works Department.

During the meeting with the school's administrative staff it was mentioned that due to the construction of a new elementary school in the area the attendance boundary of North Miami Elementary would be changing for the start of the next school year. The proposed change in school attendance boundary was also confirmed by Miami-Dade County Public Schools. The SRTS was therefore developed to be consistent with the anticipated new school boundary.

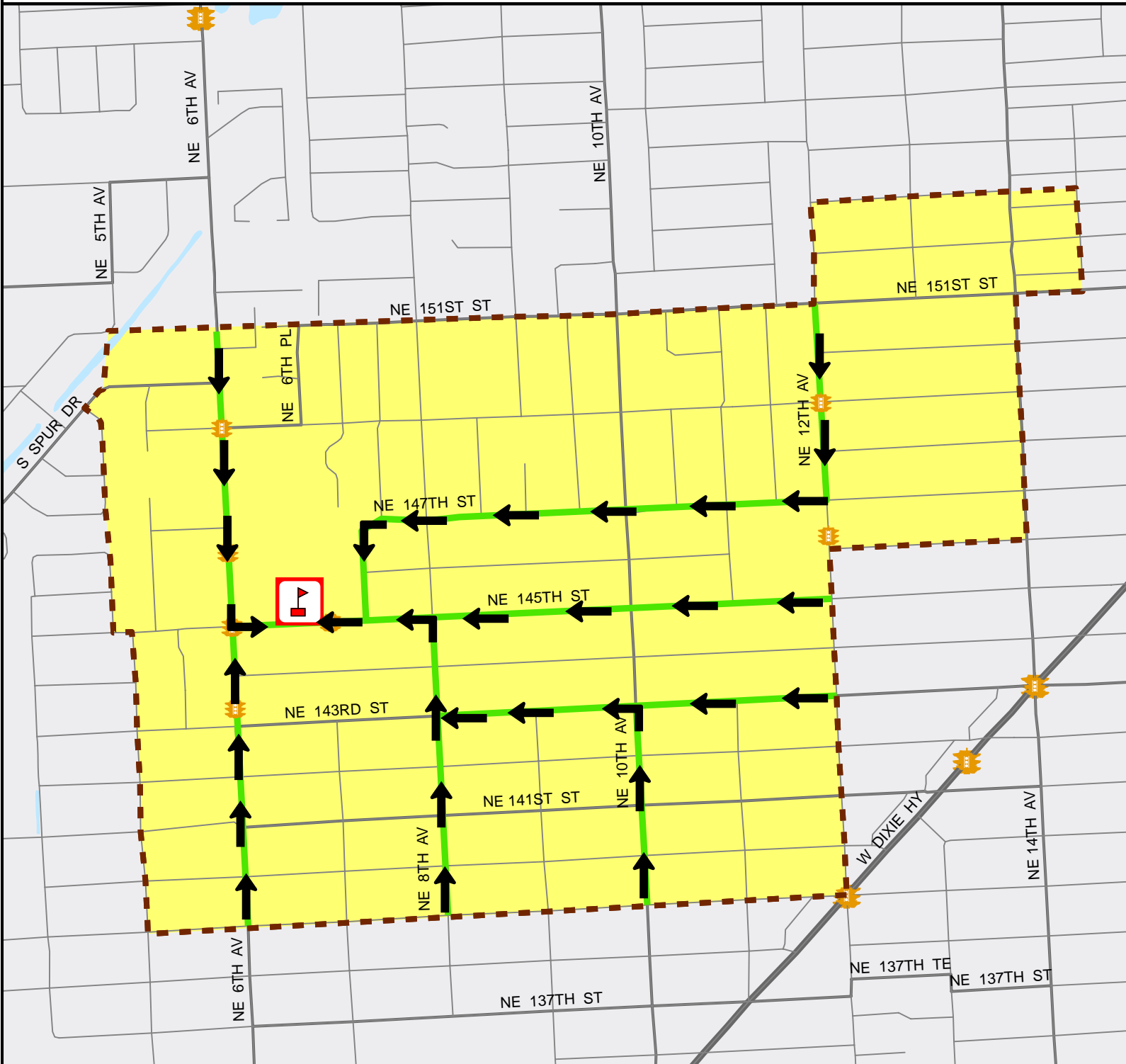
5. RECOMMENDED SRTS

Following the process described in Section 4, the recommended SRTS was developed for North Miami Elementary School. The map on the following page shows the recommended SRTS. Table 3 shows pertinent roadway and traffic characteristics for the road segments along the recommended SRTS.












655 NE 145th Street, North Miami 33161

SAFE ROUTES TO SCHOOL



LEGEND

| | | | | | | | |
|---|------------|---|----------|---|---------------------|---|-----------------|
|  | School |  | Streets |  | Attendance Boundary |  | Traffic Signals |
|  | Safe Route |  | Highways |  | Water |  | Fire |
| | | | | | |  | Police |

0 700 1,400
Feet

N

Table 3
North Miami Elementary
Existing Roadway and Traffic Characteristics for SRTS Segments

| Road | Segment | | Facility Type | Speed Limit | AADT ¹ | Ped & Bike Crashes ² |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|-------------------|---------------------------------|
| | From | To | | | | |
| NE 6 th Avenue | NE 151 st Street | NE 139 th Street | State Road (Minor Arterial) | 40 mph | Moderate | 31 |
| NE 145 th Street | NE 12 th Avenue | NE 6 th Avenue | City Local Street | 35 mph | Low | 1 |
| NE 12 th Avenue | NE 151 st Street | NE 147 th Street | City Collector | 35 mph | Moderate | 7 |
| NE 147 th Street | NE 12 th Avenue | NE 145 th Street | City Local Street | 35 mph | Low | 1 |
| NE 8 th Avenue | NE 139 th Street | NE 145 th Street | City Local Street | 35 mph | Low | 0 |
| NE 143 rd Street | NE 12 th Avenue | NE 6 th Avenue | City Local Street | 35 mph | Low | 1 |

Notes:

1. For road segments where AADT data was not readily available, traffic volume is assessed as light, moderate or heavy based on field observed conditions.
2. Total pedestrian and bicycle crashes for 2002 - 2004

6. FIELD REVIEW

Field reviews for North Miami Elementary School were conducted on May 25, 2007. The primary deficiencies that were identified along the proposed routes were missing sidewalk, crosswalks, and school zone signage. A list of the comprehensive deficiencies observed can be found in Appendix C.

7. RECOMMENDED IMPROVEMENTS AND COST ESTIMATES

Based on field reviews that were conducted along the SRTS (Section 5), recommended infrastructure improvements were developed to encourage and enhance safety for children walking or bicycling to/from school. The recommended infrastructure improvements were limited to eligible projects specified in Florida's SRTS Application Guidelines. Table 4 shows a listing of recommended infrastructure improvement projects along the safe route segments. Table 4 also includes cost estimates for the improvements. The cost estimates were developed based on FDOT's average unit cost rates for projects implemented in District 6 region. The total cost for infrastructure improvements was estimated at \$85,732.12.



Table 4
North Miami Elementary School
SRTS Infrastructure Improvements

| Road Segment | Recommended Improvements | Length (ft) | Unit Cost | Unit | Total |
|---|---|-------------|------------|------|-------------|
| NE 6 Avenue (From NE 151 Street To NE 139 Street) | - Install crosswalk at NE 147 Street - west side | 30 | \$2.00 | ft | \$60.00 |
| | - Install pedestrian countdown signals | 8 | \$1,428.51 | ea | \$11,428.08 |
| | - Install flourescent yellow green pedestrian sign | 4 | \$244.41 | ea | \$977.64 |
| NE 145 Street (From NE 12 Avenue To NE 6 Avenue) | - Install 4" sidewalk extension at NE 8 Avenue - southwest corner | 10 | \$49.70 | sy | \$331.33 |
| | - Install crosswalk at NE 10 Avenue - north and south side | 70 | \$2.00 | ft | \$140.00 |
| | - Install crosswalk at NE 11 Avenue - north side | 45 | \$2.00 | ft | \$60.00 |
| | - Install flourescent yellow green pedestrian sign | 4 | \$244.41 | ea | \$977.64 |
| NE 12 Avenue (From NE 151 Street To NE 147 Street) | - Install crosswalk at NE 148 Street - east side | 35 | \$2.00 | ft | \$70.00 |
| | - Install sidewalk between NE 148 Street and NE 149 Street-east side | 277 | \$49.70 | sy | \$9,177.93 |
| NE 147 Street (From NE 12 Avenue To NE 145 Street) | - Install crosswalk at NE 11 Avenue - south side | 60 | \$2.00 | ft | \$80.00 |
| | - Install crosswalk at NE 10 Court - north side | 36 | \$2.00 | ft | \$48.00 |
| | - Install 4" sidewalk between NE 9 Avenue and NE 10 Avenue | 314 | \$49.70 | sy | \$15,605.80 |
| | - Install crosswalk at NE 9 Court - north side | 32 | \$2.00 | ft | \$64.00 |
| | - Install crosswalk at NE 8 Court - north side | 38 | \$2.00 | ft | \$1,026.00 |
| | - Install 4" sidewalk between NE 8 Avenue and NE 8 Court | 230 | \$49.70 | sy | \$11,431.00 |
| | - Install crosswalk at NE 8 Avenue - north and south side | 46 | \$2.00 | ft | \$61.33 |
| | - Install 4" sidewalk extension at NE 8 Avenue - north and south side | 45 | \$49.70 | sy | \$1,491.00 |
| | - Install 4" sidewalk extension at NE 7 Court - northwest corner | 6 | \$49.70 | sy | \$298.20 |
| | - Install crosswalk at NE 7 Court- north side | 40 | \$2.00 | ft | \$80.00 |
| NE 8 Avenue (From NE 139 Street To NE 145 Street) | - Install crosswalk at NE 139 Street- east and west side | 80 | \$2.00 | ft | \$160.00 |
| | - Install 4" sidewalk extension at NE 139 Street - northwest corner | 10 | \$49.70 | sy | \$331.33 |
| | - Install crosswalk at NE 140 Street- east and west side | 62 | \$2.00 | ft | \$124.00 |
| | - Install 4" sidewalk extension at NE 140 Street - northwest and southwest corner | 20 | \$49.70 | sy | \$994.00 |
| | - Install crosswalk at NE 141 Street- east and west side | 72 | \$2.00 | ft | \$96.00 |
| | - Install crosswalk at NE 142 Street- east and west side | 80 | \$2.00 | ft | \$106.67 |
| | - Install crosswalk at NE 143 Street- east and west side | 80 | \$2.00 | ft | \$106.67 |
| | - Install crosswalk at NE 144 Street- east and west side | 85 | \$2.00 | ft | \$113.33 |
| | - Install 4" sidewalk extension at NE 144 Street - northwest and southwest corner | 25 | \$49.70 | sy | \$828.33 |
| | - Install 4" sidewalk extension at NE 145 Street - southwest corner | 10 | \$49.70 | sy | \$331.33 |
| NE 143 Street (From NE 12 Avenue To NE 6 Avenue) | - Install crosswalk at NE 9 Avenue- south side | 32 | \$2.00 | ft | \$64.00 |
| | - Install crosswalk at NE 11 Avenue- south side | 30 | \$2.00 | ft | \$60.00 |
| | - Install crosswalk at NE 10 Avenue- south and north side | 70 | \$2.00 | ft | \$140.00 |
| | - Install 4" sidewalk extension at NE 10 Avenue- all four corners | 88 | \$49.70 | sy | \$4,373.60 |
| Prelimiary Total Cost | | | | | \$61,237.23 |
| Contingencies (20%) | | | | | \$12,247.45 |
| Mobilization (10%) | | | | | \$6,123.72 |
| Maintence of Traffic (10%) | | | | | \$6,123.72 |
| Grand Total Cost | | | | | \$85,732.12 |

LIST OF APPENDICES

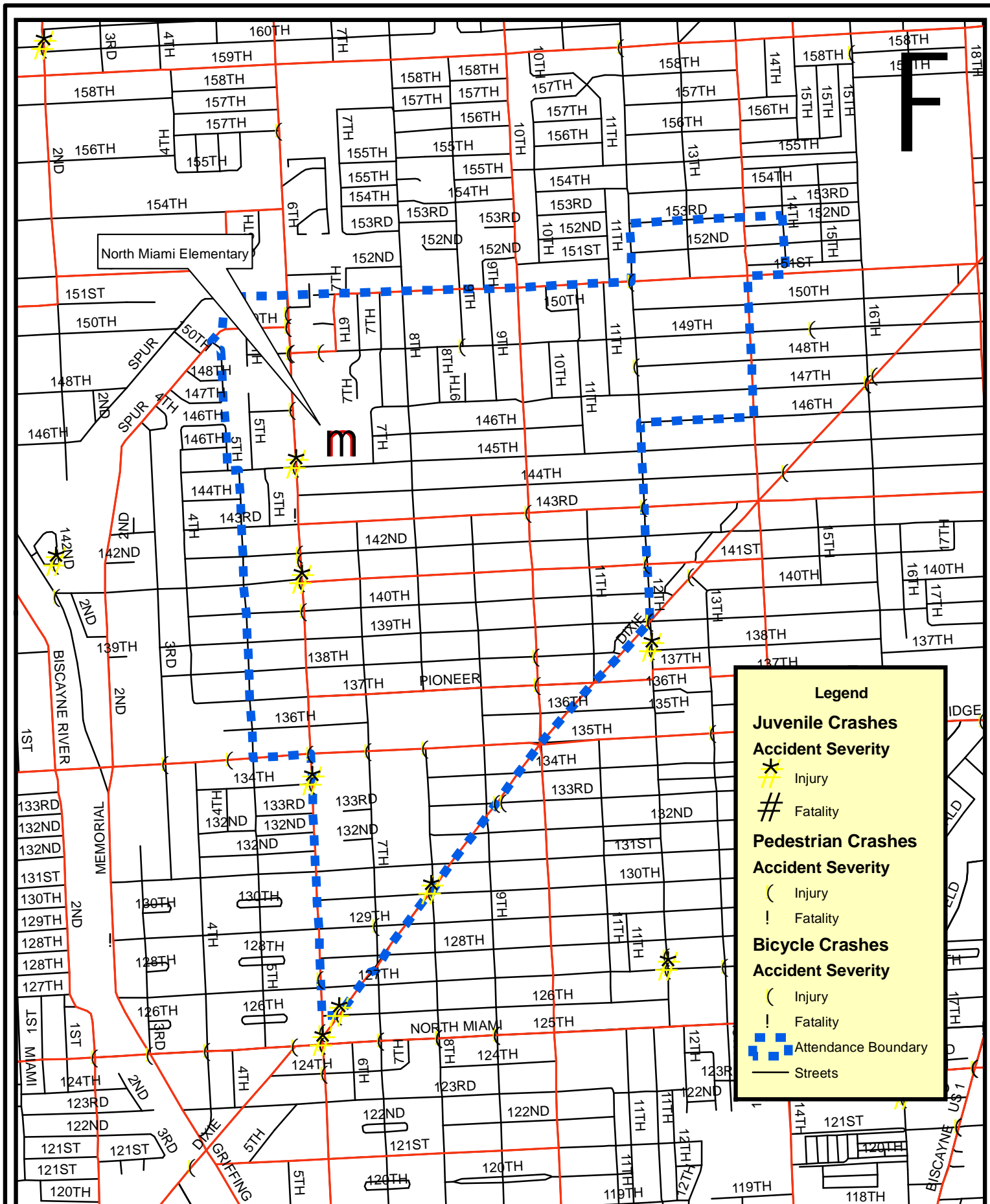
Appendix A – Maps of Pedestrian and Bicycle Crashes

