

#GPC V-12

Safe Routes to School 2013 Infrastructure Plans

March 2014



Prepared by



Kimley-Horn
and Associates, Inc.



Prepared for



Safe Routes to School 2013 Infrastructure Plans

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1.0 INTRODUCTION

The primary objective of the Safe Routes to School (SRTS) program is to encourage children, especially in grades K-8, to walk and cycle to school by making walking and cycling to school safer and more appealing. In addition to encouraging more children to walk or cycle to school, the SRTS programs also address the safety needs of children who are already walking or cycling in less than ideal conditions. Additional benefits of the SRTS program include reducing traffic congestion near schools and reducing childhood obesity and inactivity. The SRTS improvements can also improve safety, mobility options, and provide opportunities for healthy lifestyles not only for children but also for the communities in general. Comprehensive SRTS programs utilize a combination of education, encouragement, engineering, and enforcement strategies to achieve program benefits.

Miami-Dade County has been at the forefront of implementing SRTS programs since the early 2000s. The Miami-Dade County Public Schools (MDCPS), in coordination with the Miami-Dade County Public Works and Waste Management Department (PWWMD) and the Miami-Dade MPO so far have developed SRTS infrastructure improvement plans for approximately 75 schools. These 75 plans are at various stages of implementation (see Appendix A). Examples of typical infrastructure improvements include sidewalks, crosswalks, signage, school speed zones flashers, traffic control devices at crossings, traffic calming, and facilities for pedestrians with disabilities. The infrastructure improvements are supplemented by the efforts of the University of Miami's WalkSafe™ program and MDCPS that focus on student education and encouragement on the benefits of walking and biking to school.

There are approximately 220 elementary public schools in Miami-Dade County. Every year, the MDCPS develops SRTS plans and seeks funding for about 10 schools. The focus of the *Safe Routes to School 2013 Infrastructure Plans* study is to develop SRTS infrastructure plans for 10 priority schools. These priority schools were selected by MDCPS based on a county-wide prioritization of K-8 schools that was completed as part of the *Safe Routes to School Plans 2011* study.

Unlike SAFETEA-LU, the new federal transportation reauthorization bill, MAP-21, no longer provides a dedicated funding source for SRTS projects. Instead, SRTS projects are one of the eligible project types for receiving Transportation Alternatives Program (TAP) funding. The TAP funding is distributed through a competitive process managed by the Florida Department of Transportation's (FDOT).

1.1 Study Goals

The goals of the *Safe Routes to School 2013 Infrastructure Plans* study are listed below:

- Develop SRTS infrastructure improvement plans for 10 priority schools.
- Prepare the Florida Department of Transportation's (FDOT) Infrastructure Funding Application for the priority schools.
- Update the prioritization criteria for selecting schools for SRTS infrastructure plan development

1.2 Priority Schools

The SRTS infrastructure plans were developed for the following schools:

- Silver Bluff Elementary
- Citrus Grove Elementary
- Sunny Isles Beach K-8 Community School
- Morningside Elementary
- Shenandoah Elementary
- Fairlawn Elementary
- James H. Bright Elementary
- Kinloch Park Elementary and Middle Schools
- Hialeah Gardens Elementary
- Nathan B. Young Elementary

These schools were selected by MDCPS based on the priority rankings developed in 2011. The approximate locations of the schools are depicted in Figure 1.

1.3 Study Process

The study results are documented under the following chapters:

- Chapter 2 documents field assessment of priority schools.
- Chapter 3 documents the development of SRTS recommendations.
- Chapter 4 documents the preparation of funding applications.
- Chapter 5 documents the results of revised prioritization for selecting schools for future SRTS funding applications.
- Chapter 6 provides a summary of the study.

Figure 1: Location Map of Selected Schools



2.0 ASSESSMENT OF PRIORITY SCHOOLS

Table 1 lists the schools selected for SRTS improvements. Field reviews were conducted to assess pedestrian facilities and potential unsafe conditions for student pedestrians in the vicinity of selected schools. Overall, six selected schools are located within the City of Miami, one each in Hialeah, Hialeah Gardens, Opa-Locka and Sunny Isles Beach. Nine are elementary schools and one is a K-8 community school. The pedestrian facility needs of Kinloch Park Middle School, which is located in the vicinity of Kinloch Park Elementary School, was also reviewed. Sample photos illustrating pedestrian facilities in the vicinity of the schools are illustrated in this section.

Table 1: Selected Schools for SRTS Improvements

School	Address	Municipality
Silver Bluff Elementary	2609 SW 25 Avenue	Miami
Citrus Grove Elementary	2121 NW 5 Street	Miami
Sunny Isles Beach K-8 Community School	201 182 Drive	Sunny Isles Beach
Morningside Elementary	6620 NE 5 Avenue	Miami
Shenandoah Elementary	1023 SW 21 Avenue	Miami
Fairlawn Elementary	444 SW 60 Avenue	Miami
James H. Bright Elementary	2530 W 10 Avenue	Hialeah
Kinloch Park Elementary and Middle Schools	4275 NW 1 Street	Miami
Hialeah Gardens Elementary	9702 NW 130 Street	Hialeah Gardens
Nathan B. Young Elementary	14120 NW 24 Avenue	Opa-Locka

Silver Bluff Elementary



Provide access ramp connection and detectable warning pad



Replace/refurbish crosswalk markings, signage and ADA facilities

Citrus Grove Elementary



Relocate school speed zone sign (does not meet ADA standards)



Install a continuous paved sidewalk

Sunny Isles Beach K-8 Community School



Install detectable warning pads on crosswalk ramps



Upgrade school crossing signs and provide ladder type crosswalk

Morningside Elementary



Upgrade crosswalk markings and detectable warning pads



Replace sign panel on school zone assembly to read "15 mph school zone when flashing"

Shenandoah Elementary



Provide crosswalk and access ramps



Provide access ramps and detectable warning pads

Fairlawn Elementary



Upgrade school crossing signs and ADA facilities



Provide crosswalk and detectable warning pads

James H. Bright Elementary



Upgrade school crossing signs and ADA facilities



Refurbish worn school speed zone sign

Kinloch Park Elementary and Middle Schools



Provide pedestrian access ramps and detectable warning pads



Construct a paved sidewalk along NW 45 Avenue south of SW 9 Street

Hialeah Gardens Elementary



Construct a paved sidewalk along proposed pedestrian route on Frontage Road



Realign crosswalk and construct crosswalk ramps

Nathan B. Young Elementary



Provide a crosswalk across NW 141 Street



Remove raised median within crosswalk

3.0 SRTS RECOMMENDATIONS

The primary focus area for SRTS improvements is the street network within 0.5 miles of a school. While SRTS funding guidelines allow improvements within two miles of a school, improvements closer to a school generally have a greater benefit than improvements farther away from a school. Where needed, the study area was expanded beyond 0.5 miles.

The improvement recommendations were developed through the following efforts:

- Field reviews were conducted to observe existing infrastructure. Please note that the project schedule did not allow observation of students' walking patterns (as field reviews were conducted when the schools were closed for summer vacation).
- Meetings were conducted with school staff to obtain input on the infrastructure improvement needs and routes used by student pedestrians.
- Preliminary improvements were presented to MDCPS, PWWMD, FDOT and Miami-Dade MPO. A meeting was held with PWWMD staff to address their comments.
- Subsequent field reviews were conducted to identify additional improvements based on the stakeholder input.

To develop SRTS infrastructure improvements, guidelines developed by the Miami-Dade MPO, FDOT, NCSRTS, and FDOT were reviewed. Specific documents referenced during the development of SRTS recommendations are listed below.

- *Safe Routes to School Program Procedure Manual*, Miami-Dade MPO, 2005.
- *Safe Routes to School Guide*, Pedestrian and Bicycle Information Center and National Center for Safe Routes to School, 2007.
- *Safe Ways to School Tool Kit*, University of Florida and Florida Department of Transportation.
- *Manual on Uniform Traffic Control Devices (MUTCD)*, Federal Highway Administration, 2009.

3.1 Coordination

As explained in this chapter, meetings were conducted with school staff and stakeholder agencies to obtain input for the study and review draft recommendations. A study advisory committee (SAC) consisting of staff from the Miami-Dade MPO, MDCPS, PWWMD, University of Miami's WalkSafe, and FDOT was formed. Coordination with the SAC included presentations, conference calls and one-on-one meetings. Miami-Dade County's PWWMD staff reviewed draft recommendations and cost estimates, since the County is primarily responsible for the implementation of SRTS improvements.

Table 2 summarizes stakeholder meetings. A copy of the PowerPoint presentation made during the SAC meeting on August 19, 2013 is included in Appendix B.

Table 2: SRTS Stakeholder Meetings

Date	Stakeholder(s)	Summary
4/24/2013	Educational Excellence School Advisory Council meeting at Nathan B Young Elementary	Discussion on SRTS program goals and specific infrastructure improvement needs.
5/31/2013	School Board's CTST Sub-Committee	Selection of schools for SRTS grant application.
6/13/2013	School staff at Nathan B Young and City of Opa-Locka officials	Explained SRTS program goals and obtained input on specific infrastructure improvement needs.
7/10/2013	School staff at Citrus Grove and James H. Bright Elementary Schools	Explained SRTS program goals and obtained input on specific infrastructure improvement needs.
7/11/2013	School staff at Hialeah Gardens Elementary	Explained SRTS program goals and obtained input on specific infrastructure improvement needs.
7/16/2013	School staff at Sunny Isles Beach Community K-8	Explained SRTS program goals and obtained input on specific infrastructure improvement needs.
8/19/2013	Study Advisory Committee	Presented an overview of SRTS plans and preliminary recommendations.
8/20/2013	City of Opa-Locka's Building A Healthy Community Advisory Council	Explained SRTS program goals and obtained input on draft recommendations.
9/12/2013	School staff at Morningside K-8 Academy	Explained SRTS program goals and obtained input on specific infrastructure improvement needs. Discussed safety improvements at railroad grade crossings.
9/19/2013	PWWMD staff	To discuss PWWMD staff's input on draft recommendations.