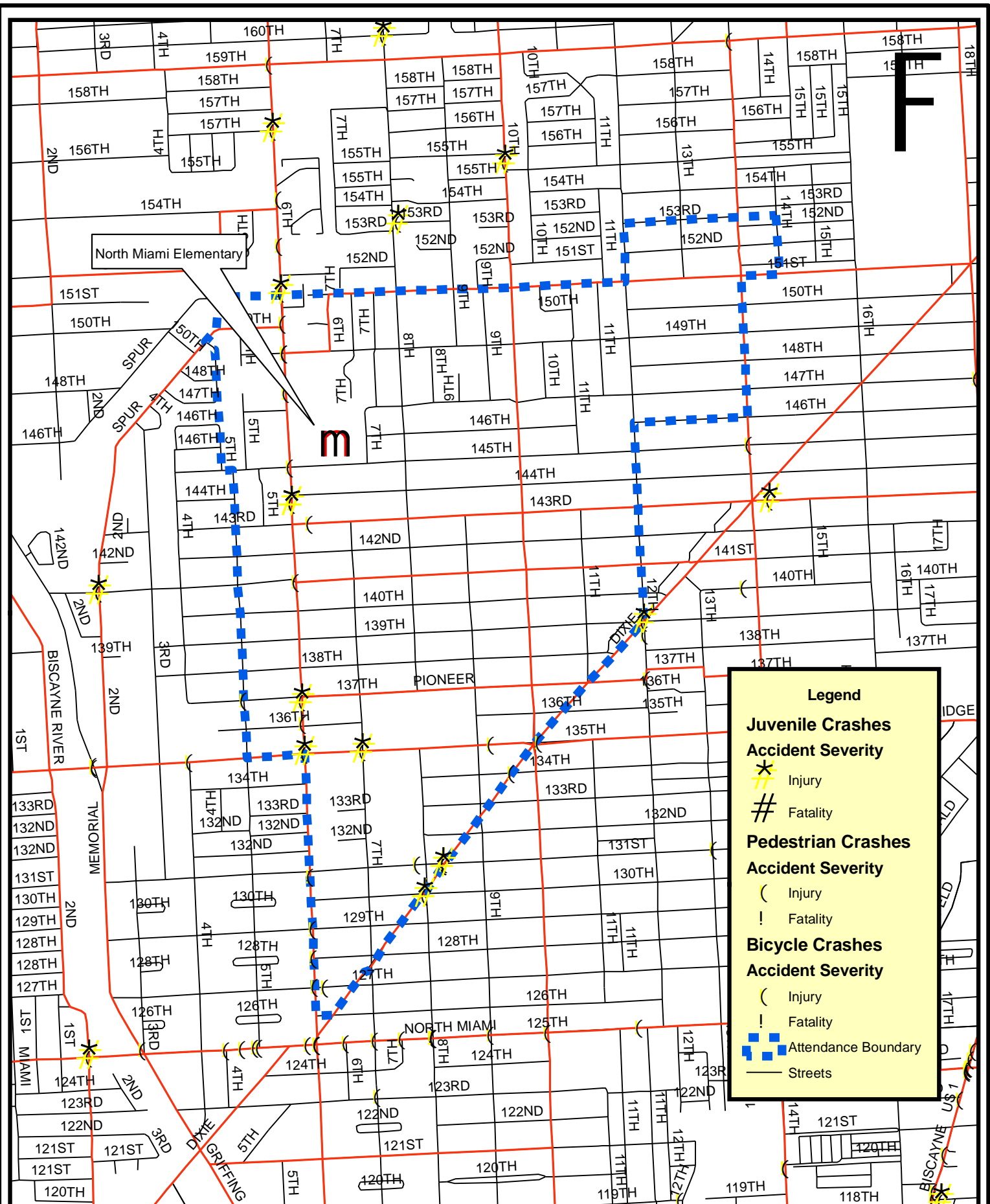
Appendix B – Land Use Map

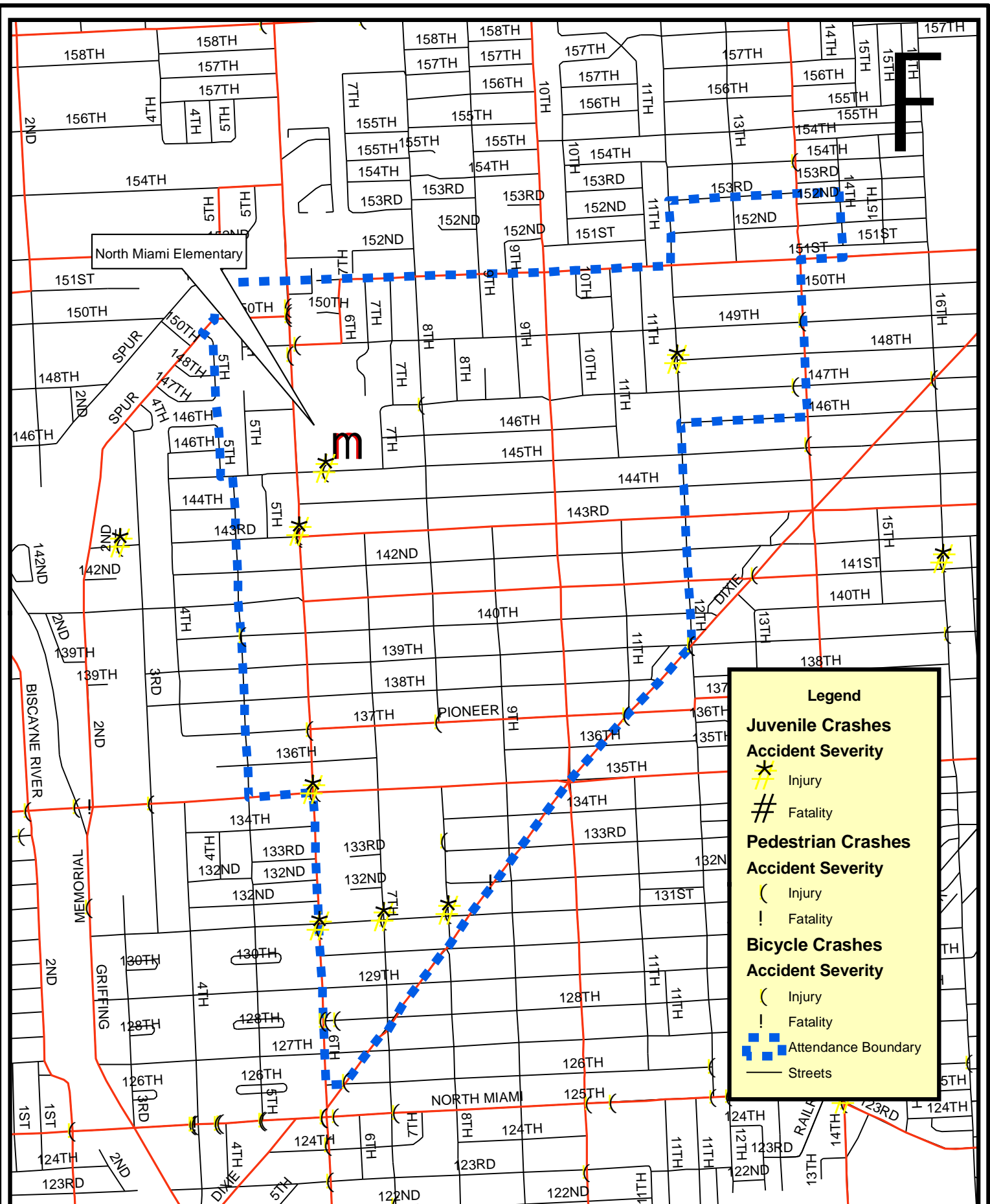
Appendix C – Existing Route Deficiencies



APPENDIX A
Maps of Pedestrian and Bicycle Crashes



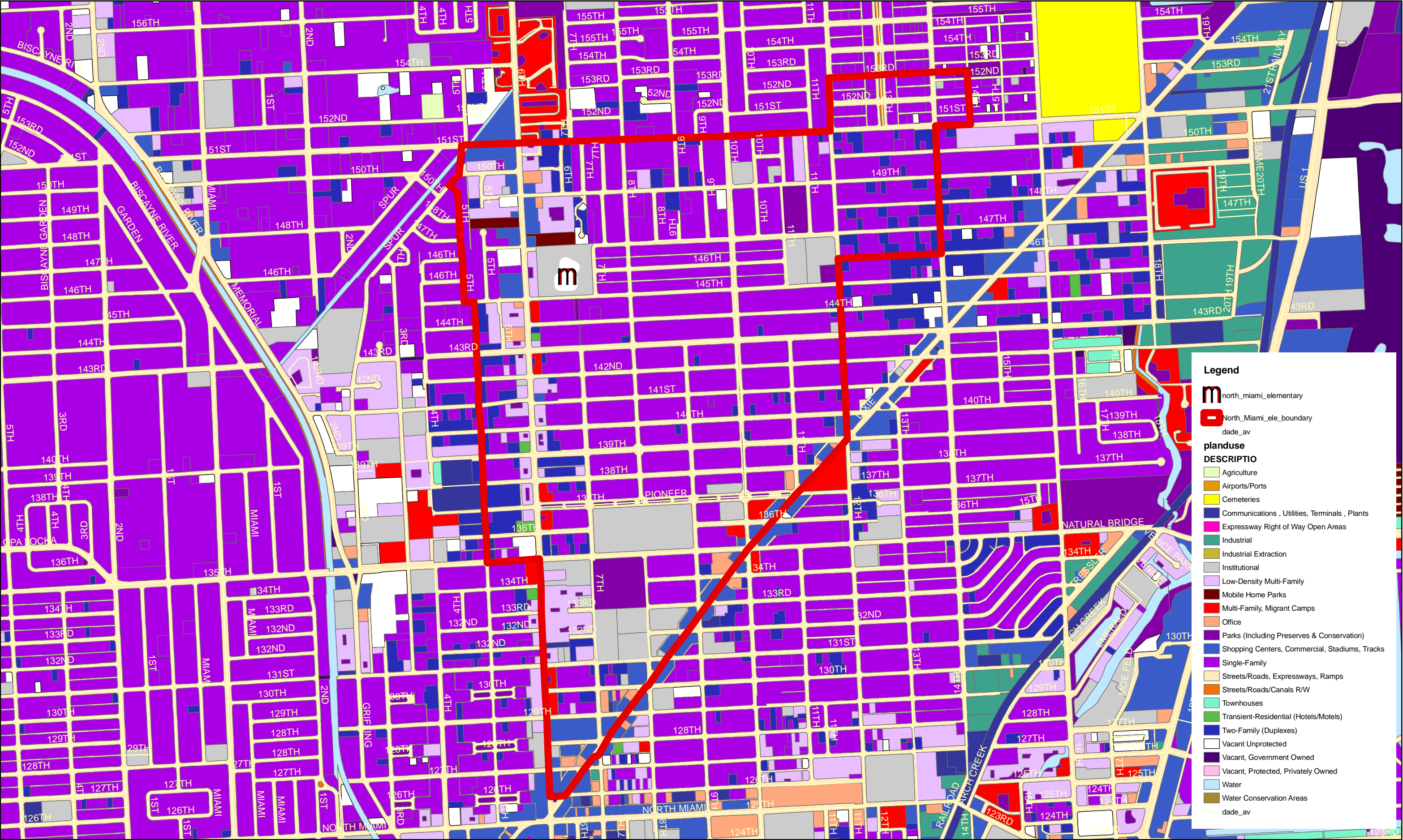




APPENDIX B

Land Use Map

North Miami Elementary



APPENDIX C

Existing Route Deficiencies

SAFE ROUTE TO SCHOOL PROJECT

North Miami Elementary
655 NE 145 Street, North Miami, Fl. 33161

Improvements Needed

From the Field:

Route- NE 6 Avenue (From NE 139 St. to NE 151 St.)

- At NE 147 Street crosswalk is missing on the west side.

Route- NE 145 Street (From NE 6 Ave. to NE 12 Ave.)

- At 8 Avenue in the southwest corner sidewalk is needed.
- At 10 Avenue crosswalk is needed on the north and south leg.
- At 11 Avenue crosswalk is needed on the north side.

Route- NE 12 Avenue (From NE 147 St. to NE 151 St.)

- At NE 148 Street crosswalk is missing on the east side.
- From 148 Street to 149 Street sidewalk is missing on the east side.

Route- NE 147 Street (From NE 12 Ave. to NE 145 St.)

- At 11 Avenue crosswalk is needed on the south side.
- At 10 Court crosswalk is needed on the north side.
- From 9 Avenue to 10 Avenue sidewalk is missing.
- At NE 9 Court crosswalk needed on the north side.
- At NE 9 Avenue crosswalk is needed on the north side.
- At NE 8 Court crosswalk is needed on the north side.
- Between NE 8 Avenue and NE 8 Court sidewalk is missing.
- At 8 Avenue crosswalk and sidewalk extension is needed on the north side and south side.
- At NE 7th Court sidewalk extension is needed on the northwest corner and crosswalk is missing on the north side.

Route- NE 10 Avenue (From NE 139 Street to NE 143 Street)

- No improvements are needed.

Route- NE 8 Avenue (From NE 139 St. to NE 145 St.)

- At NE 139 Street crosswalk is needed on the east and west side and sidewalk extension needed on the northwest corner.

- At NE 140 Street crosswalk needed on the east and west side and sidewalk extension needed on the northwest and southwest corner.
- At NE 141 Street crosswalk needed on the east and west side and sidewalk extension needed on the northwest and southwest corner.
- At NE 142 Street crosswalk needed on the east and west side and sidewalk extension needed on the northwest and southwest corner.
- At NE 145 Street sidewalk extension is needed on the southwest corner.
- At NE 144 Street crosswalk is needed on the east and west side and sidewalk extension is needed on the southwest and northwest corner.
- At NE 143 Street crosswalk is needed on the east and west side and sidewalk extension is needed on the southwest and northwest corner.

Route- NE 143 Street (From NE 6 Avenue to NE 12 Avenue)

- At NE 9 Avenue crosswalk needed on the south side.
- At NE 11 Avenue crosswalk is needed on the south side.
- At NE 10 Avenue sidewalk extension is needed at all four corners and crosswalk is needed on the north and south side.

DISTRICTWIDE TRAFFIC OPERATIONS STUDIES

FM NO. 250093-1-32-03

TWO NO. 26

SAFE ROUTES TO SCHOOL

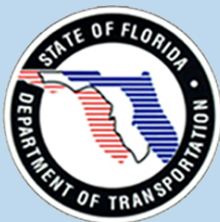
RIVERSIDE ELEMENTARY SCHOOL

FINAL REPORT

Prepared for:

Florida Department of Transportation

District 6



Prepared by:

RS&H

Reynolds, Smith and Hills, Inc.

July 12, 2007

Safe Routes to School (SRTS) Pilot Project

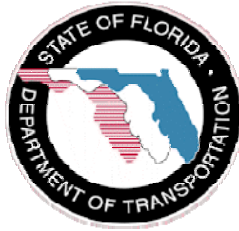
Financial Project No.: 25009313203

Task Work Order No.: 26

FINAL REPORT for **Riverside Elementary School**

Prepared for:

Florida Department of Transportation



District 6

Prepared by:



REYNOLDS, SMITH & HILLS, INC.

July 11, 2007

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Appendix A – Maps of Pedestrian and Bicycle Crashes

Appendix B – Land Use Map

Appendix C – Existing Route Deficiencies



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1. INTRODUCTION

Safe Routes to School (SRTS) is a federally funded program that was authorized in August 2005 by Section 1404 of the federal transportation act, SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). The program targets children in grades K-8 and was developed to meet the following objectives:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age, and
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Florida's SRTS program is managed through the Florida Department of Transportation (FDOT). In accordance with the program guidelines, the FDOT awards projects for SRTS funding following a district-wide competitive application process. The FDOT District 6 Office in consultation with Miami-Dade County Metropolitan Planning Organization (MPO), Miami-Dade County School Board and Miami-Dade Public Works Department identified Riverside Elementary School as a prospective candidate for SRTS funding. RS&H was retained by the District to assist in identifying infrastructure improvement needs and preparing the required application forms for the SRTS program. This report was prepared in support of the application for funding proposed infrastructure improvements at Riverside Elementary School for the SRTS program.

2. PROJECT SCHOOL DATA

The following information pertains to the project school.

Name: Riverside Elementary

Address: 1190 SW 2nd Street, Miami, Fl 33130 (Figure 1 shows project location map)

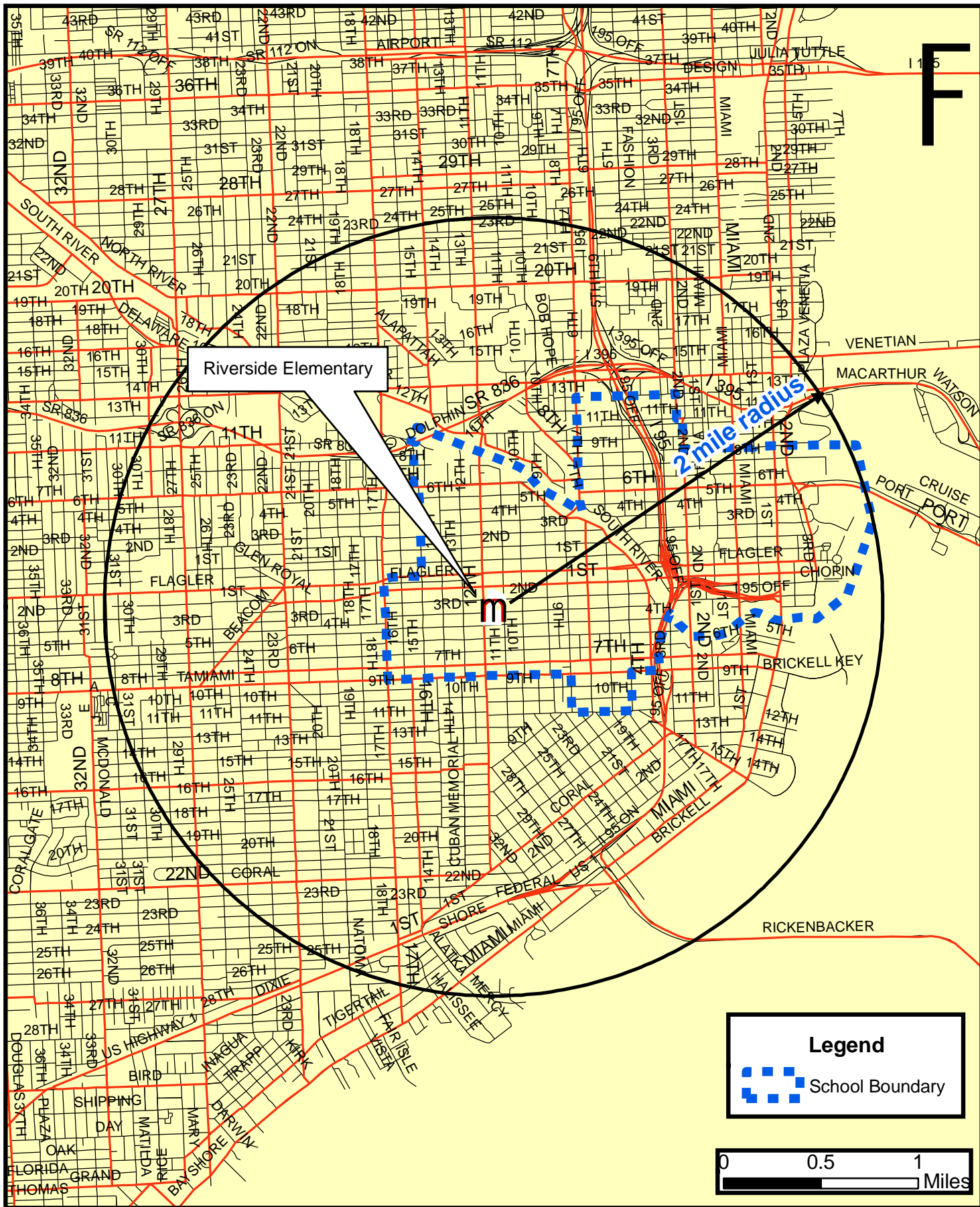
Enrollment: 975 students (School year 2006 to 2007)

School Attendance Boundary: Attendance boundary is shown in Figure 1.

Estimated mode split for transportation to/from school (based on interviews with school officials):

- Walk/Ride = Not Available
- Private Car = Not Available
- Buses = Not Available





3. CRASH HISTORY

Pedestrian and bicycle crashes reported throughout Miami-Dade County for the period 2002 through 2004 were obtained from the MPO. A GIS analysis was conducted using the crash data to identify pedestrian and bicycle crashes that were reported within the limits of the school attendance boundary (or 2 mile radius). The analysis identified fatal crashes, injury crashes and juvenile crashes. Appendix A shows plots of the crashes reported within the project limits. The crash data is summarized in Table 1.

The recommended SRTS for Riverside Elementary are presented in Section 5 of the report. Table 2 contains crash details for pedestrian/bicycle collisions that were reported along the recommended SRTS. As shown in Table 2, a relatively high number of pedestrian crashes were reported along NW 13 Avenue (9 crashes with 1 fatality); NW 12 Avenue (11 crashes including 1 juvenile crash); and SW 8 Avenue (7 crashes). A detailed research of the individual police crash reports would be required to identify probable causal factors for these pedestrian crashes and what, if any, specific engineering countermeasures may be considered to reduce these crashes. This research is beyond the limited scope of this SRTS project. Notwithstanding, based on the field reviews that were conducted for this study recommended improvements were developed to address roadway and traffic deficiencies that would enhance overall safety conditions for pedestrian and bicycle traffic using the proposed safe routes.

4. DEVELOPMENT OF SRTS

SRTS for Riverside Elementary School were developed based on guidelines contained in the Safe Routes to School, Procedure Manual developed by Miami-Dade County, MPO September 2005. Several additional reference sources also provided guidance in developing safe routes for the project school. Notable among these were:

- National Center for Safe Routes to School: <http://www.saferouteroutesinfo.org/>
- Federal Highway Safe Routes to School: <http://safety.fhwa.dot.gov/saferoutes/>

Preliminary SRTS were initially developed for the project school based on reviews of several engineering factors. These included:

- School attendance boundary
- Aerial photographs
- Land use data (see Appendix B)
- Frequency/severity of juvenile pedestrian and bicycle crashes
- Roadway characteristics (sidewalks, medians, buffers, etc.)
- Speed limits
- Traffic volumes
- Location of traffic control devices
- Driveway density
- Location of canals and railroad crossings



Table 1
Summary of Pedestrian and Bicycle Crashes
Riverside Elementary

| Road Name | Segment | | 2002 Ped & Bike Crashes | | | | | | 2003 Ped & Bike Crashes | | | | | | 2004 Ped & Bike Crashes | | | | | |
|-----------------|----------------|----------------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|
| | | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | |
| | From | To | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries |
| SW 17 Avenue | Flagler Street | Sw 8 Street | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 5 | 0 | 5 |
| SW 16 Avenue | SW 8 Street | Flagler Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 1 |
| SW 15 Avenue | SW 8 Street | NW 7 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 |
| SW 14 Avenue | SW 8 Street | NW 7 Street | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW 13 Avenue | SW 8 Street | NW 7 Street | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 1 | 2 | 1 | 2 |
| SW 12 Avenue | South River Dr | SW 8 Street | 0 | 0 | 1 | 7 | 1 | 7 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 1 | 0 | 8 | 0 | 9 |
| SW 11 Avenue | SW 8 Street | NW 7 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 3 |
| NW 10 Avenue | SW 8 Street | NW 7 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 |
| NW 9 Avenue | SW 8 Street | NW 5 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 3 |
| NW 8 Avenue | SW 8 Street | NW 4 Street | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 1 | 5 | 1 | 5 |
| NW 7 Avenue | SW 11 Street | NW 13 Street | 0 | 2 | 0 | 3 | 0 | 5 | 0 | 1 | 0 | 7 | 0 | 8 | 0 | 0 | 0 | 5 | 0 | 5 |
| NW 6 Avenue | SW 11 Street | NW 9 Street | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 |
| NW 5 Avenue | SW 8 Street | NW 13 Street | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 3 |
| NW 4 Avenue | SW 8 Street | NW 9 Street | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 2 |
| NW 3 Avenue | Flagler Street | NW 13 Street | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 4 |
| NW 2 Avenue | SW 6 Street | NW 11 Street | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 3 |
| NW 1 Avenue | Flagler Street | NW 9 Street | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| N. Miami Avenue | SW 4 Street | NW 9 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 1 Avenue | SW 4 Street | NW 9 Street | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 3 |
| NE 2 Avenue | SW 4 Street | NW 9 Street | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 1 | 4 | 1 | 4 | 0 | 1 | 0 | 2 | 0 | 3 |
| Biscayne Blvd | SW 3 Street | NW 6 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 3 |
| NE 3 Avenue | SW 4 Street | Flagler Street | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Flagler Street | Biscayne Blvd | NW 17 Avenue | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 4 |
| SW 8 Street | I-95 | NW 17 Avenue | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| SW 6 Street | NW 17 Avenue | NW 2 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| SW 4 Street | NW 17 Avenue | NW 3 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| SW 3 Street | SW 4 Avenue | NW 17 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| NW 5 Street | SW 14 Avenue | Biscayne Blvd | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW 2 Street | NW 17 Avenue | Biscayne Blvd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 1 |
| SW 1 Street | Biscayne Blvd | NW 17 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| NW 1 Street | NW 15 Avenue | Biscayne Blvd | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| NW 2 Street | NW 15 Avenue | Biscayne Blvd | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 |
| NW 4 Street | NW 15 Avenue | Biscayne Blvd | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 |
| NW 6 Street | NW 15 Avenue | Biscayne Blvd | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NW 7 Street | NW 17 Avenue | Biscayne Blvd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 |
| NW 8 Street | NW 7 Avenue | Biscayne Blvd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | | 0 | 4 | 1 | 69 | 1 | 73 | 0 | 2 | 2 | 83 | 2 | 96 | 0 | 9 | 2 | 72 | 2 | 81 |

Note: 1. Juveniles= children between the ages of 5-13 years
2. Others= children and adults greater than the age of 13 years

Table 2
Summary of Crashes Reported on Proposed Safe Routes
Riverside Elementary, 2002-2004

| Safe Route | Case Number | Date of Crash | Day of Week | Time | Pedestrian Age | Injury/Fatality | Location of Crash |
|---|-------------|---------------|-------------|----------|----------------|-----------------|-------------------|
| SW 2 Street (From South River Dr. to NW 10 Avenue) | 701871110 | 02/06/02 | Tue | 6:54 PM | 94 | Injury | SW 17 Avenue |
| | 705331540 | 11/04/02 | Sun | 2:05 PM | 6 | Injury | SW 7 Avenue |
| | 736706560 | 05/12/03 | Sun | 7:45 AM | UNK | Injury | SW 7 Avenue |
| SW 15 Avenue (From SW 2 Street to SW 7 Street) | 736710200 | 03/29/03 | Fri | 8:50 AM | 50 | Injury | SW 7 Street |
| NW 13 Avenue (From NW 7 Street to SW 2 Street) | 705955020 | 03/08/02 | Thu | 11:58 AM | 86 | Injury | Flagler Street |
| | 733545050 | 04/22/02 | Sun | 11:10 AM | 70 | Injury | SW 1 Street |
| | 738268910 | 09/01/03 | Sun | 4:40 PM | 69 | Injury | NW 7 Street |
| | 743013110 | 09/28/03 | Sat | 12:40 AM | 20 | Injury | NW 3 Street |
| | 723873090 | 11/11/03 | Mon | 1:30 PM | 80 | Injury | Flagler Street |
| | 721387940 | 07/26/03 | Fri | 11:25 AM | 73 | Injury | Flagler Street |
| | 743040640 | 10/06/03 | Sun | 12:26 PM | 75 | Injury | SW 1 Street |
| | 742848470 | 11/05/04 | Thu | 6:05 AM | 80 | Fatality | NW 7 Street |
| | 743192720 | 03/28/04 | Sat | 5:45 PM | 38 | Injury | Flagler Street |
| NW 10 Avenue (From NW 7 Street to SW 7 Street) | 705974720 | 07/14/02 | Sat | 4:08 PM | UNK | Injury | SW 5 Street |
| | 721397150 | 07/06/03 | Sat | 8:58 PM | 48 | Injury | Flagler Street |
| | 738294160 | 06/08/04 | Mon | 11:00 AM | 42 | Injury | SW 7 Street |
| | 743005660 | 02/16/04 | Sun | UNK | UNK | Injury | NW 1 Street |
| NW 12 Avenue (From SW 8 Street to SW 2 Street) | 733545140 | 06/11/02 | Mon | 2:27 PM | 82 | Injury | SW 8 Street |
| | 705341200 | 12/11/02 | Sat | 2:01 AM | 61 | Injury | SW 3 Street |
| | 743036670 | 08/02/03 | Fri | 11:05 PM | 58 | Injury | SW 3 Street |
| | 743002430 | 03/18/03 | Mon | 7:05 AM | UNK | Injury | SW 5 Street |
| | 733511390 | 01/21/03 | Mon | 8:15 AM | 30 | Injury | SW 7 Street |
| | 723721640 | 07/09/03 | Tue | 4:25 PM | 38 | Injury | 710 SW 12 Avenue |
| | 723714940 | 11/07/03 | Thu | 6:50 PM | 67 | Injury | SW 8 Street |
| | 743956260 | 06/21/04 | Sun | 8:35 PM | 44 | Injury | SW 3 Street |
| | 738278920 | 07/04/04 | Sat | 6:25 PM | 11 | Injury | SW 5 Street |
| | 738989370 | 03/18/04 | Wed | 6:00 PM | 41 | Injury | SW 6 Street |
| | 755141060 | 10/06/04 | Tue | 12:48 PM | 72 | Injury | SW 8 Street |
| SW 8 Avenue (From SW 11 Street to SW 2 Street) | 701895270 | 04/24/02 | Tue | 10:24 AM | 70 | Injury | SW 3 Street |
| | 736743420 | 10/17/03 | Thu | 4:50 PM | 41 | Injury | SW 3 Street |
| | 743907480 | 06/21/03 | Fri | 8:20 PM | 72 | Injury | SW 6 Street |
| | 701887540 | 11/08/03 | Fri | 11:12 PM | 43 | Injury | SW 7 Street |
| | 701893980 | 10/28/03 | Mon | 4:30 PM | 72 | Injury | SW 8 Street |
| | 723739110 | 07/17/04 | Fri | 5:40 PM | UNK | Injury | SW 4 Street |
| | 736744360 | 09/13/04 | Sun | 2:23 PM | 81 | Injury | SW 8 Street |
| NW 2 Street (From South River Dr. to NW 17 Avenue) | 701883400 | 03/24/02 | Sat | 3:25 AM | 26 | Injury | SW 8 Avenue |
| | 743005560 | 12/23/03 | Mon | 1:05 PM | 31 | Injury | 971 NW 2 Street |
| | 743199030 | 12/05/04 | Sat | 5:00 PM | 20 | Injury | NW 8 Avenue |

Note: Juvenile crashes are highlighted in gray.

5. RECOMMENDED SRTS

Following the process described in Section 4, the recommended SRTS was developed for Riverside Elementary School. The map on the following page shows the recommended SRTS. Table 3 shows pertinent roadway and traffic characteristics for the road segments along the recommended SRTS.

6. FIELD REVIEW

Field reviews for Riverside Elementary School were conducted on May 31, 2007. The primary deficiencies that were identified along the proposed safe routes were missing crosswalks, school zone signage, pedestrian heads, and missing and noncompliant ADA ramps. A list of the comprehensive deficiencies observed can be found in Appendix C.

7. RECOMMENDED IMPROVEMENTS AND COST ESTIMATES

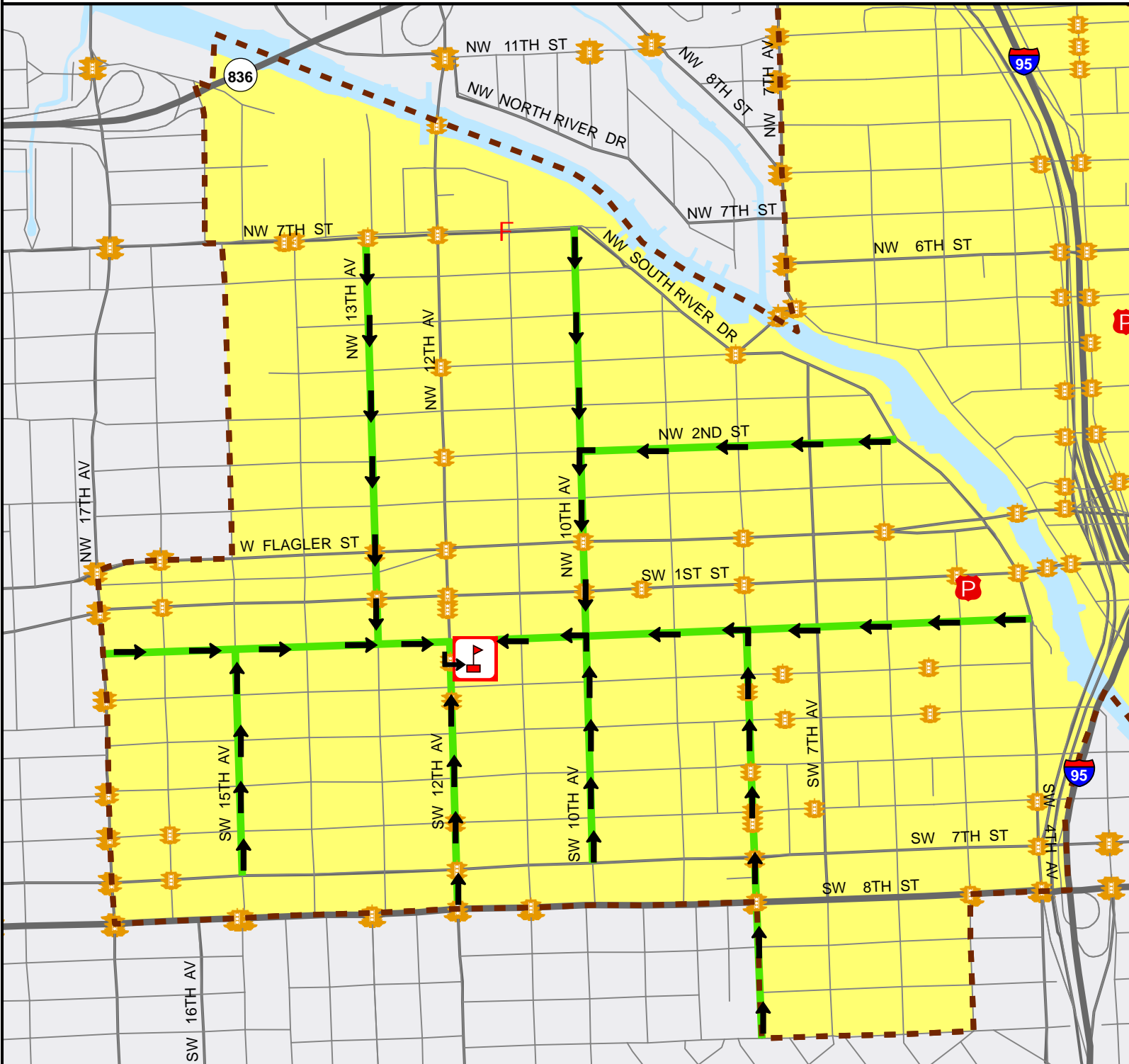
Based on the field reviews that were conducted along the SRTS (Section 5), recommended infrastructure improvements were developed to encourage and enhance safety for children walking or bicycling to/from school. The recommended infrastructure improvements were limited to eligible projects specified in Florida's SRTS Application Guidelines. Table 4 shows a listing of recommended infrastructure improvement projects along the safe route segments. Table 4 also includes cost estimates for the improvements. The cost estimates were developed based on FDOT's average unit cost rates for projects implemented in District 6 region. The total cost for infrastructure improvements was estimated at \$30,258.15.












RIVERSIDE ELEMENTARY SCHOOL

1190 SW 2nd Street, Miami 33130

SAFE ROUTES TO SCHOOL



LEGEND

- | | | | | | | | |
|--|------------|---|----------|---|---------------------|---|-----------------|
|  | School |  | Streets |  | Attendance Boundary |  | Traffic Signals |
|  | Safe Route |  | Highways |  | Water |  | Fire |
| | | | | | |  | Police |

0 750 1,500
Feet



Table 3
Riverside Elementary
Existing Roadway and Traffic Characteristics for SRTS Segments

| Road | Segment | | Facility Type | Speed Limit | AADT ¹ | Ped & Bike Crashes ² |
|----------------------------|----------------------------|----------------------------|-------------------|-------------|-------------------|---------------------------------|
| | From | To | | | | |
| NW 13 th Avenue | NW 7 th Street | NW 2 nd Street | City Local Street | 35 mph | Low | 11 |
| NW 10 th Avenue | NW 7 th Street | SW 7 th Street | City Local Street | 35 mph | Low | 4 |
| SW 8 th Avenue | SW 11 th Street | SW 2 nd Street | City Collector | 40 mph | Moderate | 9 |
| SW 2 nd Street | South River Drive | SW 17 th Avenue | City Local Street | 35 mph | Low | 4 |
| NW 2 nd Street | South River Drive | NW 10 th Avenue | City Local Street | 35 mph | Low | 9 |
| SW 15 th Avenue | SW 2 nd Street | SW 7 th Street | City Local Street | 35 mph | Low | 5 |

Notes:

1. For road segments where AADT data was not readily available, traffic volume is assessed as light, moderate or heavy based on fields observed conditions.
2. Total pedestrian and bicycle crashes for 2002 - 2004

Table 4
Riverside Elementary School
Cost Estimate for Recommended Improvements

| Road Segment | Recommended Improvements | Length (ft) | Unit Cost | Unit | Total |
|---|--|-------------|-----------|------|----------|
| NW 13 Avenue (From NW 7 Street To SW 2 Street) | - Install crosswalk at NW 5th Street- east and west side | 50 | \$2.00 | ft | \$100.00 |
| | - Install 4" sidewalk extension at NW 5th Street - west side | 12 | \$49.70 | sy | \$397.60 |
| | - Install crosswalk at NW 4th Street- east and west side | 72 | \$2.00 | ft | \$144.00 |
| | - Install crosswalk at NW 3rd Street- east and west side | 80 | \$2.00 | ft | \$160.00 |
| | - Install 4" sidewalk extension at NW 3rd Street - east and west sides | 16 | \$49.70 | sy | \$530.13 |
| | - Install crosswalk at NW 2nd Street- east and west side | 90 | \$2.00 | ft | \$180.00 |
| | - Install 4" sidewalk extension at NW 2nd Street - west side | 8 | \$49.70 | sy | \$265.07 |
| | - Install crosswalk at NW 1st Street- east and west side | 70 | \$2.00 | ft | \$140.00 |
| | - Install crosswalk at Flagler Street- east and west side | 70 | \$2.00 | ft | \$140.00 |
| | - Install crosswalk at SW 2nd Street- east and west side | 70 | \$2.00 | ft | \$140.00 |
| | - Install 4" sidewalk extension at SW 2nd Street - northwest, southwest, and northeast corners | 15 | \$49.70 | sy | \$497.00 |
| | - Install crosswalk at Flagler Terrace- east and west side | 60 | \$2.00 | ft | \$120.00 |
| | - Install 4" sidewalk extension at Flagler Terrace - all four corners | 20 | \$49.70 | sy | \$662.67 |
| NW 10 Avenue (From NW 7 Street To SW 7 Street) | - Install crosswalk at NW 6th Street- east and west side | 60 | \$2.00 | ft | \$120.00 |
| | - Install 4" sidewalk extension at NW 6th Street - all four corners | 20 | \$49.70 | sy | \$662.67 |
| | - Install crosswalk at NW 5th Street- east and west side | 50 | \$2.00 | ft | \$100.00 |
| | - Install 4" sidewalk extension at NW 5th Street - all four corners | 24 | \$49.70 | sy | \$795.20 |
| | - Install crosswalk at NW 4th Street- east and west side | 50 | \$2.00 | ft | \$100.00 |
| | - Install 4" sidewalk extension at NW 4th Street - all four corners | 24 | \$49.70 | sy | \$795.20 |
| | - Install crosswalk at NW 3rd Street- east and west side | 60 | \$2.00 | ft | \$120.00 |
| | - Install 4" sidewalk extension at NW 3rd Street - all four corners | 24 | \$49.70 | sy | \$795.20 |
| | - Install crosswalk at NW 2nd Street- east and west side | 100 | \$2.00 | ft | \$200.00 |
| | - Install 4" sidewalk extension at NW 2nd Street - all four corners | 24 | \$49.70 | sy | \$795.20 |
| | - Install crosswalk at NW 1st Street- east and west side | 60 | \$2.00 | ft | \$120.00 |
| | - Install 4" sidewalk extension at NW 1st Street - all four corners | 20 | \$49.70 | sy | \$662.67 |
| | - Install 4" sidewalk extension at Flagler Street- all four corners | 30 | \$49.70 | sy | \$994.00 |
| | - Install crosswalk at SW 2nd Street- east and west side | 80 | \$2.00 | ft | \$160.00 |
| | - Install 4" sidewalk extension at SW 2nd Street - northeast and southwest corners | 12 | \$49.70 | sy | \$397.60 |
| | - Install crosswalk at SW 3rd Street- east and west side | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at SW 4th Street- east and west side | 70 | \$2.00 | ft | \$140.00 |
| | - Install crosswalk at SW 5th Street- east and west side | 60 | \$2.00 | ft | \$120.00 |
| | - Install crosswalk at SW 6th Street- east and west side | 80 | \$2.00 | ft | \$160.00 |
| SW 8 Avenue (From SW 11 Street To SW 2 Street) | - Install crosswalk at SW 5th Street- east side | 30 | \$2.00 | ft | \$60.00 |
| | - Install crosswalk at SW 9th Street- east and west side | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at SW 10th Street- east side | 35 | \$2.00 | ft | \$70.00 |