3.2 Site Assessment

The consultant conducted site assessments to observe, traffic control devices, roadway environment, and pedestrian facilities. Where necessary, field reviews were extended beyond 0.5 miles to assess the need for improvements in areas with a concentration of residential developments or student walkers. Such areas were identified based on the input provided by school staff. The land use, crash data, 'where students live' and aerial maps were also used to identify residential areas and potential safe routes. Some of the factors considered when identifying safe routes included:

- Route directness
- Potential student population served
- Input provided by school staff
- Existing traffic control devices
- Traffic volume, number of lanes, and speed limit
- Crash history
- Roadway surrounding (land uses) and potential risk elements
- Right-of-way availability
- Implementation feasibility and potential cost implications



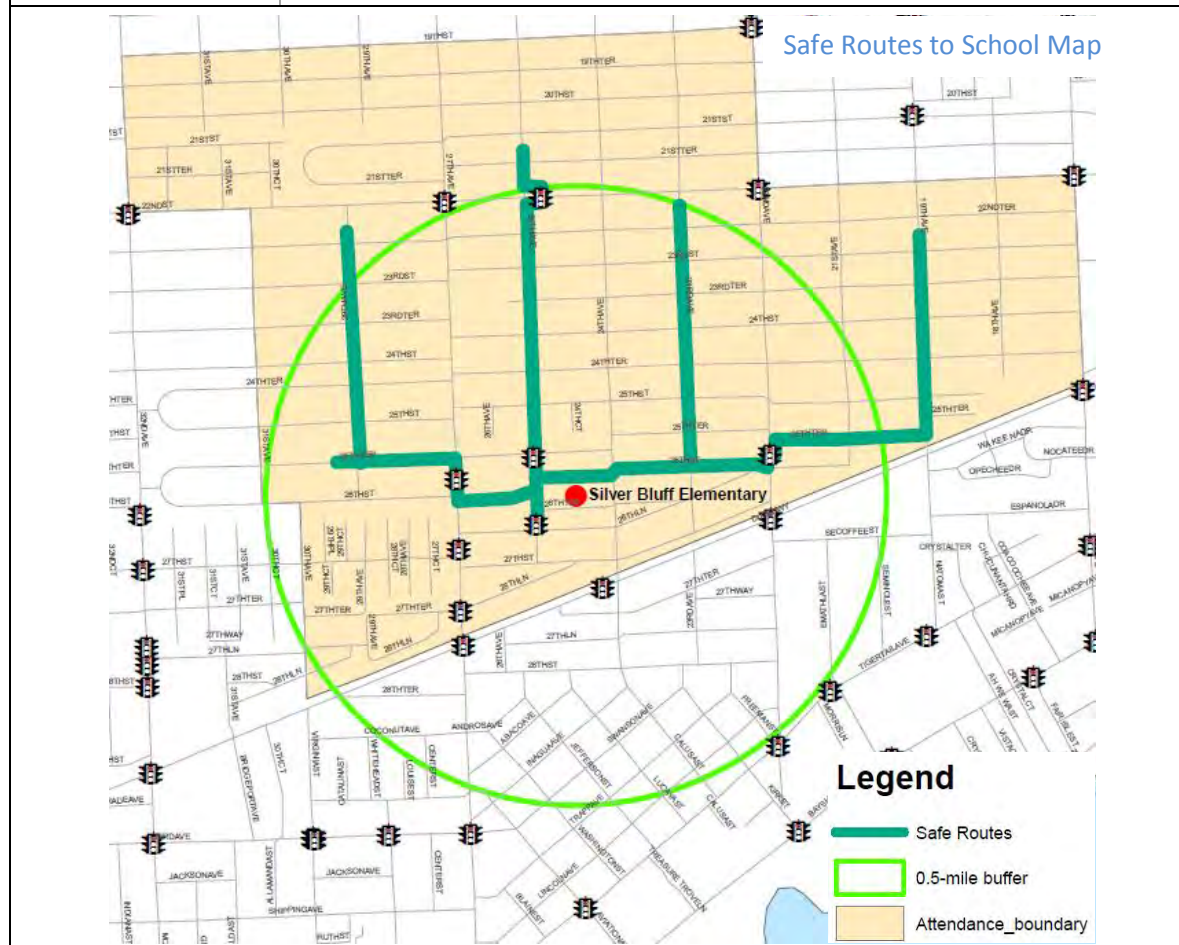
3.3 Recommendations

Common SRTS recommendations include sidewalks, crosswalks, school crossing signs, and pedestrian signal features at signalized crossings. Since SRTS is a federal grant program, recommendations were made for new or upgraded Americans with Disabilities Act (ADA) facilities for pedestrians within proposed safe routes. Existing signs and pavement markings that do not meet the current MUTCD standards were recommended for replacement. Maintenance issues such as overgrown landscaping that reduces visibility of signs and signals, and damaged signs were also identified for notification to the appropriate agencies.

R J Behar and Associates developed cost estimates for the proposed improvements based on the FDOT's unit rates. Preliminary engineering, construction engineering inspection, maintenance of traffic, mobilization, and contingency costs were estimated based on the rates recommended in the FDOT's SRTS project development guidelines. Bicycle and pedestrian crashes, safe routes, and cost estimates, are included in Appendix C.

The following fact sheets and figures provide a summary of the SRTS recommendations by school.

School	Silver Bluff Elementary
Address	2609 SW 25 Avenue, Miami, FL 33133
Enrollment	575
Estimated students living within 0.5 miles	204
Estimated percent of students walking/biking	5%
Recommendations	Countdown pedestrian signals, crosswalks, signage, and ADA improvements
Cost	\$103,000





School	Citrus Grove Elementary
Address	2121 NW 5 Street, Miami, FL 33125
Enrollment	911
Estimated students living within 0.5 miles	368
Estimated percent of students walking/biking	25%
Recommendations	Countdown pedestrian signals, crosswalks, signage, and ADA improvements
Cost	\$169,000



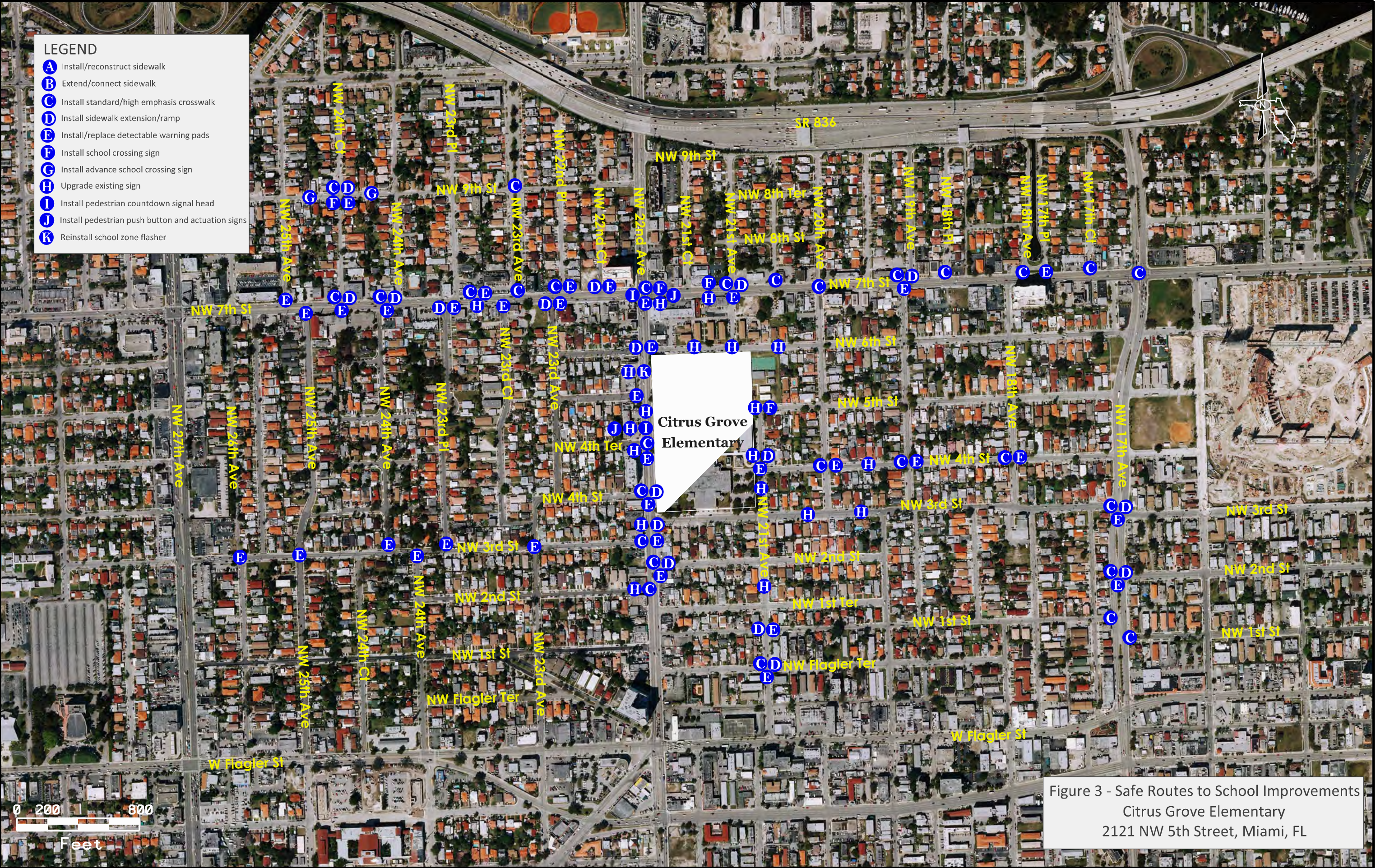


Figure 3 - Safe Routes to School Improvements
Citrus Grove Elementary
2121 NW 5th Street, Miami, FL