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Appendix A – Maps of Pedestrian and Bicycle Crashes

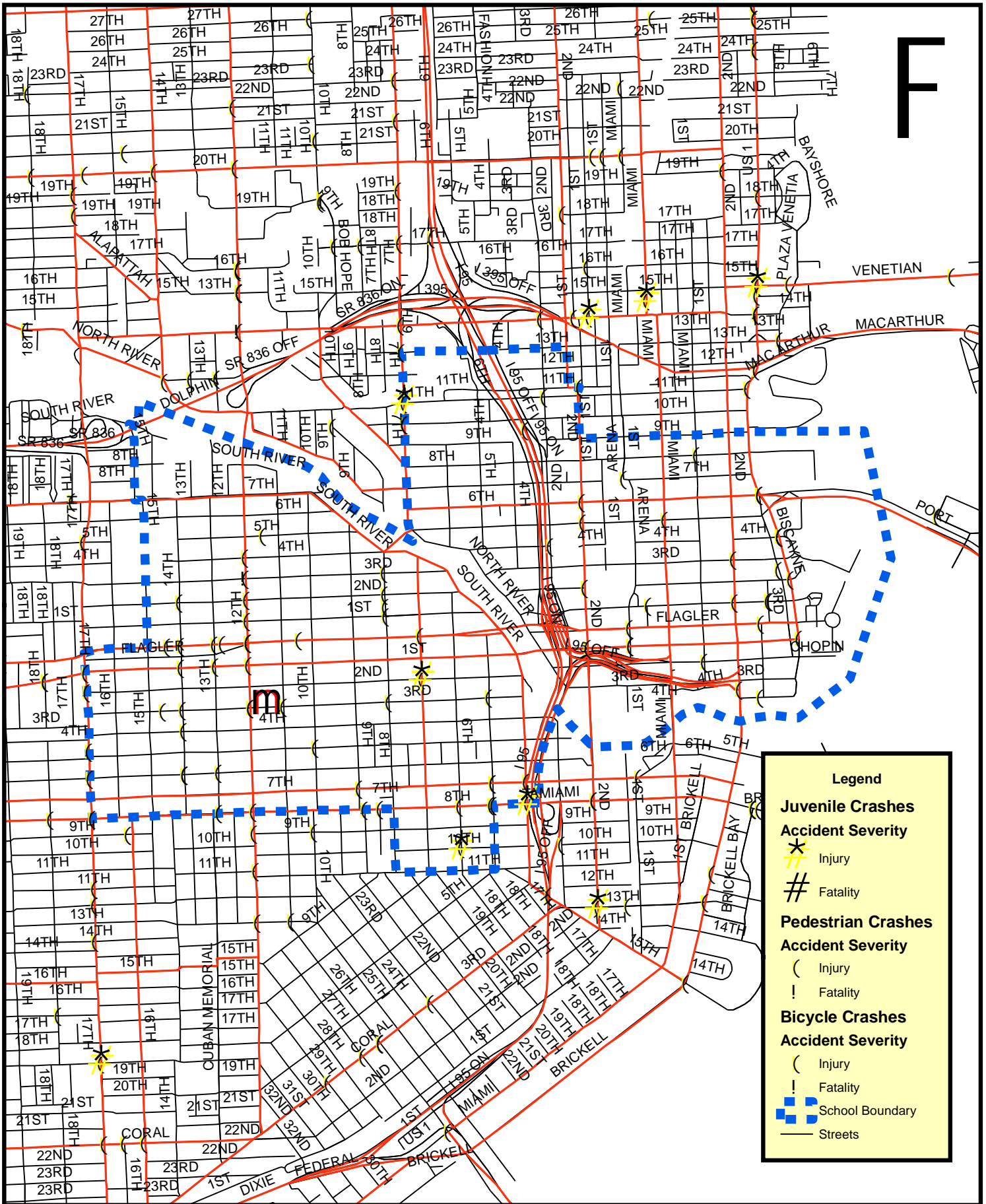
Appendix B – Land Use Map

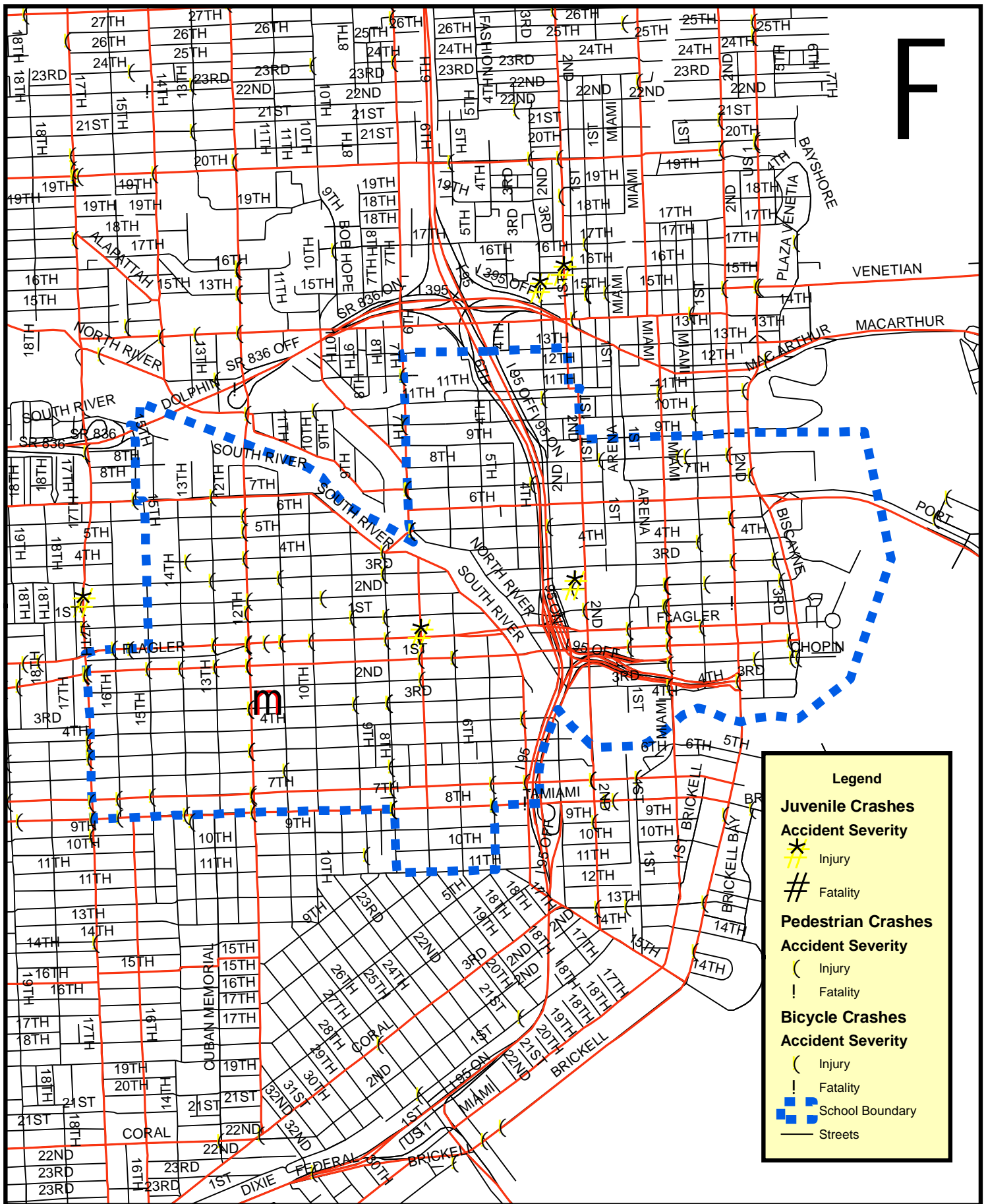
Appendix C – Existing Route Deficiencies



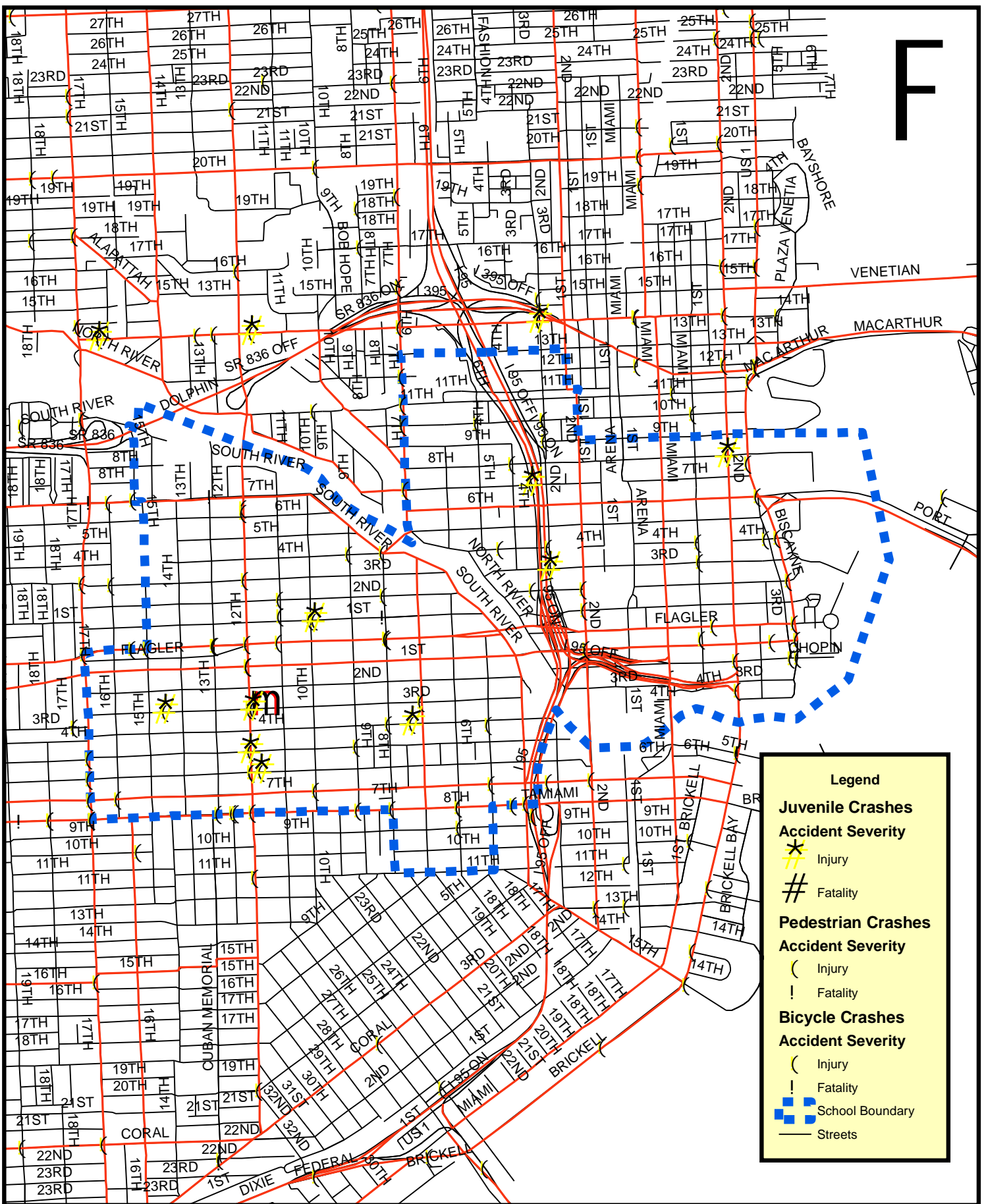
APPENDIX A
Maps of Pedestrian and Bicycle Crashes

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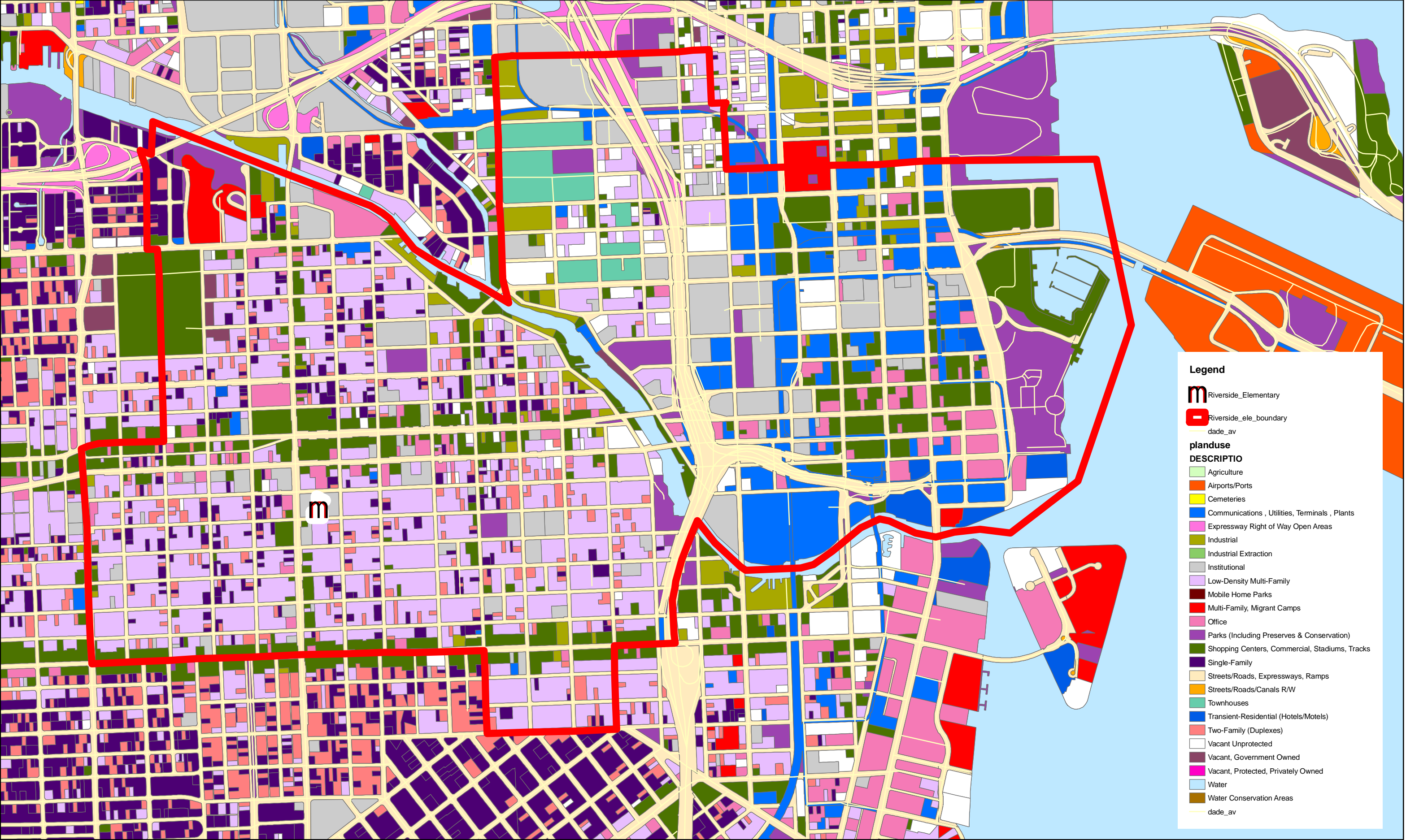
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APPENDIX B

Land Use Map

Riverside Elementary



APPENDIX C

Existing Route Deficiencies

SAFE ROUTE TO SCHOOL PROJECT

Riverside Elementary
1190 SW 2nd Street, Miami, FL 33130

Improvements Needed

From the Field:

Route- NW 13 Avenue (From NW 7 St. to SW 2 St.)

- At NW 5th Street crosswalk needed on the east and west side and ADA ramps needed on the west side.
- At NW 4th Street crosswalk needed on the east and west side.
- At NW 3rd Street crosswalk needed on the east and west side and ADA ramps needed on the east and west side.
- At NW 2nd Street crosswalk needed on the east and west side and ADA ramps needed on the west side.
- At NW 1st Street crosswalk needed on the east and west side.
- At Flagler Street crosswalk needed on the east and west side.
- At SW 2nd Street crosswalk needed on the east and west side and ADA ramps are needed on the NW, SW and NE corners.
- At Flagler Terrace crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.

Route- NW 10 Avenue (From NW 7th St. to SW 7th St.)

- At NW 6th Street crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.
- At NW 5th Street crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.
- At NW 4th Street crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.
- At NW 3rd Street crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.
- At NW 2nd Street crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.
- At NW 1st Street crosswalk is needed on the east and west side and ADA ramps are needed on all four corners.
- At Flagler Street ramps are needed on all four corners.
- At SW 2nd Street crosswalk is needed on the east and west side and ADA ramps are needed on the NE and SW corners.
- At SW 3rd Street crosswalk is needed on the east and west side.
- At SW 4th Street crosswalk is needed on the east and west side.
- At SW 5th Street crosswalk is needed on the east and west side.
- At SW 6th Street crosswalk is needed on the east and west side.

Route- SW 12 Avenue (From SW 8th Street to SW 2nd Street)

- No improvements.

Route- SW 8 Avenue (From SW 11 Street to SW 2nd Street)

- At SW 5th Street crosswalk is needed on the east side.
- At SW 9th Street crosswalk is needed on the east and west side.
- At SW 10th Street crosswalk is needed on the east side.

Route- NW 2nd Street (From South River Drive to NW 10th Avenue)

- At NW 6th Avenue crosswalk is needed on the south side.
- At NW 7th Avenue crosswalk is needed on the north and south side and ADA ramps needed on all four corners.
- At NW 8th Avenue crosswalk is needed on the north and south side.
- At NW 9th Avenue crosswalk is needed on the north and south side and ADA ramps needed on the NW, SW and SE corners.

Route- SW 2nd Street (From South River Drive to NW 17 Avenue)

- At SW 5th Avenue crosswalk is needed on the north and south side.
- At SW 6th Avenue crosswalk is needed on the north and south side.
- At SW 7th Avenue crosswalk is needed on the north and south side.
- At SW 8th Avenue crosswalk is needed on the north and south side.
- At SW 9th Avenue crosswalk is needed on the north and south side.
- At SW 10th Avenue crosswalk is needed on the north and south side.
- At SW 13th Avenue crosswalk is needed on the north and south side and ADA ramps are needed on all four corners.
- At SW 14th Avenue crosswalk is needed on the north and south side.
- At SW 15th Avenue crosswalk is needed on the north and south side and ADA ramps are needed on all four corners.
- At SW 16th Avenue crosswalk is needed on the north and south side and ADA ramps are needed on the SW and NE corners.

Route- SW 15th Avenue (From SW 2nd Street to SW 7th Street)

- At SW 5th Street crosswalk is needed on the east and west side.
- At SW 4th Street crosswalk is needed on the east and west side and ADA ramps are needed on the NE corners.
- At SW 3rd Street crosswalk is needed on the east and west side.

DISTRICTWIDE TRAFFIC OPERATIONS STUDIES

FM NO. 250093-1-32-03

TWO NO. 26

SAFE ROUTES TO SCHOOL

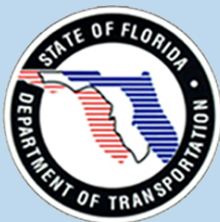
SOUTHSIDE ELEMENTARY SCHOOL

FINAL REPORT

Prepared for:

Florida Department of Transportation

District 6



Prepared by:

RS&H

Reynolds, Smith and Hills, Inc.

July 12, 2007

Safe Routes to School (SRTS) Pilot Project

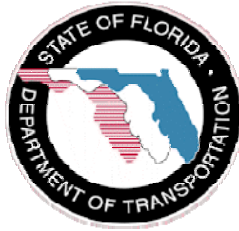
Financial Project No.: 25009313203

Task Work Order No.: 26

FINAL REPORT for **Southside Elementary School**

Prepared for:

Florida Department of Transportation



District 6

Prepared by:



REYNOLDS, SMITH & HILLS, INC.

July 11, 2007

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Appendix A – Maps of Pedestrian and Bicycle Crashes

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Appendix C – Existing Route Deficiencies



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1. INTRODUCTION

Safe Routes to School (SRTS) is a federally funded program that was authorized in August 2005 by Section 1404 of the federal transportation act, SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). The program targets children in grades K-8 and was developed to meet the following objectives:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age, and
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Florida's SRTS program is managed through the Florida Department of Transportation (FDOT). In accordance with the program guidelines, the FDOT awards projects for SRTS funding following a district-wide competitive application process. The FDOT District 6 Office in consultation with Miami-Dade County Metropolitan Planning Organization (MPO), Miami-Dade County School Board and Miami-Dade Public Works Department identified Southside Elementary School as a prospective candidate for SRTS funding. RS&H was retained by the District to assist in identifying infrastructure improvement needs and preparing the required application forms for the SRTS program. This report was prepared in support of the application for funding proposed infrastructure improvements at Southside Elementary School for the SRTS program.

2. PROJECT SCHOOL DATA

The following information pertains to the project school.

Name: Southside Elementary

Address: 45 SW 13th Street, Miami, FL 33130 (Figure 1 shows project location map)

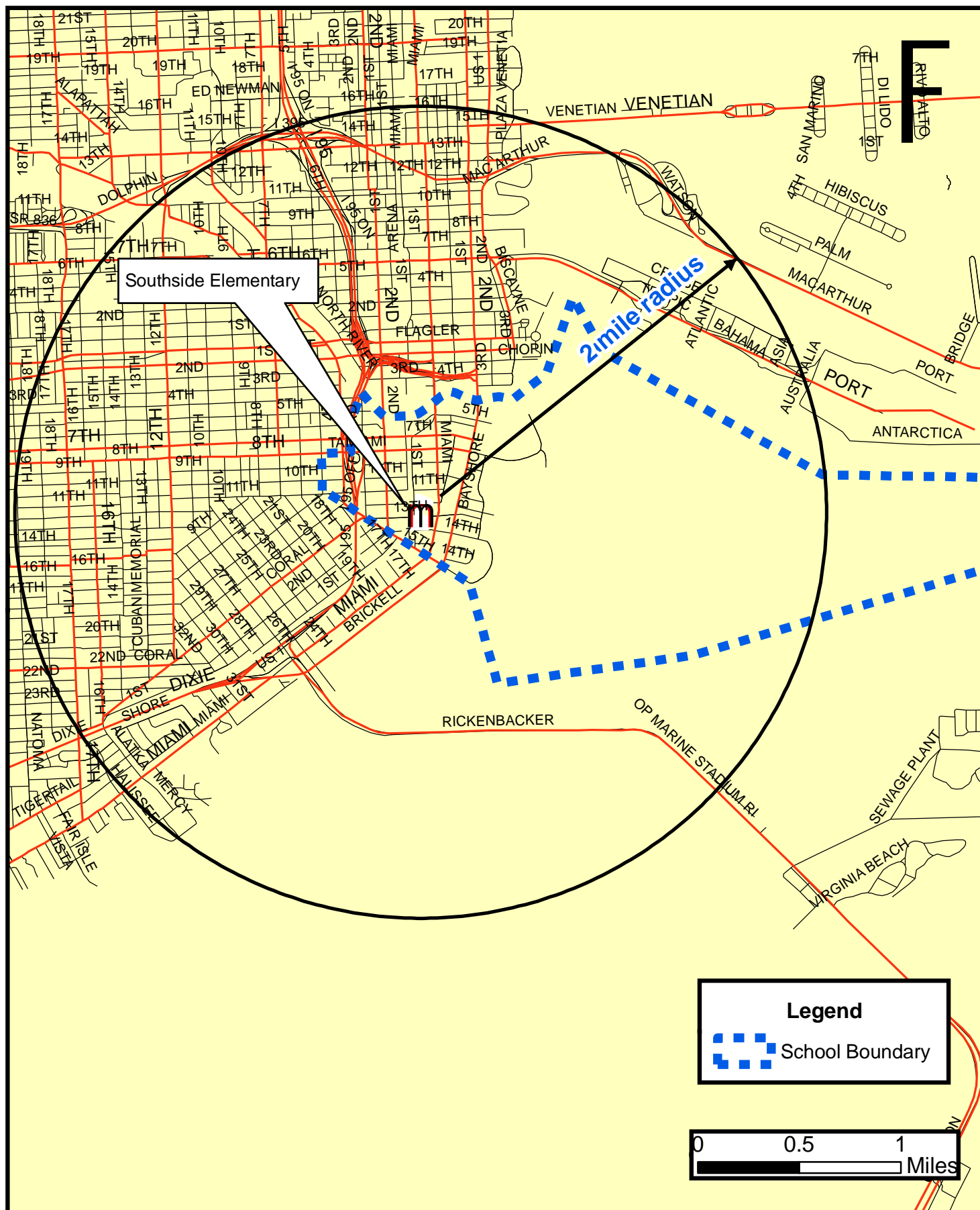
Enrollment: 447 students (School year 2006 to 2007)

School Attendance Boundary: Attendance boundary is shown in Figure 1.

Estimated mode split for transportation to/from school (based on interviews with school officials):

- Walk/Ride = 48%
- Private Car = 41%
- Buses = 11%





3. CRASH HISTORY

Pedestrian and bicycle crashes reported throughout Miami-Dade County for the period 2002 through 2004 were obtained from the MPO. A GIS analysis was conducted using the crash data to identify pedestrian and bicycle crashes that were reported within the limits of the school attendance boundary (or 2 mile radius). The analysis identified fatal crashes, injury crashes and juvenile crashes. Appendix A shows plots of the crashes reported within the project limits. The crash data is summarized in Table 1.

The recommended SRTS for Southside Elementary are presented in Section 5 of the report. Table 2 contains crash details for pedestrian/bicycle collisions that were reported along the recommended SRTS. As shown in Table 2, a relatively high number of pedestrian crashes were experienced along SW 2 Avenue – 7 pedestrian crashes were reported, none involving juveniles and no fatalities. A detailed research of the individual police crash reports would be required to identify probable causal factors for these pedestrian crashes and what, if any, specific engineering countermeasures may be considered to reduce these crashes. This research is beyond the limited scope of this SRTS project. Notwithstanding, based on the field reviews that were conducted for this study recommended improvements were developed to address roadway and traffic deficiencies that would enhance overall safety conditions for pedestrian and bicycle traffic using the proposed safe routes.

Table 1
Summary of Pedestrian and Bicycle Crashes
Southside Elementary

| Road Name | Segment | | 2002 Ped & Bike Crashes | | | | | | 2003 Ped & Bike Crashes | | | | | | 2004 Ped & Bike Crashes | | | | | |
|-----------------|-----------------|-----------------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|
| | | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | |
| | From | To | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries |
| SW 5 Avenue | SW 8 Street | SW 11 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW 4 Avenue | SW 8 Street | SW 12 Street | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| SW 3 Avenue | SW 4 Street | Coral Way | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW 2 Avenue | SW 5 Street | SW 14 Street | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW 1 Avenue | SW 15 Street | SW 5 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brickell Avenue | SW 15 Street | SW 4 Street | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 4 |
| SW 8 Street | SW 5 Avenue | Brickell Avenue | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 |
| Coral Way | SW 3 Avenue | Brickell Bay | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| SW 5 Street | N. Miami Avenue | Brickell Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| SW 7 Street | I-95 | Brickell Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| SW 10 Street | SW 3 Avenue | SW 1 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| SW 11 Street | SW 3 Avenue | SW 1 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | | | 0 | 2 | 0 | 12 | 0 | 14 | 0 | 0 | 1 | 12 | 1 | 12 | 0 | 0 | 1 | 11 | 1 | 11 |

Note: 1. Juveniles= children between the ages of 5-13 years
2. Others= children and adults greater than the age of 13 years

Table 2
Summary of Crashes Reported on Proposed Safe Routes
Southside Elementary, 2002-2004

| CRASH DETAILS | | | | | | | |
|---|-------------|---------------|-------------|----------|----------------|-----------------|-------------------|
| Safe Route | Case Number | Date of Crash | Day of Week | Time | Pedestrian Age | Injury/Fatality | Location of Crash |
| SW 2 Avenue (From SW 7 Street to SW 13 Street) | 733500350 | 06/27/02 | Wed | 11:25 PM | 15 | Injury | Sw 8 Street |
| | 743041450 | 11/06/02 | Tue | 8:00 AM | 49 | Injury | SW 13 Street |
| | 738276520 | 05/07/03 | Tue | 1:13 PM | Not Available | Injury | SW 7 Street |
| | 723727350 | 06/03/03 | Mon | 5:50 PM | 25 | Injury | SW 9 Street |
| | 721367330 | 02/22/03 | Fri | 12:15 PM | 72 | Injury | SW 13 Street |
| | 743932240 | 03/21/04 | Sat | 11:45 AM | 22 | Injury | SW 7 Street |
| | 743188530 | 07/21/04 | Tue | 11:00 AM | 47 | Injury | SW 13 Street |
| SW 13 Street (From SW 2 Avenue to Kagoshima Way) | 701857550 | 01/31/02 | Wed | 5:10 PM | 33 | Injury | 134 SW 13 Street |
| | 736420970 | 05/28/03 | Tue | 11:24 PM | 69 | Injury | 134 SW 13 Street |
| | 743955500 | 05/20/04 | Wed | 1:10 PM | 52 | Injury | 134 SW 13 Street |

Note: Juvenile crashes are highlighted in gray.

4. DEVELOPMENT OF SRTS

SRTS for Southside Elementary School were developed based on guidelines contained in the Safe Routes to School, Procedure Manual developed by Miami-Dade County, MPO September 2005. Several additional reference sources also provided guidance in developing safe routes for the project school. Notable among these were:

- National Center for Safe Routes to School: <http://www.saferouteroutesinfo.org/>
- Federal Highway Safe Routes to School: <http://safety.fhwa.dot.gov/saferoutes/>

Preliminary SRTS were initially developed for the project school based on reviews of several engineering factors. These included:

- School attendance boundary
- Aerial photographs
- Land use data (see Appendix B)
- Frequency/severity of juvenile pedestrian and bicycle crashes
- Roadway characteristics (sidewalks, medians, buffers, etc.)
- Speed limits
- Traffic volumes
- Location of traffic control devices
- Driveway density
- Location of canals and railroad crossings

Meetings were subsequently held with the school principal and other key staff members to further develop and refine the proposed SR2S. Input was also gained from the Parent Teachers Association (PTA) and the project steering committee that included representatives from the MPO, the School Board and the Public Works Department.

5. RECOMMENDED SRTS

Following the process described in Section 4, the recommended SRTS was developed for Southside Elementary School. The map on the following page shows the recommended SRTS. Table 3 shows pertinent roadway and traffic characteristics for the road segments along the recommended SRTS.

6. FIELD REVIEW

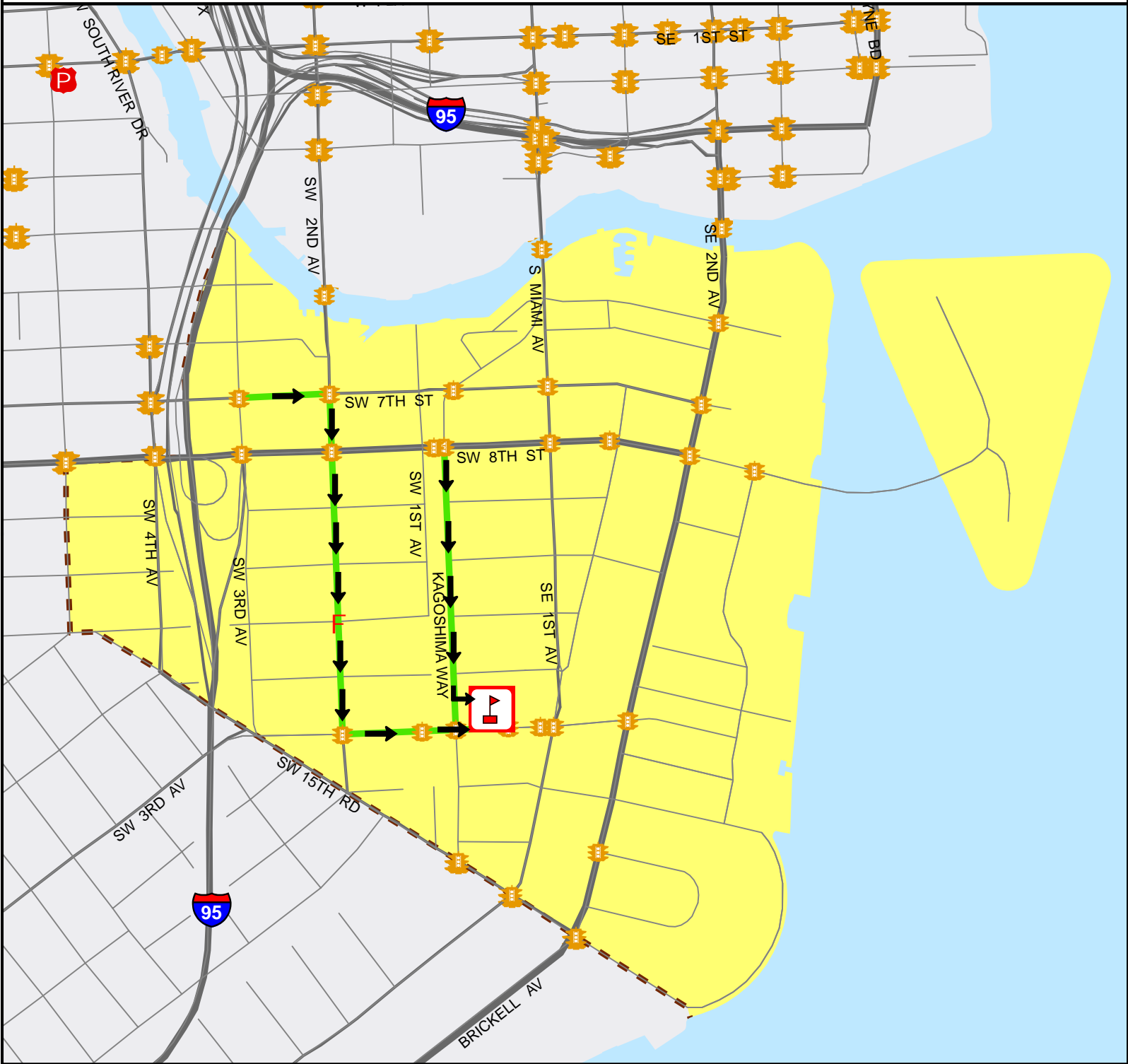
Field reviews for Southside Elementary School were conducted on May 22, 2007. The primary deficiencies that were identified along the proposed safe routes were missing crosswalks, school zone signage, and pedestrian heads. A list of the comprehensive deficiencies observed can be found in Appendix C.



SOUTHSIDE ELEMENTARY SCHOOL

45 SW 13th Street, Miami 33130

SAFE ROUTES TO SCHOOL



LEGEND



School

Streets



Attendance Boundary



Traffic Signals

Safe Route

Highways



Water



Fire



Police

0 500 1,000

Feet



Table 3
Southside Elementary
Existing Roadway and Traffic Characteristics for SRTS Segments

| Road | Segment | | Facility Type | Speed Limit | AADT ¹ | Ped & Bike Crashes ² |
|----------------------------|---------------------------|----------------------------|---------------------------------|-------------|-------------------|---------------------------------|
| | From | To | | | | |
| SW 7 th Street | SW 3 rd Avenue | SW 2 nd Avenue | State Road (Principal Arterial) | 40 mph | High | 1 |
| SW 2 nd Avenue | SW 7 th Street | SW 13 th Street | City Collector | 35 mph | Moderate | 5 |
| SW 13 th Street | SW 2 nd Avenue | Kagoshima Way | City Collector | 35 mph | Moderate | 0 |
| Kagoshima Way | SW 8 th Street | SW 13 th Street | City Collector | 35 mph | Moderate | 0 |

Notes:

1. For road segments where AADT data was not readily available, traffic volume is assessed as light, moderate or heavy based on field observed conditions.
2. Total pedestrian and bicycle crashes for 2002 - 2004

7. RECOMMENDED IMPROVEMENTS AND COST ESTIMATES

Based on the field reviews that were conducted along the SRTS (Section 5), recommended infrastructure improvements were developed to encourage and enhance safety for children walking or bicycling to/from school. The recommended infrastructure improvements were limited to eligible projects specified in Florida's SRTS Application Guidelines. Table 4 shows a listing of recommended infrastructure improvement projects along the safe route segments. Table 4 also includes cost estimates for the improvements. The cost estimates were developed based on FDOT's average unit cost rates for projects implemented in District 6 region. The total cost for infrastructure improvements was estimated at \$15,888.30.