School	Sunny Isles Beach K-8 Community School
Address	201 182 Drive, Sunny Isles Beach, FL 33160
Enrollment	1,796
Estimated students living within 0.5 miles	242
Estimated percent of students walking/biking	65%
Recommendations	Crosswalks, signage, and ADA improvements
Cost	\$57,000



LEGEND

- A** Install/reconstruct sidewalk
- B** Extend/connect sidewalk
- C** Install standard/high emphasis crosswalk
- D** Install sidewalk extension/ramp
- E** Install/replace detectable warning pads
- F** Install school crossing sign
- G** Install advance school crossing sign
- H** Upgrade existing sign
- I** Install pedestrian countdown signal head
- J** Add "school" pavement markings
- K** Relocate school zone flasher

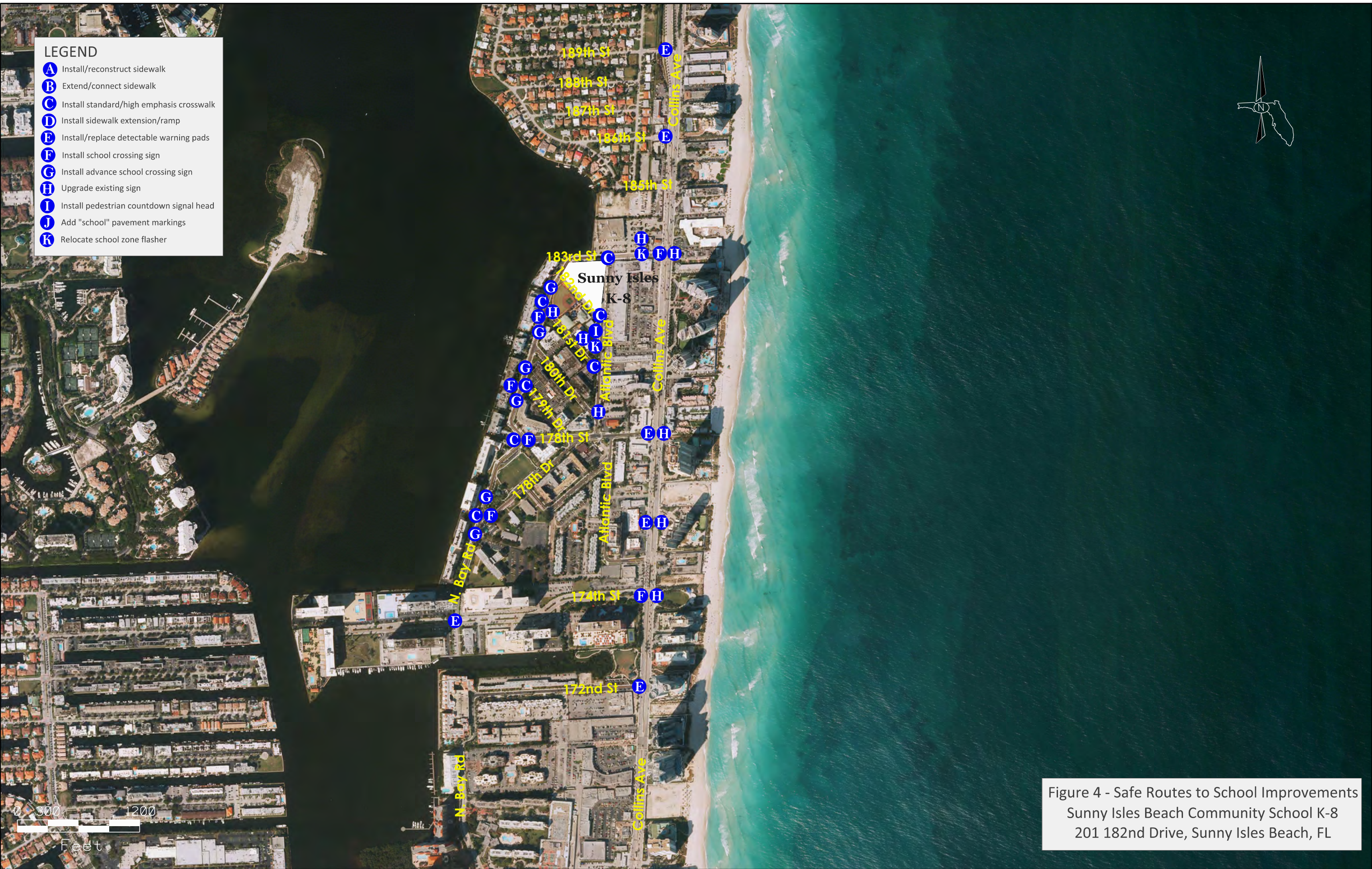
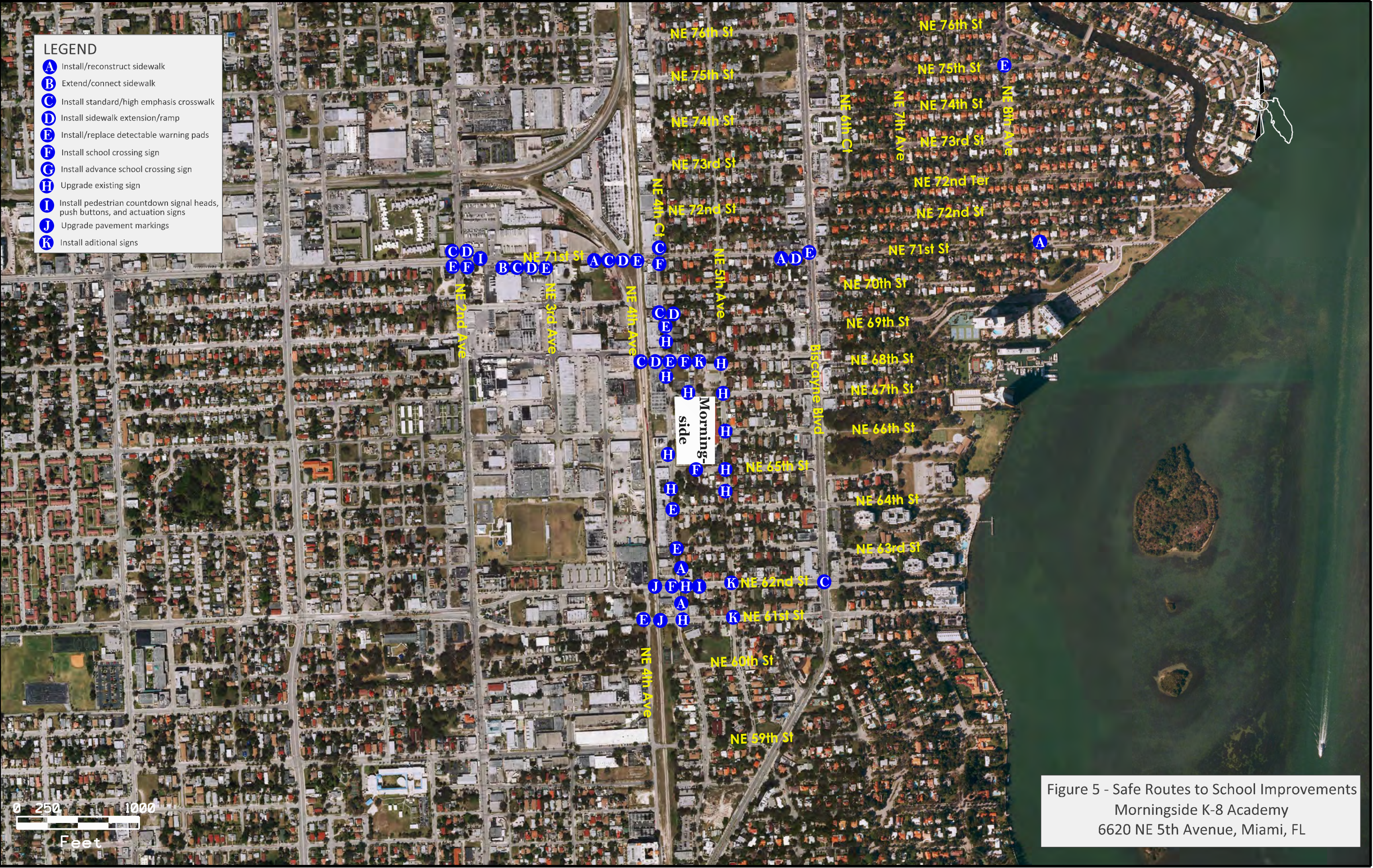


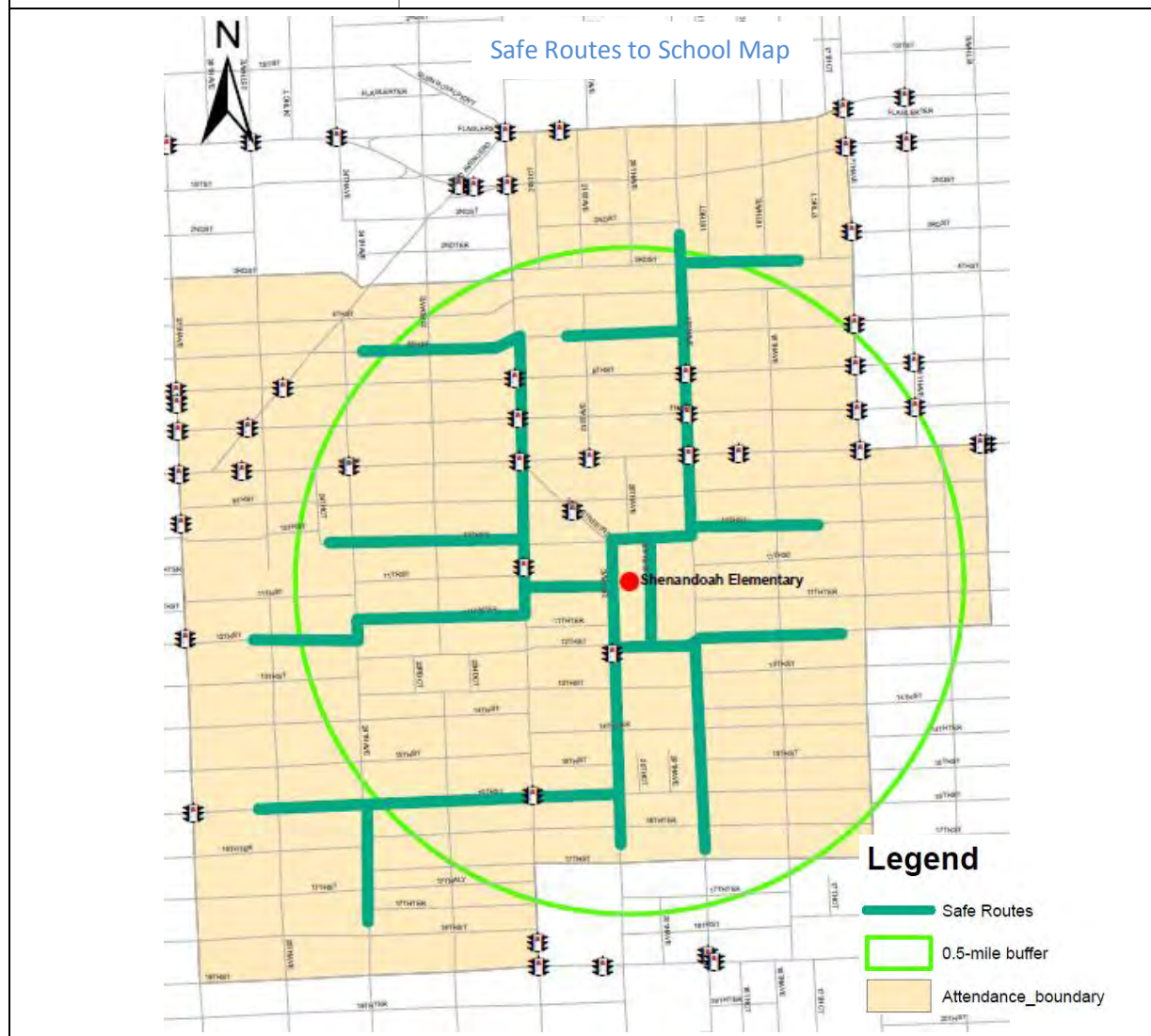
Figure 4 - Safe Routes to School Improvements
Sunny Isles Beach Community School K-8
201 182nd Drive, Sunny Isles Beach, FL

School	Morningside Elementary
Address	6620 NE 5 Avenue, Miami, FL 33138
Enrollment	452
Estimated students living within 0.5 miles	149
Estimated percent of students walking/biking	45%
Recommendations	Countdown pedestrian signals, sidewalks, crosswalks, signage, and ADA improvements
Cost	\$138,000