Table 4
Southside Elementary School
SRTS Infrastructure Improvements

| Road Segment | Recommended Improvements | Length (ft) | Unit Cost | Unit | Total |
|---|--|-------------|------------|------|-------------|
| SW 7 Street (From SW 3 Avenue To SW 2 Avenue) | - No Improvements required on this segment | 0 | \$0.00 | n/a | \$0.00 |
| SW 2 Avenue (From SW 7 Street To SW 13 Street) | - Install crosswalk at SW 9 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at SW 10 Street - east and west sides | 85 | \$2.00 | ft | \$170.00 |
| | - Install crosswalk at SW 11 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at SW 12 Street - east and west sides | 85 | \$2.00 | ft | \$170.00 |
| SW 13 Street (From SW 2 Avenue To Kagoshima Way) | - Install pedestrian countdown signal heads at Kagoshima Way | 4 | \$1,428.51 | ea | \$5,714.04 |
| | - Install flourescent yellow green pedestrian sign | 4 | \$244.41 | ea | \$977.64 |
| Kagoshima Way (From SW 8 Street To SW 13 Street) | - Install crosswalk at SW 11 Street - east side | 45 | \$2.00 | ft | \$90.00 |
| | - Install crosswalk at SW 12 Street - east side | 40 | \$2.00 | ft | \$80.00 |
| | - Install 4" sidewalk 180 feet north of SW 13 Street | 86 | \$49.70 | sy | \$2,849.47 |
| | - Install flourescent yellow green pedestrian sign | 4 | \$244.41 | ea | \$977.64 |
| Preliminary Total Cost | | | | | \$11,348.79 |
| Contingencies (20%) | | | | | \$2,269.76 |
| Mobilization (10%) | | | | | \$1,134.88 |
| Maintence of Traffic (10%) | | | | | \$1,134.88 |
| Grand Total Cost | | | | | \$15,888.30 |

LIST OF APPENDICES

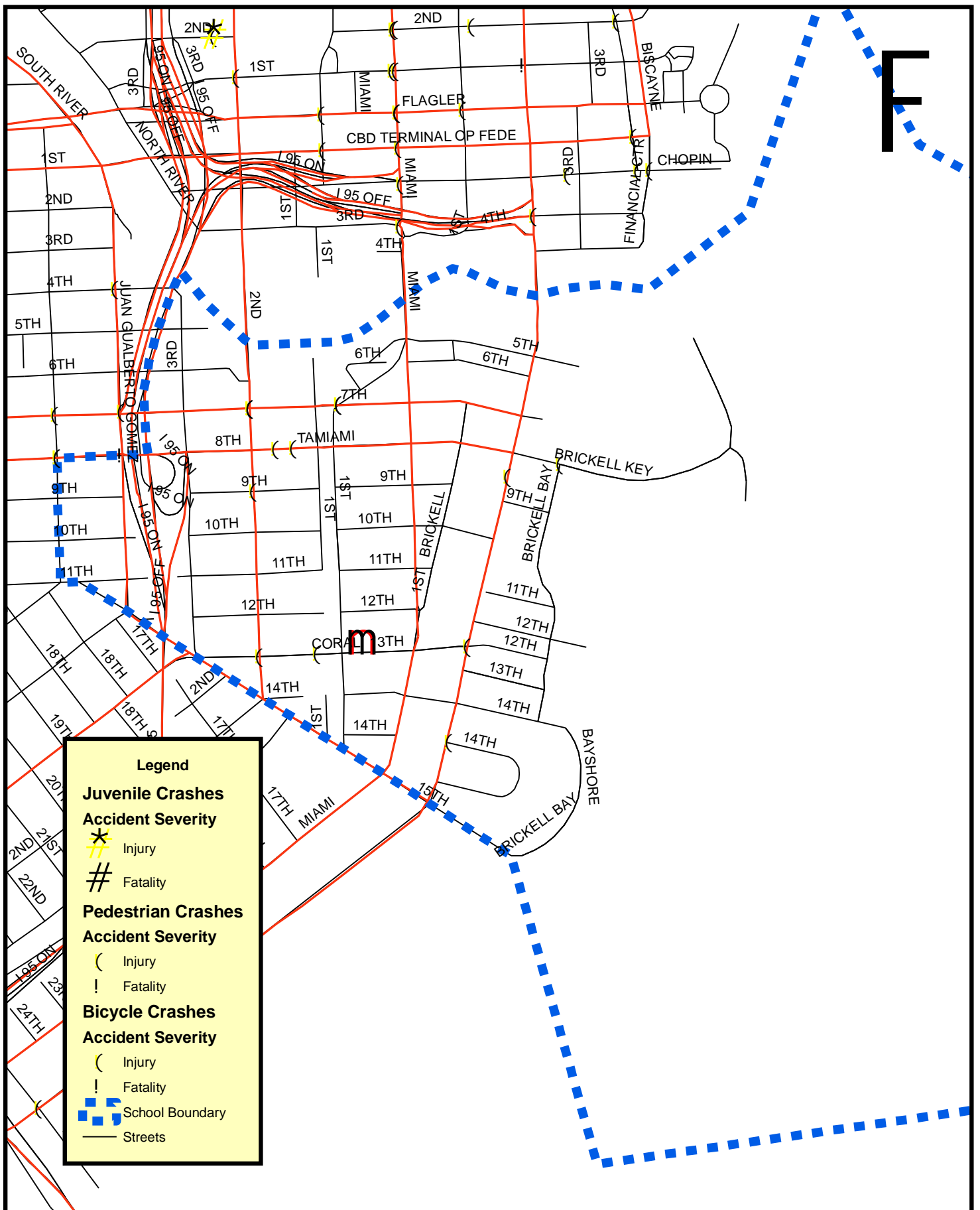
Appendix A – Maps of Pedestrian and Bicycle Crashes

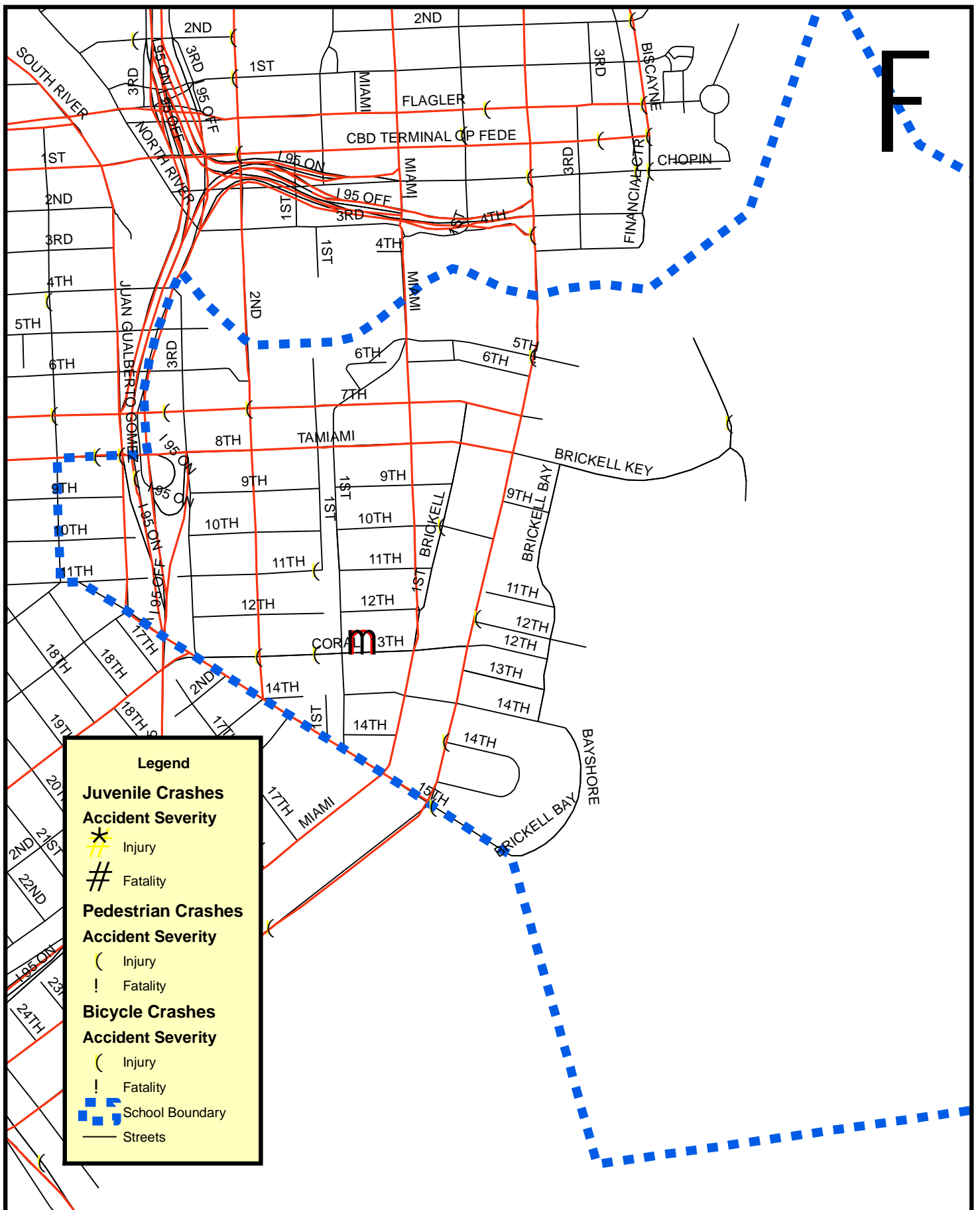
Appendix B – Land Use Map

Appendix C – Existing Route Deficiencies



APPENDIX A
Maps of Pedestrian and Bicycle Crashes

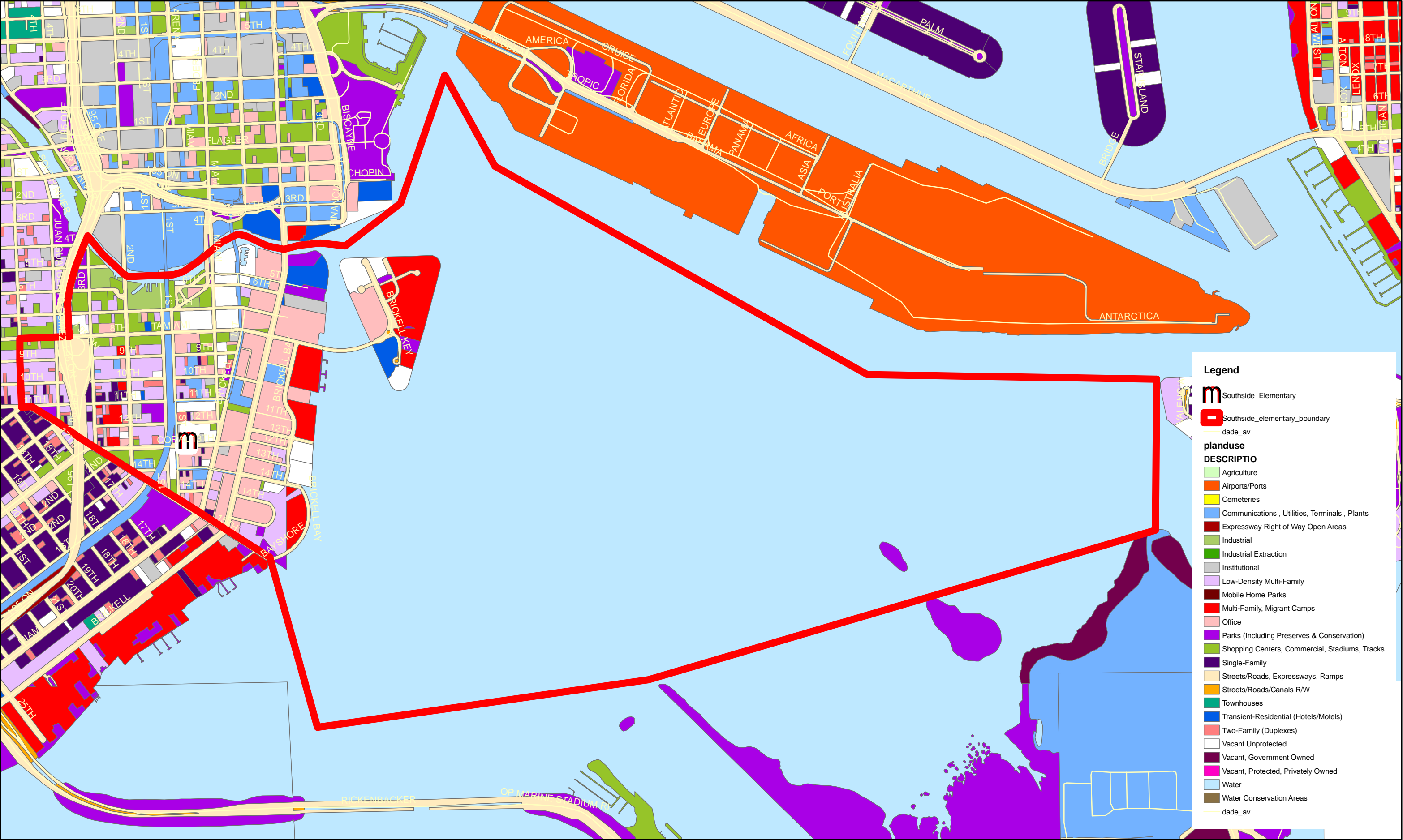




APPENDIX B

Land Use Map

Southside Elementary



APPENDIX C

Existing Route Deficiencies

SAFE ROUTE TO SCHOOL PROJECT

Southside Elementary
45 SW 13 St, Miami FL 33130

Improvements Needed

From the Field:

Route- SW 3rd Avenue (From SW 7th St. to SW 6th St.)

- There are not any residential areas on SW 3rd Ave. It is a commercial area, no improvements necessary. Remove segment from Safe Route.

Route- SW 2nd Avenue (From SW 7th St. to SW 13th St.)

- Crosswalks are missing at 9th St., 10th St., 11th St. and 12th St on the East and West Sides.

Route- SW 13th St. (From SW 2nd Ave to Kagoshima Way)

- No improvements needed for this segment.

Route- Kagoshima Way (From SW 8th St. to SW 13th St.)

- Crosswalks are needed at 11th St. and 12th St. on the East Side.
- Pavement of 86 feet needs to be added on dirt path next to the metrorail station.

Route- SW 7th St. (From SW 2nd Ave. to SW 3rd Ave.)

- No improvements needed for this segment.

DISTRICTWIDE TRAFFIC OPERATIONS STUDIES

FM NO. 250093-1-32-03

TWO NO. 26

SAFE ROUTES TO SCHOOL

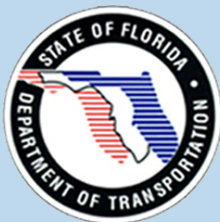
W. J. BRYAN ELEMENTARY SCHOOL

FINAL REPORT

Prepared for:

Florida Department of Transportation

District 6



Prepared by:

RS&H

Reynolds, Smith and Hills, Inc.

July 12, 2007

Safe Routes to School (SRTS) Pilot Project

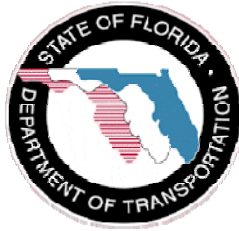
Financial Project No.: 25009313203

Task Work Order No.: 26

FINAL REPORT for **WJ Bryan Elementary School**

Prepared for:

Florida Department of Transportation



District 6

Prepared by:



REYNOLDS, SMITH & HILLS, INC.

July 11, 2007

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Appendix A – Maps of Pedestrian and Bicycle Crashes

Appendix B – Land Use Map

Appendix C – Existing Route Deficiencies



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1. INTRODUCTION

Safe Routes to School (SRTS) is a federally funded program that was authorized in August 2005 by Section 1404 of the federal transportation act, SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). The program targets children in grades K-8 and was developed to meet the following objectives:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age, and
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Florida's SRTS program is managed through the Florida Department of Transportation (FDOT). In accordance with the program guidelines, the FDOT awards projects for SRTS funding following a district-wide competitive application process. The FDOT District 6 Office in consultation with Miami-Dade County Metropolitan Planning Organization (MPO), Miami-Dade County School Board and Miami-Dade Public Works Department identified WJ Bryan Elementary School as a prospective candidate for SRTS funding. RS&H was retained by the District to assist in identifying infrastructure improvement needs and preparing the required application forms for the SRTS program. This report was prepared in support of the application for funding proposed infrastructure improvements at WJ Bryan Elementary School for the SRTS program.

2. PROJECT SCHOOL DATA

The following information pertains to the project school.

Name: WJ Bryan Elementary

Address: 1201 NE 125th Street, North Miami, Fl 33161 (Figure 1 shows project location map)

Enrollment: 771 students (School year 2006 to 2007)

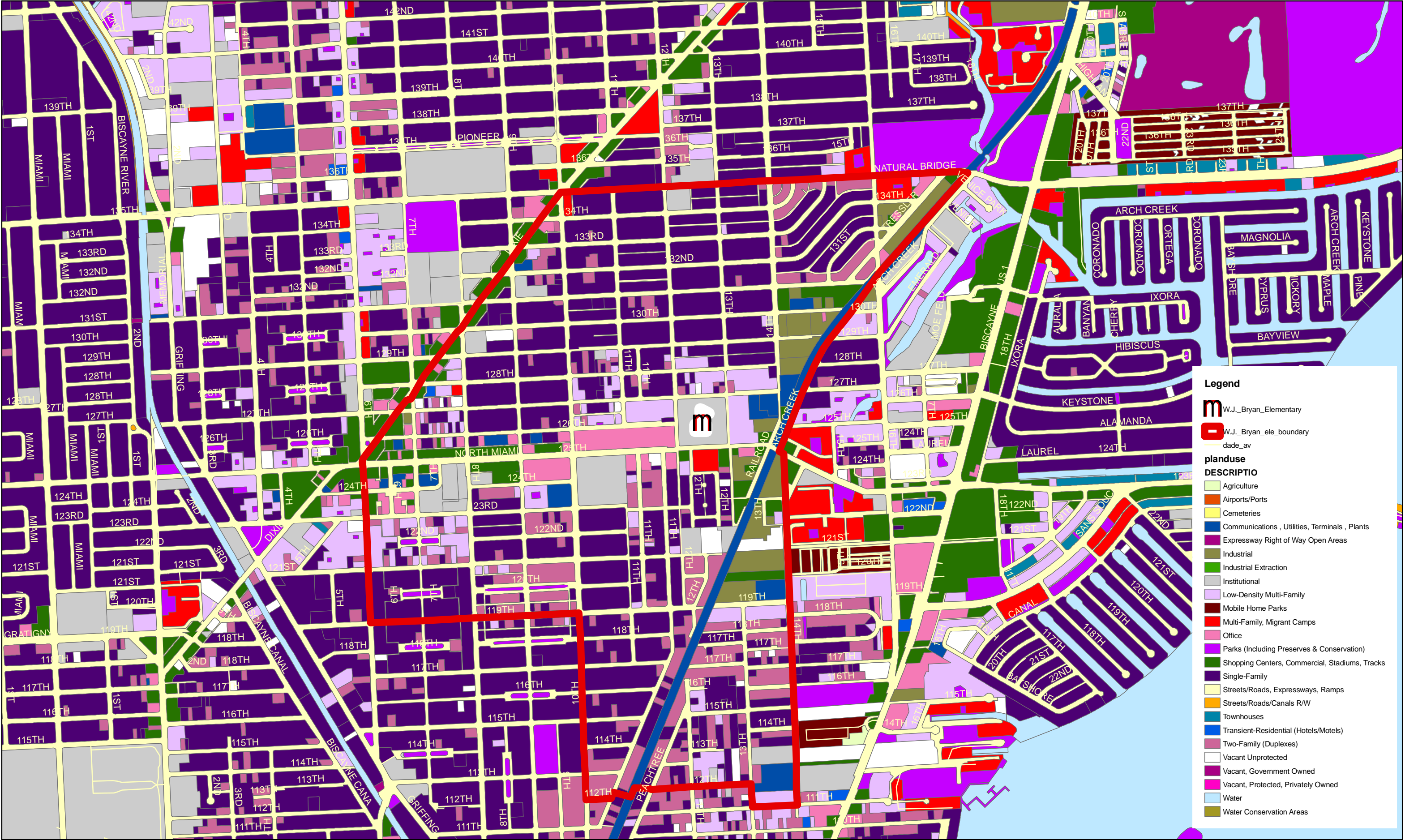
School Attendance Boundary: Attendance boundary is shown in Figure 1.

Estimated mode split for transportation to/from school (based on interviews with school officials):

- Walk/Ride = Not Available
- Private Car = Not Available
- Buses = Not Available



W.J. Bryan Elementary



3. CRASH HISTORY

Pedestrian and bicycle crashes reported throughout Miami-Dade County for the period 2002 through 2004 were obtained from the MPO. A GIS analysis was conducted using the crash data to identify pedestrian and bicycle crashes that were reported within the limits of the school attendance boundary (or 2 mile radius). The analysis identified fatal crashes, injury crashes and juvenile crashes. Appendix A shows plots of the crashes reported within the project limits. The crash data is summarized in Table 1.

The recommended SRTS for W.J. Bryan Elementary are presented in Section 5 of the report. Table 2 contains crash details for pedestrian/bicycle collisions that were reported along the recommended SRTS. As shown in Table 2, relatively few pedestrian/bicycle crashes were experienced along the recommended safe routes during the 3-year study period and none involved juveniles. Three pedestrian crashes were reported on NE 13 Avenue, three on NE 125 Street and two on NE 13 Avenue. A detailed research of the individual police crash reports would be required to identify probable causal factors for these pedestrian crashes and what, if any, specific engineering countermeasures may be considered to reduce these crashes. This research is beyond the limited scope of this SRTS project. Notwithstanding, based on the field reviews that were conducted for this study recommended improvements were developed to address roadway and traffic deficiencies that would enhance overall safety conditions for pedestrian and bicycle traffic using the proposed safe routes.

Table 1
Summary of Pedestrian and Bicycle Crashes
WJ Bryan Elementary

| Road Name | Segment | | 2002 Ped & Bike Crashes | | | | | | 2003 Ped & Bike Crashes | | | | | | 2004 Ped & Bike Crashes | | | | | |
|--------------------|---------------|---------------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|-------------------------|----------|---------------------|----------|------------|----------|
| | | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | | Juveniles ¹ | | Others ² | | Total | |
| | From | To | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries | Fatalities | Injuries |
| NE 6 Avenue | NE 125 Street | NE 119 Street | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| West Dixie Highway | NE 125 Street | NE 135 Street | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 1 |
| NE 125 Street | NE 6 Avenue | NE 14 Avenue | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 1 | 0 | 7 | 0 | 8 |
| NE 12 Avenue | NE 125 Street | NE 135 Street | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 13 Avenue | NE 123 Street | NE 135 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 135 Street | NE 10 Avenue | Arch Creek | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 117 Street | NE 13 Avenue | NE 14 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 118 Street | NE 10 Avenue | NE 11 Avenue | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 14 Avenue | NE 125 Street | NE 135 Street | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 16 Avenue | NE 135 Street | Arch Creek | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 7 Avenue | NE 128 Street | NE 119 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 119 Street | NE 6 Avenue | NE 14 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE 111 Street | NE 13 Avenue | NE 14 Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NE 10 Avenue | NE 135 Street | NE 119 Street | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | | | 0 | 4 | 0 | 15 | 0 | 19 | 0 | 2 | 0 | 17 | 0 | 19 | 0 | 0 | 1 | 12 | 1 | 13 |

Note: 1. Juveniles= children between the ages of 5-13 years
2. Others= children and adults greater than the age of 13 years

Table 2
Summary of Crashes Reported on Proposed Safe Routes
W.J. Bryan Elementary, 2002-2004

| CRASH DETAILS | | | | | | | |
|---|-------------|---------------|-------------|----------|----------------|-----------------|-------------------|
| Safe Route | Case Number | Date of Crash | Day of Week | Time | Pedestrian Age | Injury/Fatality | Location of Crash |
| NE 13 Avenue (From NE 125 Street to NE 135 Street) | 733751320 | 06/14/02 | Thu | 7:55 AM | 4 | Injury | NE 127 Street |
| | 733776670 | 05/19/03 | Sun | 8:15 AM | 17 | Injury | NE 131 Street |
| NE 123 Street (From NE 6 Avenue to NE 11 Place) | 733780070 | 01/16/03 | Wed | 11:00 PM | 25 | Injury | NE 7 Avenue |
| | 737781030 | 01/25/04 | Sat | 11:00 PM | 50 | Injury | NE 6 Avenue |
| | 737797660 | 06/23/04 | Tue | 10:09 AM | 30 | Injury | NE 10 Avenue |
| NE 125 Street (From NE 13 Avenue to NE11 Place) | 733784860 | 07/01/03 | Mon | 6:46 PM | 43 | Injury | NE 11 Place |
| | 737774570 | 10/19/04 | Mon | 11:08 AM | 38 | Injury | NE 12 Avenue |
| | 737799090 | 02/15/04 | Sat | 4:45 PM | UNK | Injury | NE 12 Court |

Note: Juvenile crashes are highlighted in gray.

4. DEVELOPMENT OF SRTS

SRTS for WJ Bryan Elementary School were developed based on guidelines contained in the Safe Routes to School, Procedure Manual developed by Miami-Dade County, MPO September 2005. Several additional reference sources also provided guidance in developing safe routes for the project school. Notable among these were:

- National Center for Safe Routes to School: <http://www.saferouteroutesinfo.org/>
- Federal Highway Safe Routes to School: <http://safety.fhwa.dot.gov/saferoutes/>

Preliminary SRTS were initially developed for the project school based on reviews of several engineering factors. These included:

- School attendance boundary
- Aerial photographs
- Land use data (see Appendix B)
- Frequency/severity of juvenile pedestrian and bicycle crashes
- Roadway characteristics (sidewalks, medians, buffers, etc.)
- Speed limits
- Traffic volumes
- Location of traffic control devices
- Driveway density
- Location of canals and railroad crossings

5. RECOMMENDED SRTS

Following the process described in Section 4, the recommended SRTS was developed for WJ Bryan Elementary School. The map on the following page shows the recommended SRTS. Table 3 shows pertinent roadway and traffic characteristics for the road segments along the recommended SRTS.

6. FIELD REVIEW

Field reviews for WJ Bryan Elementary School were conducted on March 9, 2007. The primary deficiencies that were identified along the proposed safe routes were missing sidewalk, crosswalks, school zone signage, and pedestrian heads. A list of the comprehensive deficiencies observed can be found in Appendix C.



SAFE ROUTES TO SCHOOL

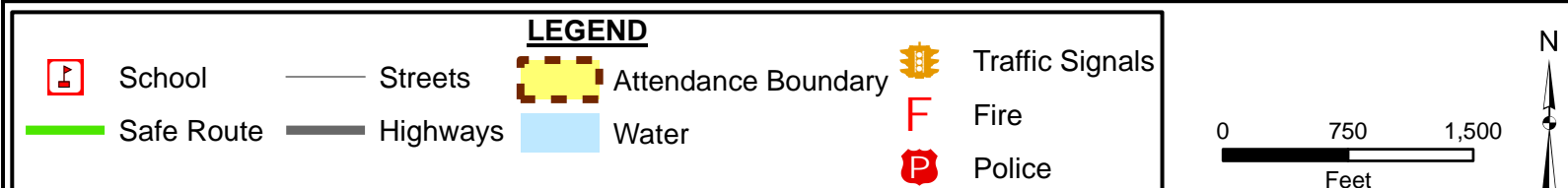


Table 3
WJ Bryan Elementary
Existing Roadway and Traffic Characteristics for SRTS Segments

| Road | Segment | | Facility Type | Speed Limit | AADT ¹ | Ped & Bike Crashes ² |
|-----------------------------|-----------------------------|------------------------------|-------------------|-------------|-------------------|---------------------------------|
| | From | To | | | | |
| NE 10 th Avenue | NE 134 th Street | NE 127 th Street | City Local Street | 35 mph | Low | 1 |
| NE 13 th Avenue | NE 135 th Street | NE 1253 th Street | City Local Street | 35 mph | Low | 1 |
| NE 127 th Street | NE 5 th Avenue | NE 13 th Avenue | City Local Street | 35 mph | Low | 0 |
| NE 11 th Place | NE 125 th Street | NE 112 th Street | City Local Street | 35 mph | Low | 0 |
| NE 121 st Street | NE 6 th Avenue | NE 11 th Place | City Local Street | 35 mph | Low | 0 |
| NE 123 rd Street | NE 6 th Avenue | NE 11 th Place | City Local Street | 35 mph | Low | 0 |

Notes:

1. For road segments where AADT data was not readily available, traffic volume is assessed as light, moderate or heavy based on fields observed conditions.
2. Total pedestrian and bicycle crashes for 2002 - 2004

7. RECOMMENDED IMPROVEMENTS AND COST ESTIMATES

Based on the field reviews that were conducted along the SRTS (Section 5), recommended infrastructure improvements were developed to encourage and enhance safety for children walking or bicycling to/from school. The recommended infrastructure improvements were limited to eligible projects specified in Florida's SRTS Application Guidelines. Table 4 shows a listing of recommended infrastructure improvement projects along the safe route segments. Table 4 also includes cost estimates for the improvements. The cost estimates were developed based on FDOT's average unit cost rates for projects implemented in District 6 region. The total cost for infrastructure improvements was estimated at \$671,765.84.



Table 4
W.J. Bryan Elementary School
Cost Estimate for Recommended Improvements

| Road Segment | Recommended Improvements | Length (ft) | Unit Cost | Unit | Total |
|---|---|-------------|------------|------|-------------|
| NE 10 Avenue (From NE 134 Street To NE 127 Street) | - Install crosswalk at NE 133 Street - east and west sides | 60 | \$2.00 | ft | \$120.00 |
| | - Install 4" sidewalk between NE 133 Street and NE 132 Street | 46 | \$49.70 | sy | \$1,524.13 |
| | - Install 6" sidewalk between NE 133 Street and NE 132 Street | 24 | \$79.59 | sy | \$1,273.44 |
| | - Install crosswalk at NE 132 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at NE 131 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install 4" sidewalk between NE 131 Street and NE 130 Street | 222 | \$49.70 | sy | \$7,355.60 |
| | - Install 6" sidewalk between NE 131 Street and NE 130 Street | 36 | \$79.59 | sy | \$1,910.16 |
| | - Install crosswalk at NE 130 Street - east and west sides | 90 | \$2.00 | ft | \$180.00 |
| | - Install 4" sidewalk extension at NE 130 Street - west side | 15 | \$49.70 | sy | \$497.00 |
| | - Install 4" sidewalk between NE 130 Street and NE 129 Street | 198 | \$49.70 | sy | \$6,560.40 |
| | - Install 6" sidewalk between NE 130 Street and NE 129 Street | 43 | \$79.59 | sy | \$2,281.58 |
| | - Install 4" sidewalk extension at NE 130 Street - east side | 20 | \$49.70 | sy | \$662.67 |
| | - Install crosswalk at NE 129 Street - east and west sides | 75 | \$2.00 | ft | \$150.00 |
| | - Install 4" sidewalk between NE 129 Street and NE 128 Street | 257 | \$49.70 | sy | \$8,515.27 |
| | - Install 6" sidewalk between NE 129 Street and NE 128 Street | 24 | \$79.59 | sy | \$1,273.44 |
| | - Install 4" sidewalk extension at NE 129 Street - east side | 20 | \$49.70 | sy | \$662.67 |
| NE 13 Avenue (From NE 135 Street To NE 125 Street) | - Install crosswalk at NE 128 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at NE 129 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install 4" sidewalk extension at NE 129 Street - south side | 20 | \$49.70 | sy | \$662.67 |
| | - Install crosswalk at NE 130 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at NE 131 Street - east and west sides | 80 | \$2.00 | ft | \$160.00 |
| | - Install crosswalk at NE 132 Street - east and west sides | 75 | \$2.00 | ft | \$150.00 |
| | - Install 4" sidewalk extension at NE 132 Street - east side | 30 | \$49.70 | sy | \$994.00 |
| | - Install crosswalk at NE 133 Street - east and west sides | 90 | \$2.00 | ft | \$180.00 |
| | - Install 4" sidewalk extension at NE 133 Street - east side | 24 | \$2.00 | ft | \$48.00 |
| | - Install crosswalk at NE 134 Street - east and west sides | 65 | \$2.00 | ft | \$130.00 |
| | - Install 4" sidewalk extension at NE 134 Street - east side | 48 | \$49.70 | sy | \$1,590.40 |
| | - Install flourescent yellow green pedestrian sign | 2 | \$244.41 | ea | \$488.82 |
| | - Install pedestrian countdown signals | 8 | \$1,428.51 | ea | \$11,428.08 |
| NE 127 Street (From NE 5 Avenue To NE 13 Avneue) | - Install crosswalk at NE 8 Avenue - north and south sides | 90 | \$2.00 | ft | \$180.00 |
| | - Install crosswalk at NE 9 Avenue - north and south sides | 85 | \$2.00 | ft | \$170.00 |
| | - Install crosswalk at NE 10 Avenue - north and south sides | 100 | \$2.00 | ft | \$200.00 |
| | - Install crosswalk at NE 11 Avenue - north and south sides | 65 | \$2.00 | ft | \$130.00 |
| | - Install crosswalk at NE 11 Court - north and south sides | 30 | \$2.00 | ft | \$60.00 |
| | - Install crosswalk at NE 12 Avenue - north and south sides | 90 | \$2.00 | ft | \$180.00 |
| | - Install 4" sidewalk extension at NW 12 Avenue - southeast and northwest corners | 30 | \$49.70 | sy | \$994.00 |