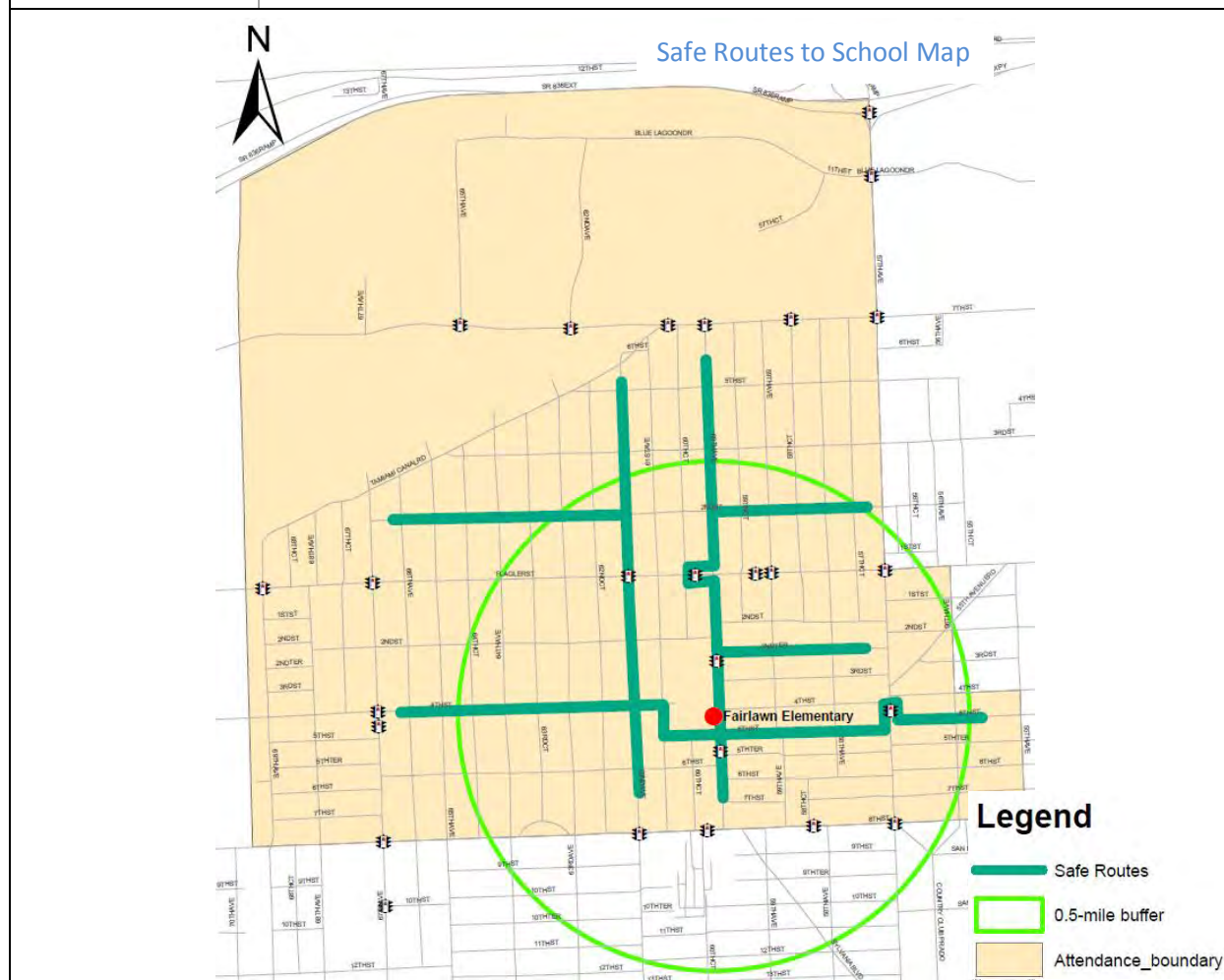


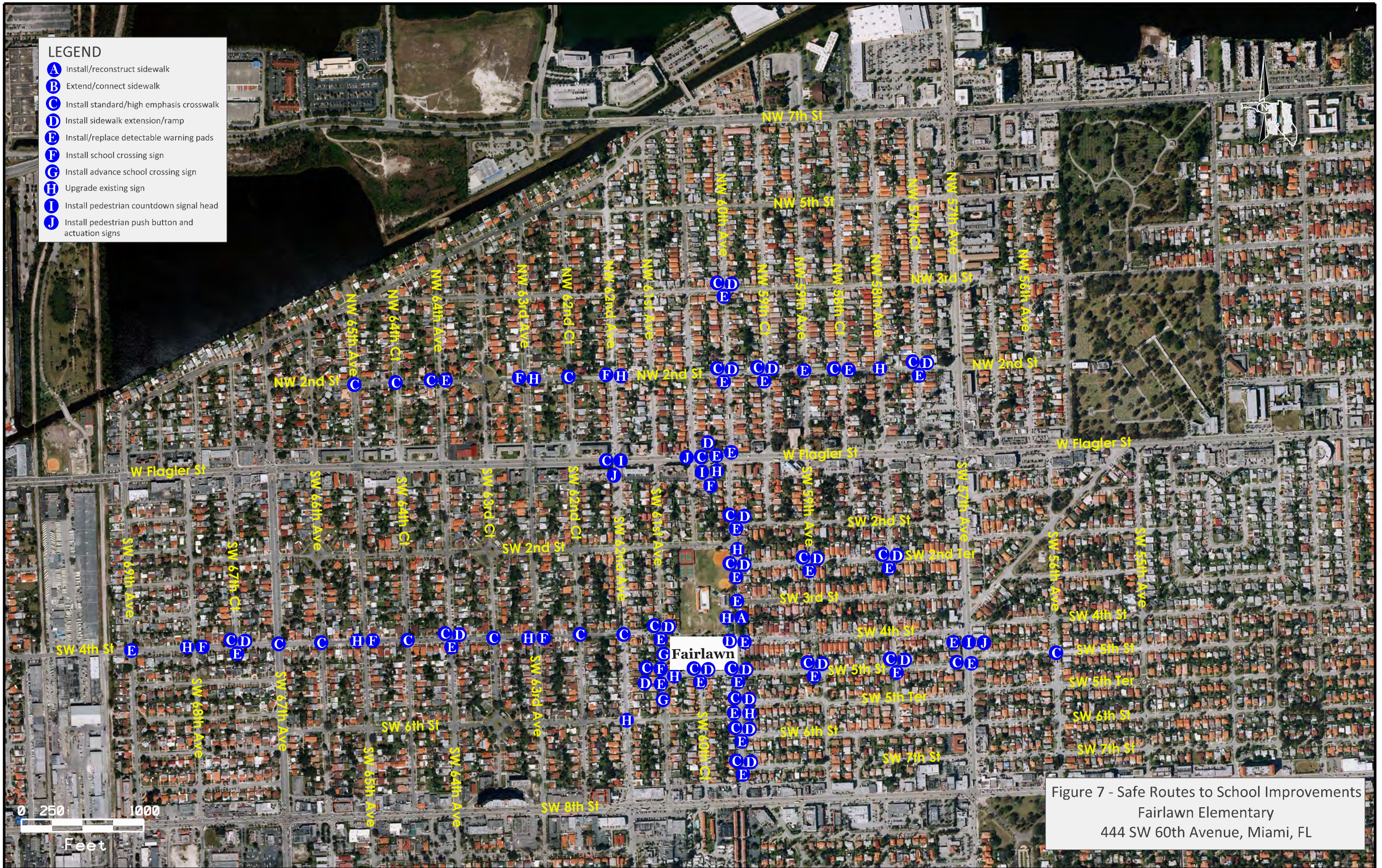
School	Shenandoah Elementary
Address	1023 SW 21 Avenue, Miami, FL 33135
Enrollment	1,058
Estimated students living within 0.5 miles	324
Estimated percent of students walking/biking	50%
Recommendations	Countdown pedestrian signals, crosswalks, signage, and ADA improvements
Cost	\$207,000



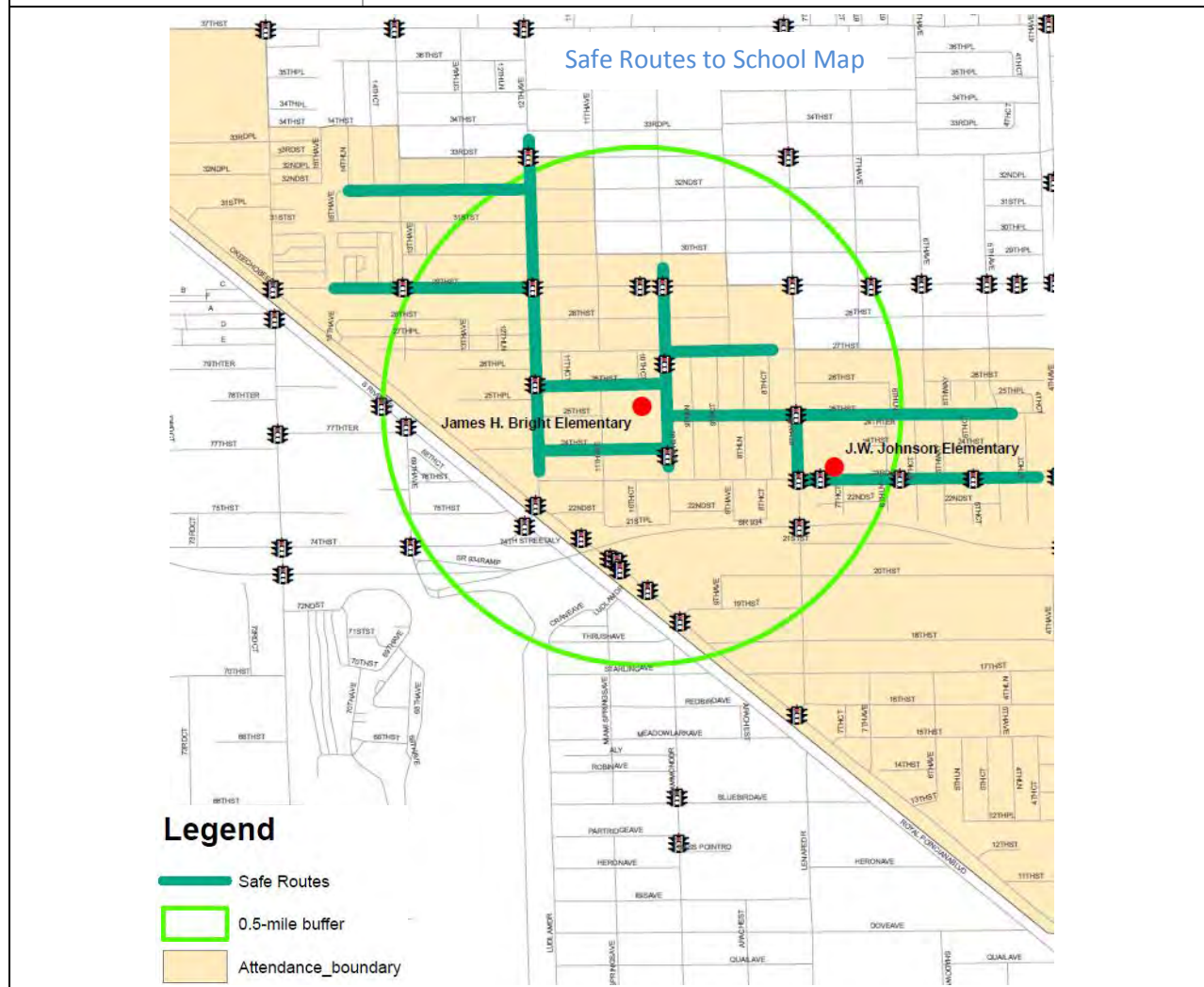


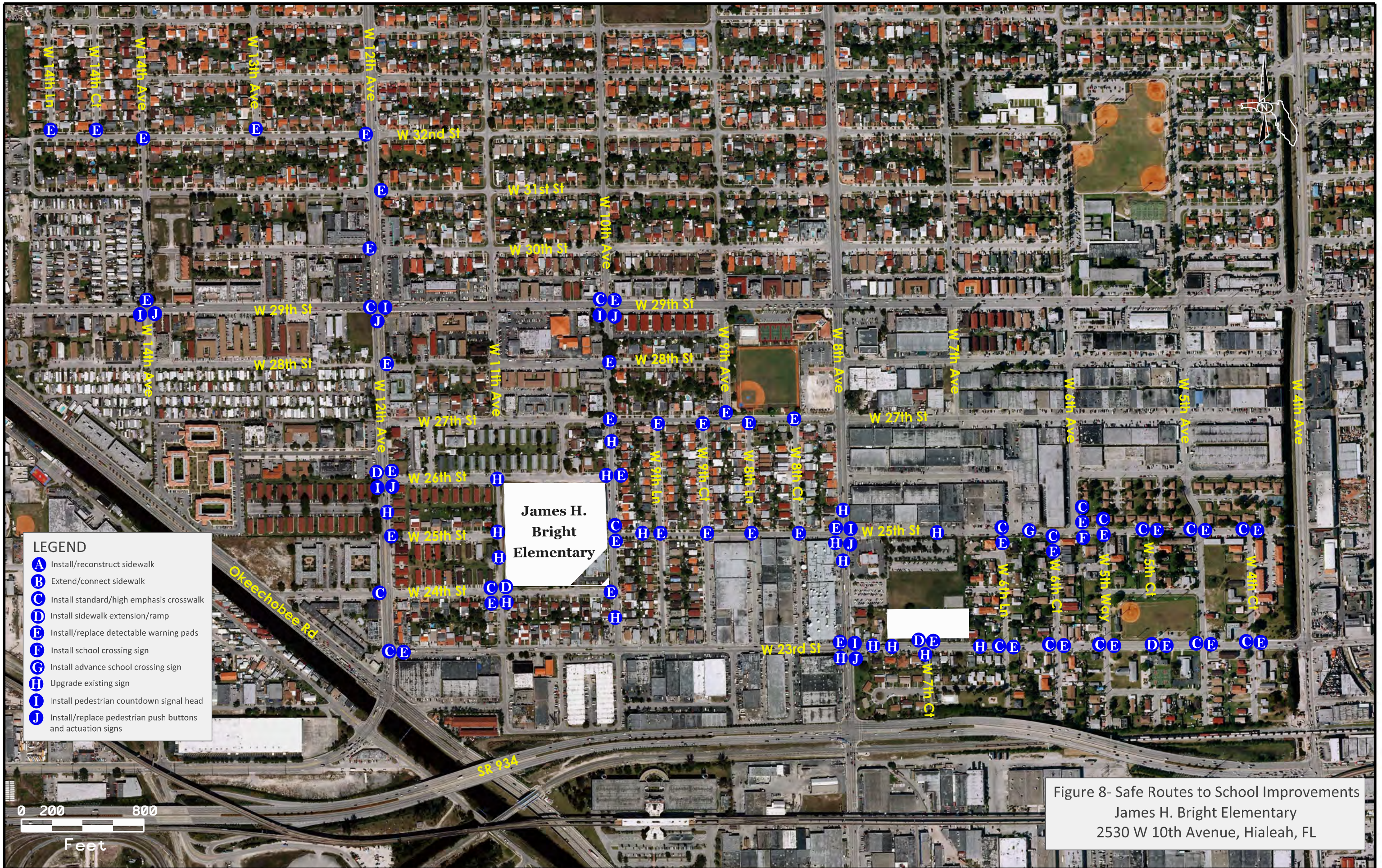
School	Fairlawn Elementary
Address	444 SW 60 Avenue, Miami, FL 33144
Enrollment	684
Estimated students living within 0.5 miles	256
Estimated percent of students walking/biking	15%
Recommendations	Countdown pedestrian signals, sidewalks, crosswalks, signage, and ADA improvements
Cost	\$177,000





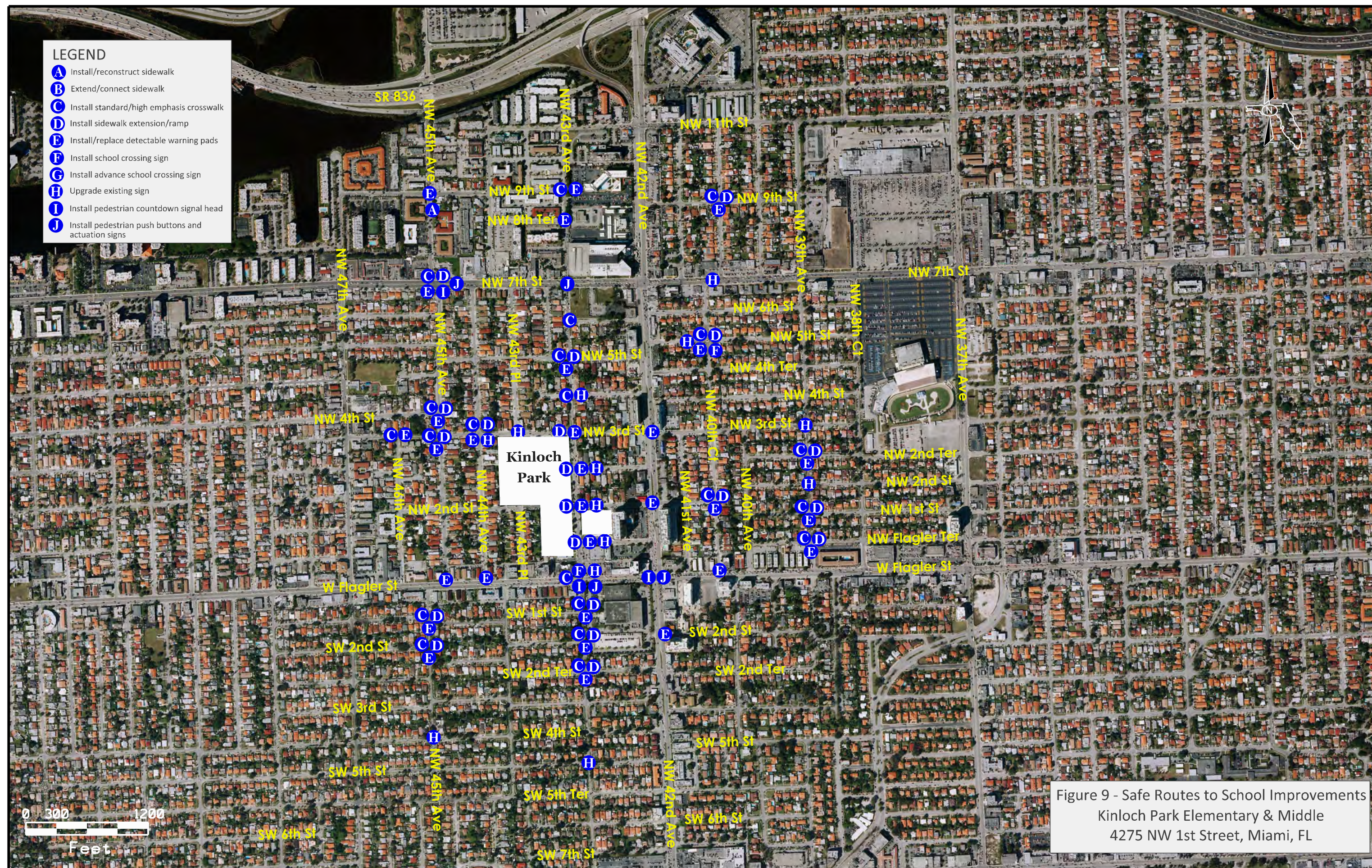
School	James H. Bright Elementary
Address	2530 W 10 Avenue, Hialeah, FL 33010
Enrollment	800
Estimated students living within 0.5 miles	320
Estimated percent of students walking/biking	8%
Recommendations	Countdown pedestrian signals, crosswalks, signage, and ADA improvements
Cost	\$204,000





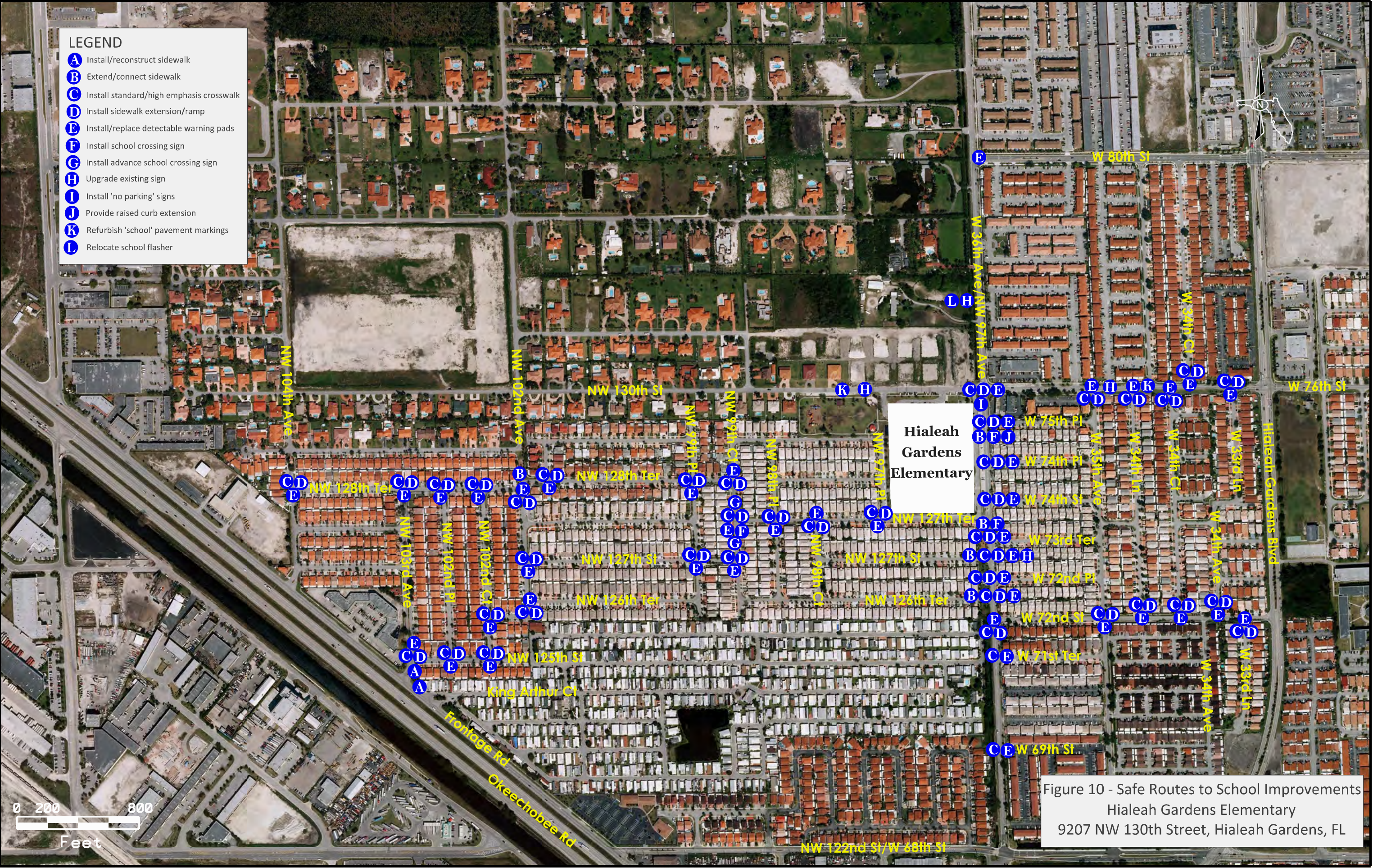
School	Kinloch Park Elementary and Middle Schools
Address (Elementary)	4275 NW 1 Street, Miami, FL 33126
Enrollment	2101 (both schools)
Estimated students living within 0.5 miles	488 (both schools)
Estimated percent of students walking/biking	10%
Recommendations	Countdown pedestrian signals, sidewalks, crosswalks, signage, and ADA improvements
Cost	\$175,000