LIST OF APPENDICES

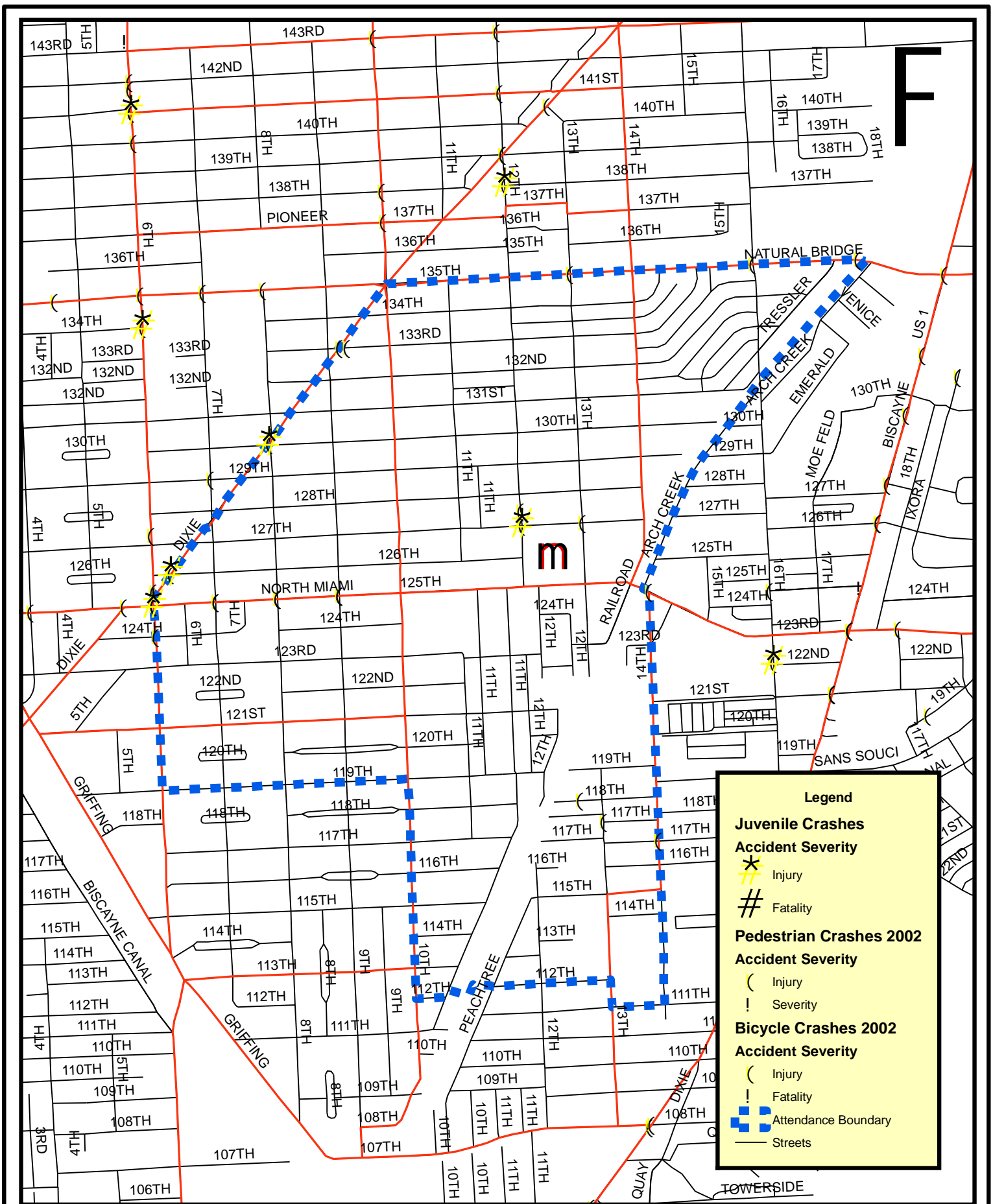
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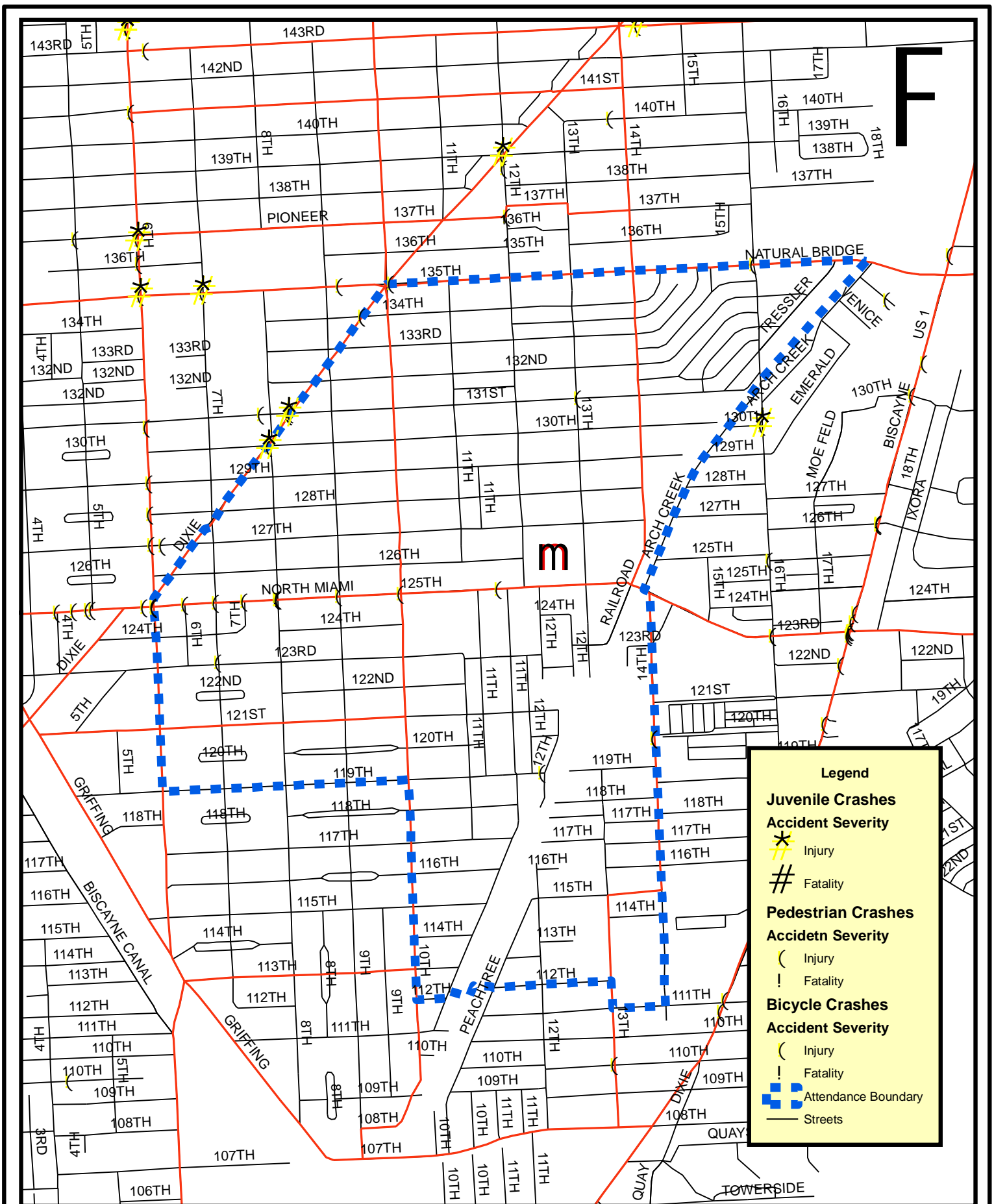
Appendix B – Land Use Map

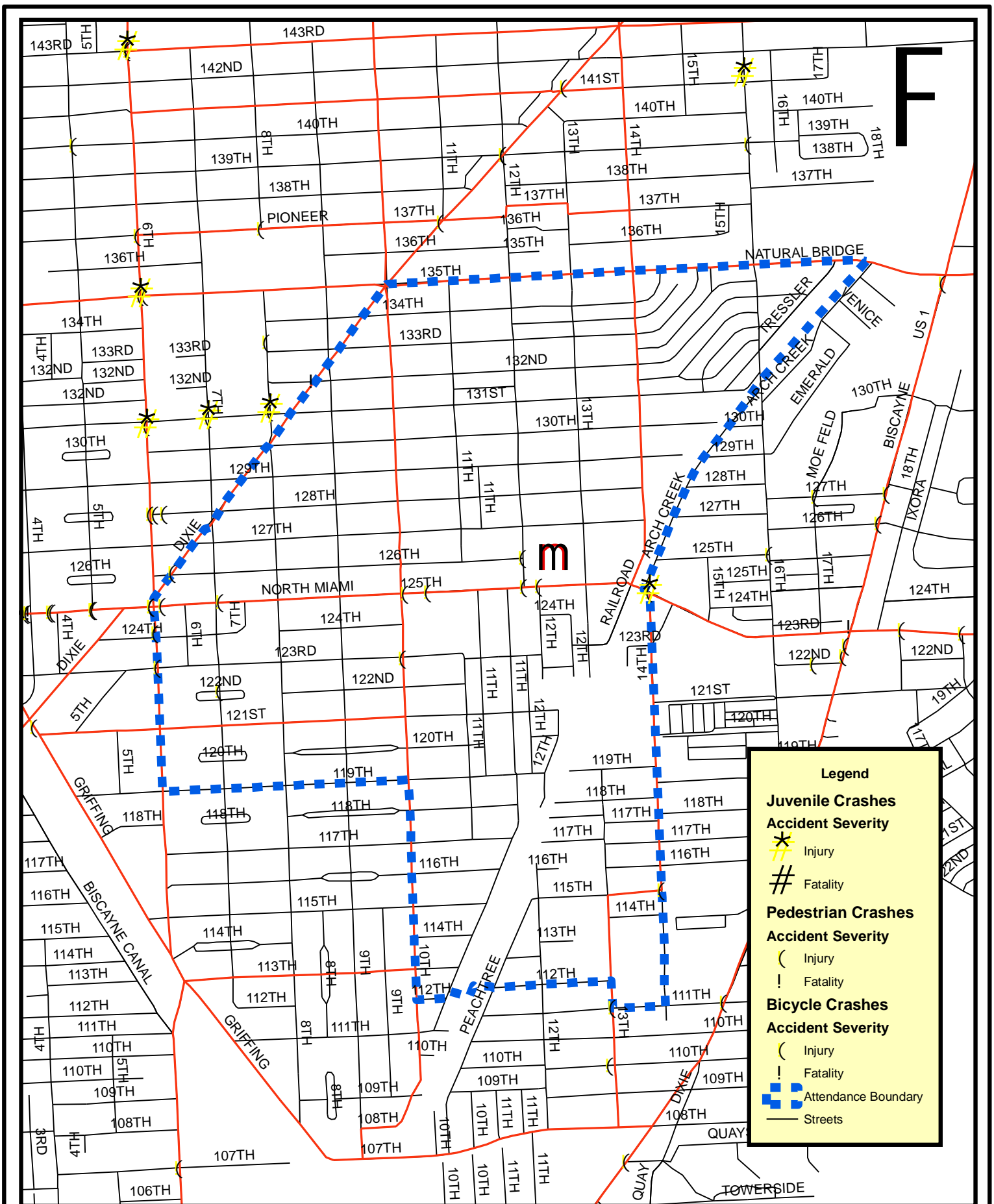
Appendix C – Existing Route Deficiencies



APPENDIX A
Maps of Pedestrian and Bicycle Crashes



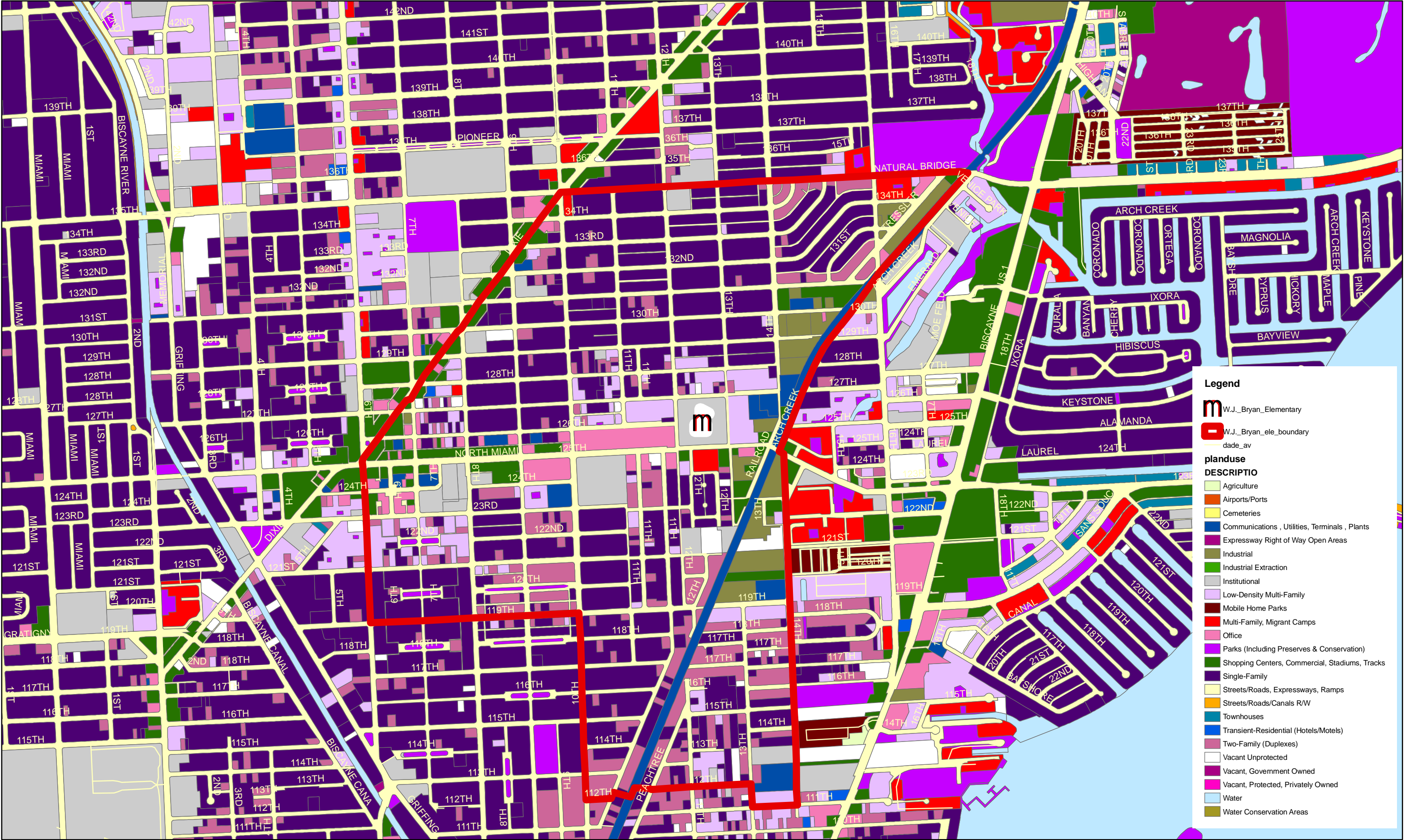




APPENDIX B

Land Use Map

W.J. Bryan Elementary



Legend

-  W.J. Bryan_Elementary
-  W.J. Bryan_ele_boundary
-  dade_av
- planduse**
- DESCRIPTIO**
-  Agriculture
-  Airports/Ports
-  Cemeteries
-  Communications , Utilities, Terminals , Plants
-  Expressway Right of Way Open Areas
-  Industrial
-  Industrial Extraction
-  Institutional
-  Low-Density Multi-Family
-  Mobile Home Parks
-  Multi-Family, Migrant Camps
-  Office
-  Parks (Including Preserves & Conservation)
-  Shopping Centers, Commercial, Stadiums, Tracks
-  Single-Family
-  Streets/Roads, Expressways, Ramps
-  Streets/Roads/Canals R/W
-  Townhouses
-  Transient-Residential (Hotels/Motels)
-  Two-Family (Duplexes)
-  Vacant Unprotected
-  Vacant, Government Owned
- Vacant, Protected, Privately Owned
- Water
- Water Conservation Areas

APPENDIX C

Existing Route Deficiencies

SAFE ROUTE TO SCHOOL PROJECT

1200 NE 125 Street, North Miami, FL 33161

Improvements Needed

From the Field:

Route- NE 10 Avenue (From NE 134 St. to NE 127 St.)

- At NE 133 Street crosswalk is needed on the east and west side.
- Between NE 133 Street and NE 132 Street sidewalk is missing approximately 70 feet and 115 feet north of NE 132 Street.
- At NE 132 Street crosswalk is needed on the east and west side.
- At NE 131 Street crosswalk is needed on the east and west side.
- Sidewalk is missing in between NE 131 St. and NE 130 St. Approximately 258 feet.
- At NE 130 Street crosswalk is needed on the east and west side and sidewalk extension is missing on the west side.
- Sidewalk missing south of NE 130 Street (Approximately 123 feet) and sidewalk extension on the east side.
- At NE 129 Street crosswalk is needed on the east and west side.
- At NE 129 Street just north is missing sidewalk. Approximately 118 feet.
- Sidewalk is missing(App. 281 feet) between NE 128 Street and NE 129 Street.
- At NE 128 Street crosswalk is missing on the east and west side and sidewalk extension missing on the east side.

Route- NE 13 Avenue (From NE 135 St. to NE 125 St.)

- At NE 128 Street crosswalk is needed on the east and west side.
- At NE 129 Street crosswalk is needed on the east and west side and there is sidewalk extension needed on the south side.
- At NE 130 Street crosswalk is needed on the east and west side.
- At NE 131 Street crosswalk is needed on the east and west side.
- At NE 132 Street crosswalk is needed on the east and west side and sidewalk extension on the east side.
- NE 133 Street crosswalk is needed on the east and west side and sidewalk extension is needed on the east side.
- NE 134 Street crosswalk is needed on the east and west side and sidewalk extension is needed on the east side.

Route- NE 131 Street (From US 1 to NE 15 Avenue)

- At NE 13 Avenue crosswalk is needed on the north and south side.
- At NE 12 Avenue crosswalk is needed on the north and south side.
- At NE 11 Avenue crosswalk is needed on the north and south side.

- At NE 10 Avenue crosswalk is needed on the north and south side.
- At NE 9 Avenue crosswalk is needed on the north and south side.

Route- NE 127 Street (From NE 5 Ave. to NE 13 Ave.)

- At NE 8 Avenue crosswalk is needed on the north and south side.
- At NE 9 Avenue crosswalk is needed on the north and south side.
- At NE 10 Avenue crosswalk is needed on the north and south side.
- At NE 11 Avenue crosswalk is needed on the north and south side.
- At NE 11 Court crosswalk is needed on the north side.
- At NE 12 Avenue crosswalk is needed on the north side and sidewalk extension missing in the southeast and northwest corner.

Route- NE 11 Place (From NE 125 St. to NE 112 St.)

- At NE 123 Street crosswalk is needed on the east and west side and sidewalk extension is needed on all four corners.
- At NE 121 Street crosswalk is needed on the east and west side and sidewalk extension is needed on all four corners.
- Sidewalk is missing between NE 121 St. to NE 112 St. on both the east and west side.
- At NE 119 place crosswalk is needed on the east and west side and sidewalk extension is needed on all four corners.
- At NE 118 Street crosswalk is needed on the west side.
- At NE 117 Street crosswalk is needed on the west side.
- At NE 116 Street crosswalk is needed on the west side.
- At NE 115 Street crosswalk is needed on the west side.
- At NE 114 Street crosswalk is needed on the west side.
- At NE 113 Street crosswalk is needed on the west side.

Route- NE 121 Street (From NE 6 Avenue to NE 11 Place)

- Sidewalk is missing from NE 11 Place to NE 8 Avenue.
- At 11 Street crosswalk is missing on the north and south side and sidewalk extension is needed on all four corners.
- At NE 10 Avenue crosswalk is needed on the north and south side and sidewalk extension is needed on all four corners.
- At NE 9 Avenue crosswalk is needed on the north and south side and sidewalk extension is needed on all four corners.
- At NE 8 Avenue crosswalk is needed on the north and south side and sidewalk extension is needed on all four corners.
- At NE 7 Avenue crosswalk is needed on the north and south side and sidewalk extension is needed on all four corners.
- Sidewalk is missing between NE 8 Avenue and NE 9 Avenue on the north side.(App. 214 feet)

Route- NE 123 Street (From NE 6 Avenue to NE 11 Place)

- At NE 6 Court there is crosswalk needed on the north side.
- At NE 7 Avenue there is crosswalk needed on the north and south side. Sidewalk extension is missing on the west side.
- At NE 8 Avenue there is crosswalk needed on the north and south side. Sidewalk extension is missing on the southeast corner.
- There is sidewalk missing between 8 Avenue and 9 Avenue. On the south side approximately 544 feet and on the north side approximately 372 feet.
- At NE 9 Avenue there is crosswalk needed on the north and south side and sidewalk extension is needed on the south side.
- There is sidewalk missing between 11 Avenue and 10 Avenue on the south side.
- At NE 11 Court there is crosswalk needed on the north and south side and sidewalk extension on all four corners.
- At NE 11 Place there is crosswalk needed on the north and south side and sidewalk extension on all four corners.
- Sidewalk is missing between 11 Court and 11 place on the north side.
- At 11 Avenue sidewalk extension is missing in the southeast corner.