School	Hialeah Gardens Elementary
Address	9702 NW 130 Street, Hialeah Gardens, FL 33018
Enrollment	927
Estimated students living within 0.5 miles	370
Estimated percent of students walking/biking	20%
Recommendations	Curb extensions, sidewalks, crosswalks, signage, and ADA improvements
Cost	\$166,000

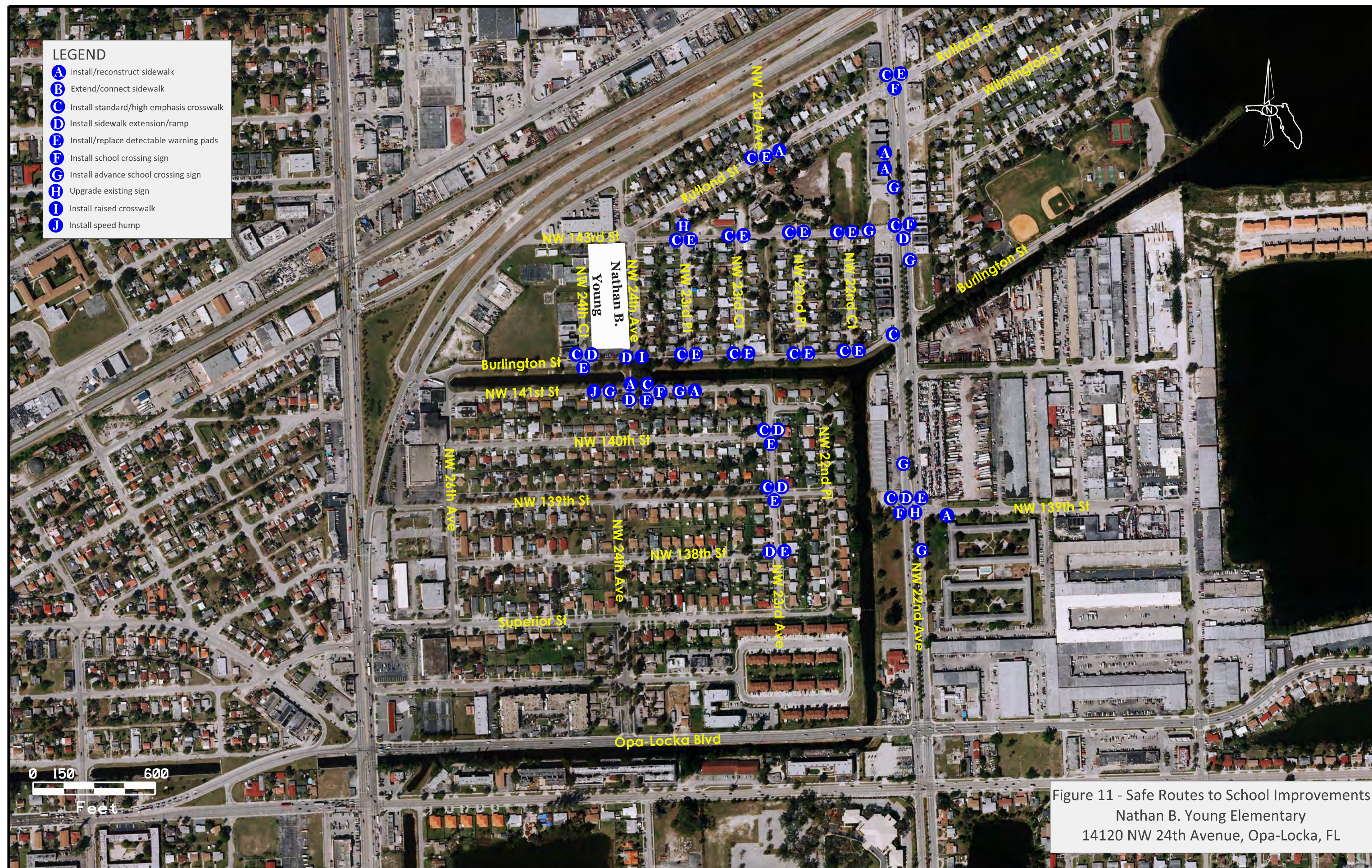




Safe Routes to School Map

Legend

- Safe Routes
- 0.5-mile buffer
- Attendance_boundary



4.0 SRTS GRANT APPLICATIONS

The SRTS program under MAP-21 is eligible for Transportation Alternative Program (TAP) funding. TAP funds are administered by the FDOT at the district level. The application guidelines for SRTS projects under MAP 21 are identical to the FDOT guidelines established when projects were funded through a dedicated funding source under SAFETEA-LU.

4.1 SRTS Grant Applications

Ten grant applications were submitted to the FDOT District Six requesting funding for the proposed SRTS infrastructure improvements. The total funding request of the 10 applications is approximately \$1.5 million. A summary of the funding request is provided in Table 3. The grant applications also identified education, encouragement, and enforcement strategies, which could complement engineering improvements, to implement a comprehensive SRTS program. Miami-Dade County is the implementation agency for these SRTS projects.

Table 3: Summary of SRTS Grant Request

School	Funding Request ¹
Silver Bluff Elementary	\$103,000
Citrus Grove Elementary	\$169,000
Sunny Isles Beach K-8 Community School	\$57,000
Morningside Elementary	\$138,000
Shenandoah Elementary	\$207,000
Fairlawn Elementary	\$177,000
James H. Bright Elementary	\$204,000
Kinloch Park Elementary and Middle Schools	\$175,000
Hialeah Gardens Elementary	\$166,000
Nathan B. Young Elementary	\$82,000
Total	\$1,487,000

1. Rounded to the nearest \$1,000.

5.0 PRIORITIZATION CRITERIA

During the *Safe Routes to School Plans 2011* study, a quantitative method was developed for prioritizing elementary and K-8 schools for SRTS infrastructure improvements. A quantitative prioritization was introduced to remove the subjectivity and streamline the process of identifying schools with the greatest need for SRTS infrastructure improvements. The factors included in the 2011 prioritization criteria are listed below.

- Number of students living within 0.5 miles (of the school)
- Bicycle and pedestrian crashes within school's attendance boundary
- Juvenile pedestrian crashes within school's attendance boundary
- Percent of students walking to school
- Traffic volume on the nearest major road
- Automobile ownership within school's attendance boundary

After the development of a prioritized list of schools using the above factors, the strength of prioritization factors was assessed through a review of the prioritization results. Based on the review, a recommendation was made to consider replacing the 'automobile ownership' factor potentially with 'percentage of students eligible for free or reduced lunch.' The 'automobile ownership' data were obtained from socio-economic data projections for travel demand models and are available at Traffic Analysis Zone (TAZ) levels, whereas the other factors are specific to each school. Therefore, 'percentage of students eligible for free or reduced lunch' was deemed a more school-specific and a potentially stronger indicator of income levels of parents that may contribute to the determination of student's travel mode to and from the school.

5.1 Updated Prioritization Criteria

The prioritization criteria were updated with the replacement of 'automobile ownership' with the 'percentage of students eligible for free or reduced lunch' data available from the MDCPS. Further, 'number of students living within 0.5 miles' was modified to 'percent of students living within 0.5 miles.' This revision was made to achieve consistency among student population specific factors used for prioritization (i.e., 'percent of students living within 0.5 miles,' 'percent of students walking to school,' and 'percent of students eligible for free or reduced lunch.')

Table 4: Updated Prioritization Factors

Factor	Notes
Percent of students living within 0.5 miles	The proximity of student's residence to school is likely to impact the propensity to walk to school. Therefore, schools with a high proportion of students living within a 0.5-mile radius could gain greater benefits through SRTS infrastructure improvements. The percent of students living within 0.5 miles was estimated based on the information provided by MDCPS using its GIS resources.
Bicycle and pedestrian crashes	A high number of pedestrian and bicycle crashes may represent unsafe conditions and inadequate infrastructure. Crash data were obtained for the seven-year period between 2005 and 2011.
Juvenile pedestrian crashes	A history of juvenile pedestrian crashes may be an indicator of safety challenges experience by student pedestrians and could also be a potential factor in the parents' decision making on student's travel mode to school. Crash data were obtained for the seven-year period between 2005 and 2011.
Percent of students walking to school	SRTS improvements targeting schools with a high percentage of student pedestrians could encourage more students to walk to school and remove barriers that cause students to walk in less than ideal conditions. This information is collected by WalkSafe annually through surveys.
Traffic volume on the nearest major road	The presence of a nearby major street is likely to present a barrier for safe walking to school. Traffic data were obtained from the FDOT and Miami-Dade County.
Percent of students eligible for free or reduced lunch	Eligibility for free/reduced lunch program is considered to be a surrogate variable of income and hence a determining factor of student's travel model to school. This information was obtained from MDCPS.

Similar to the 2011 study prioritization, 'percent of students walking to school' was assumed to be the most influential factor and was weighted by a factor of two.

5.2 Ranking of Schools

A list of K-8 public schools in Miami-Dade County was obtained from MDCPS. After eliminating the schools with SRTS plans already been developed, a total of 132 schools were identified for prioritization. The data were obtained for each factor listed in Table 4. Thereafter, schools were prioritized using the process outlined below.

- Rank schools based on the six individual factors. The result of this step is six separate ranks based on individual variables.
- Apply a factor of two to the 'percent of students walking to school' factor.
- Calculate a composite ranking based on the individual rankings to develop a prioritized list of schools for consideration of future SRTS plan development.

Although quantitative data were used to evaluate the schools, this is not a validated model with a known level of accuracy. Based on the rankings, the schools were grouped into quartiles and mapped to visualize potential spatial distribution patterns. In general, the majority of first quartile schools (ranked 1-33) are located in the east and northeast portions of Miami-Dade County within the cities of Miami, North Miami and Miami Gardens. Several first quartile schools are located in the vicinity of I-95 corridor. The second, third, and fourth quartiles include more sub-urban area schools (i.e., northwest, west and southwest areas). Appendix D includes the comprehensive ranking list and maps depicting the geographic distribution of prioritized schools grouped by the quartiles.

Figure 12: Results of Prioritization – Schools Grouped into Quartiles

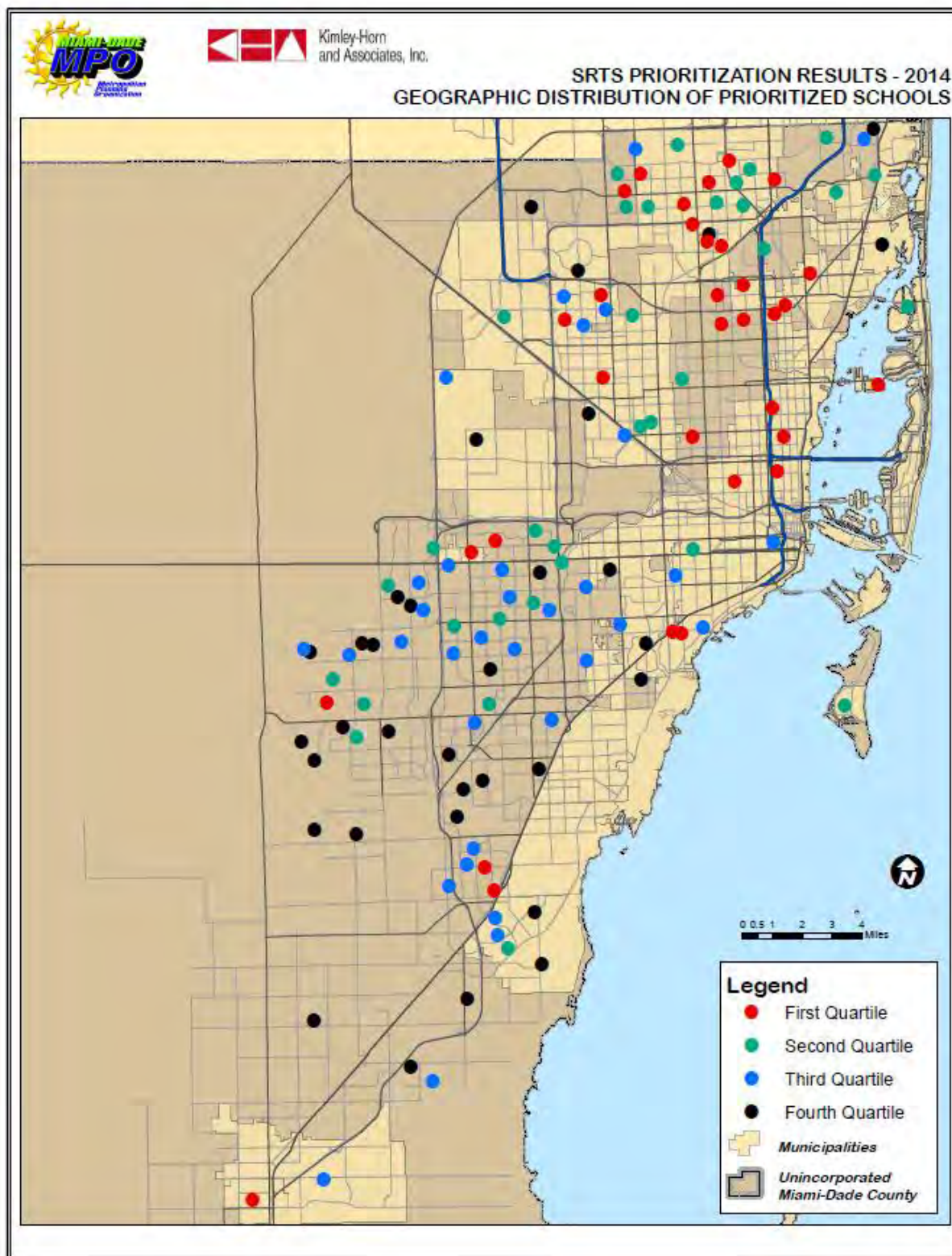
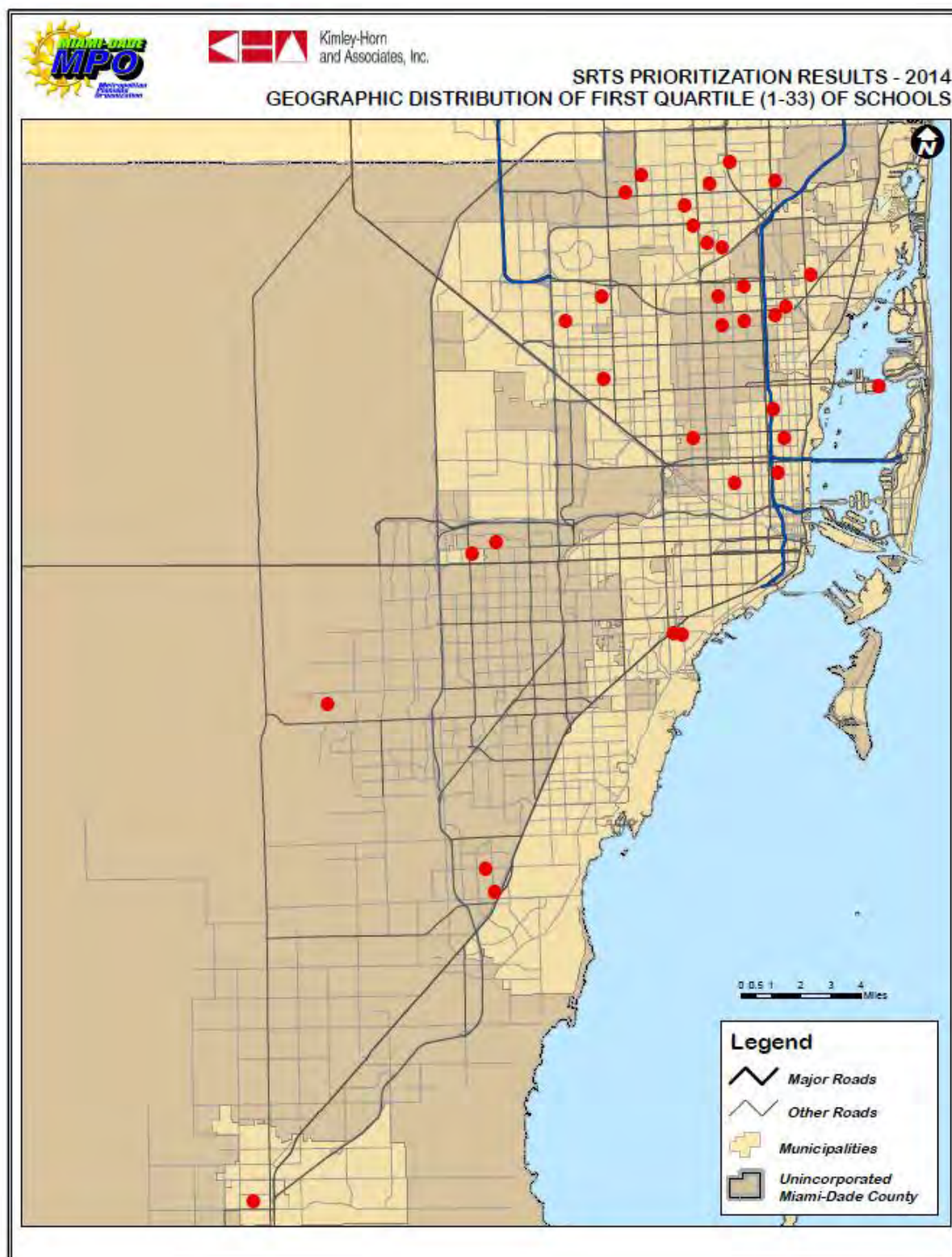


Figure 13: Results of Prioritization –Schools in the First Quartile



6.0 SUMMARY

The *Safe Routes to School 2013 Infrastructure Plans* study was conducted develop SRTS infrastructure plans and grant applications for 10 K-8 schools in Miami-Dade County. These schools were selected by the MDCPS based on the prioritized list of schools developed by the Miami-Dade MPO. The SRTS improvements were developed in coordination with PWWMD, MDCPS, and school staff. The primary focus area of infrastructure improvements is a 0.5-mile radius surrounding the school. Typical SRTS recommendations include sidewalks, crosswalks, school crossing signs, and facility improvements for disabled pedestrians (in accordance with ADA guidelines).

Ten SRTS grant applications were submitted to FDOT District Six requesting funding for the proposed infrastructure improvements through the Transportation Alternatives Program. The total value of the proposed SRTS improvements is approximately \$1.5 million with individual applications ranging between \$57,000 and \$207,000. Further, opportunities for education, encouragement, and enforcement strategies, which could complement engineering improvements, were also identified.

This study also updated the SRTS prioritization criteria that were initially developed through the *Safe Routes to School Plans 2011* study. The purpose of the prioritization criteria is to identify schools for SRTS improvements. The revised prioritization criteria were applied to rank the eligible K-8 public schools for future SRTS improvements. In general, the majority of highest ranked schools are located in the east and northeast portions of Miami-Dade County within the cities of Miami, North Miami and Miami Gardens.