



# VILLAGE OF PALMETTO BAY

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### SOUTHWOOD MIDDLE SCHOOL TRAFFIC STUDY



FINAL

**AUGUST 2004**

Prepared by:



Transportation Planning • Traffic Engineering • Project Development • Highway Design  
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# **VILLAGE OF PALMETTO BAY SOUTHWOOD MIDDLE SCHOOL TRAFFIC STUDY**

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## EXECUTIVE SUMMARY

The purpose of this study is to identify current school area traffic circulation needs, assess existing traffic conditions, conduct public neighborhood meetings and develop recommendations for improvement of vehicular/pedestrian traffic circulation in Southwood Middle School within the Village of Palmetto Bay in Miami-Dade County.

Marlin Engineering performed a preliminary assessment of the existing traffic conditions in the study area. As part of this task, preliminary interviews with school principals and officials, and a meeting with Miami-Dade Traffic Engineering Division were conducted. A methodology of analysis was developed including treatment of data collected, parameters of analysis procedures and methodology for definition of potential solutions. The preliminary assessment effort was documented in the Project Definition Report (PDR), reviewed and approved by the Village.

The study proceeded with field investigations and public meeting held during the month of March of 2004. Also, a signage inventory at school areas, traffic data collection, on parking accumulation, and queue measurements of congestion at pick-up/drop-off zones were part of the study. Field observations indicated inefficiencies in the traffic flow of school buses and private vehicles along the roads servicing the four schools. Traffic operation issues have been identified related to safer circulation of vehicles and pedestrians, illegal parking, need for additional parking areas, improvement of pick-up/drop-off zones, need for uniformity and better adequacy of signing and pavement markings and minimize impact on school neighborhood.

Analyses of documentation on field observations, public meetings and data collection were used to identify impact of traffic issues, develop and recommend the alternative solution shown in **Section 7**. In addition, the development of a comprehensive traffic calming and neighborhood management plan is suggested for local residential streets around the school area within the Village, to maintain or improve quality of life.

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## **1.0 Introduction**

The purpose of this report is to identify current school area traffic circulation needs, assess existing traffic conditions, conduct public neighborhood meetings, and develop recommendations for improvement of vehicular/pedestrian traffic circulation in Southwood Middle School (**Exhibit 1**).

## **2.0 Background**

The Village of Palmetto Bay has selected Marlin Engineering, Inc. to perform a traffic study, within the existing contract agreement, for each of the four public schools in the village. Currently, traffic problems are experienced during student drop off and pick up times in the morning and afternoon peak periods, respectively. In recent months, several complaints have been received from parents and residents on traffic congestion and insufficient parking, and the Village is responding with the assessment and recommendations documented in this report.

Marlin Engineering performed a preliminary assessment of the existing traffic conditions in the study area. As part of this task, a methodology of analysis was developed including treatment of data collected, parameters of analysis procedures and methodology for definition of potential solutions. The preliminary assessment effort was documented in the Project Definition Report (PDR) that was prepared for the Village's review and approval. The identification of traffic problems, evaluation and preparation of recommended solutions for implementation, including cost estimate, will be documented in draft and final reports for the study area.

## **3.0 Goals and Objectives**

The primary objectives of the traffic study include the evaluation and recommendations to mitigate identified issues at school location. Traffic operation issues related to circulation of vehicles and pedestrians, utilization of parking areas, adequacy of signing and pavement marking, school routes, pedestrian crossings and signalization, will be included in the assessment of needs.



Exhibit 1 - School Locations and Land Use

#### **4.0 Study Methodology**

As required by the Scope of Work, the following methodology was implemented for Southwood Middle School Traffic Study for the Village of Palmetto Bay:

1. Review of data provided by the Village of Palmetto Bay
2. Collect and review traffic related information (traffic counts, existing signal timing, future roadway improvement plans, school expansion programs and policies) from State, County and school officials
3. Compile collected information in report tabulation format
4. Preliminary field assessment of roads and traffic operations during school pick up and drop off periods, and definition of issues.
5. Develop Project Definition Report (PDR) identifying needs, methodologies and goals. Deliverables per Scope of Work.
6. Meet with Village officials to discuss PDR results and revise PDR per discussions.
7. Field assessment and evaluation of existing traffic operation conditions and analysis using current parameters defined by current editions of Miami-Dade County Standards; Florida Department of Transportation "Manual of Traffic Studies" and "Roadway and Traffic Design Standards, January 2004", and the Federal Highway Administration "2003 Manual of Uniform Traffic Control Devices" and "2000 Highway Capacity Manual" (HCM2000).
8. Conduct Public Meetings for Southwood Middle School.
9. Collect traffic data for parking accumulation and queue studies at school area.
10. Conduct sign inventory around the school areas.
11. Develop concept alternative solutions for each school area.
12. Prepare draft report (75% Submittal) with identification of problems, compilation of data and development of alternatives. Deliverables will be per Scope of Work.
13. Submit Draft Traffic Study Report to the Village for review and comments.
14. Conduct second set of Public Meeting for Southwood Middle School.
15. Prepare draft report (100% Submittal) with identification of problems, evaluation and recommendations of revised alternatives for implementation, and cost estimate. Deliverables per Scope of Work.
16. Submit Draft Traffic Study Report to the Village for review and comments.
17. Incorporate comments and submit four Final Traffic Study Reports, one for each school. Deliverables per Scope of Work.

#### **5.0 Existing Conditions for Southwood Middle School**

For existing conditions related to traffic issues on Southwood Middle School and neighborhood areas have been identified throughout field observations during the study,

and comments from officials, parents and neighborhood residents, received at public meeting held during March of 2004. For reference to neighborhood and school, a site plan is presented in **Exhibit 2**. Photographs documenting field observations for this school are presented in **Appendix A**. Detailed list of comments and references from public meetings are documented in **Appendix B**.

## 5.1 Field Observations

**Pedestrian/Student crossing safety:** Three pedestrian crossings, on SW 80<sup>th</sup> Avenue, are located on SW 162<sup>nd</sup>, SW 163<sup>rd</sup> and 164<sup>th</sup> Street, next to the school. The *first school crossing* is at the SW 80<sup>th</sup> Avenue and SW 162<sup>nd</sup> Street intersection. This four-way stop controlled intersection has designated crosswalks on east, north, and west approaches. No school guard is assigned to this intersection. Signs and pavement markings at the intersection are functional. SW 80<sup>th</sup> Avenue operates northbound only, from south of the intersection between SW 162<sup>nd</sup> Street and SW 164<sup>th</sup> Street, during school days between 8:30-9:15 AM and 3:15-4:15 PM. The intersection operation is acceptable, however, some vehicles were observed illegally turning south from SW 162<sup>nd</sup> Street eastbound. A *second school crossing* is on the east side of the T-intersection, on SW 164<sup>th</sup> Street and SW 80<sup>th</sup> Avenue. This crossing is parallel to SW 80<sup>th</sup> Avenue and used by students to and from school. Also, there were students on bicycle, using the east sidewalk and crossing on SW 80<sup>th</sup> Avenue. A school security staff member is assigned to this crossing between 3:15 and 4:15 PM.

**Traffic congestion:** SW 80<sup>th</sup> Avenue northbound is used by school bus traffic to access the designated bus pick up/drop-off lane during the AM and PM periods. Also, vehicles accessing from the south are parking or picking-up/ dropping-off students, illegally, on the bus lane, especially during the AM period. In addition, some vehicles park off-pavement on the west side of the road in both AM and PM periods. Proper signage and additional "Buses Only" message on the pavement should be considered to improve designated operation. SW 162<sup>nd</sup> Street is being used by vehicles to drop-off students on a designated bus lane along the south side of the road in the AM period. No school buses used this road during the AM period, however, the buses use this road to pick-up students in the PM period. SW 163<sup>rd</sup> Street is being used to access the school drop-off/pick-up areas and for illegal parking during both AM and PM periods. SW 164<sup>th</sup> Street is used by parents, to drop-off/pick up students during the AM and PM periods. SW 164<sup>th</sup> Street is under utilized for pick-up/drop-off. Parents should be encouraged to use this road instead of SW 80<sup>th</sup> Avenue. Expansion of this pick-up/drop-off zone and

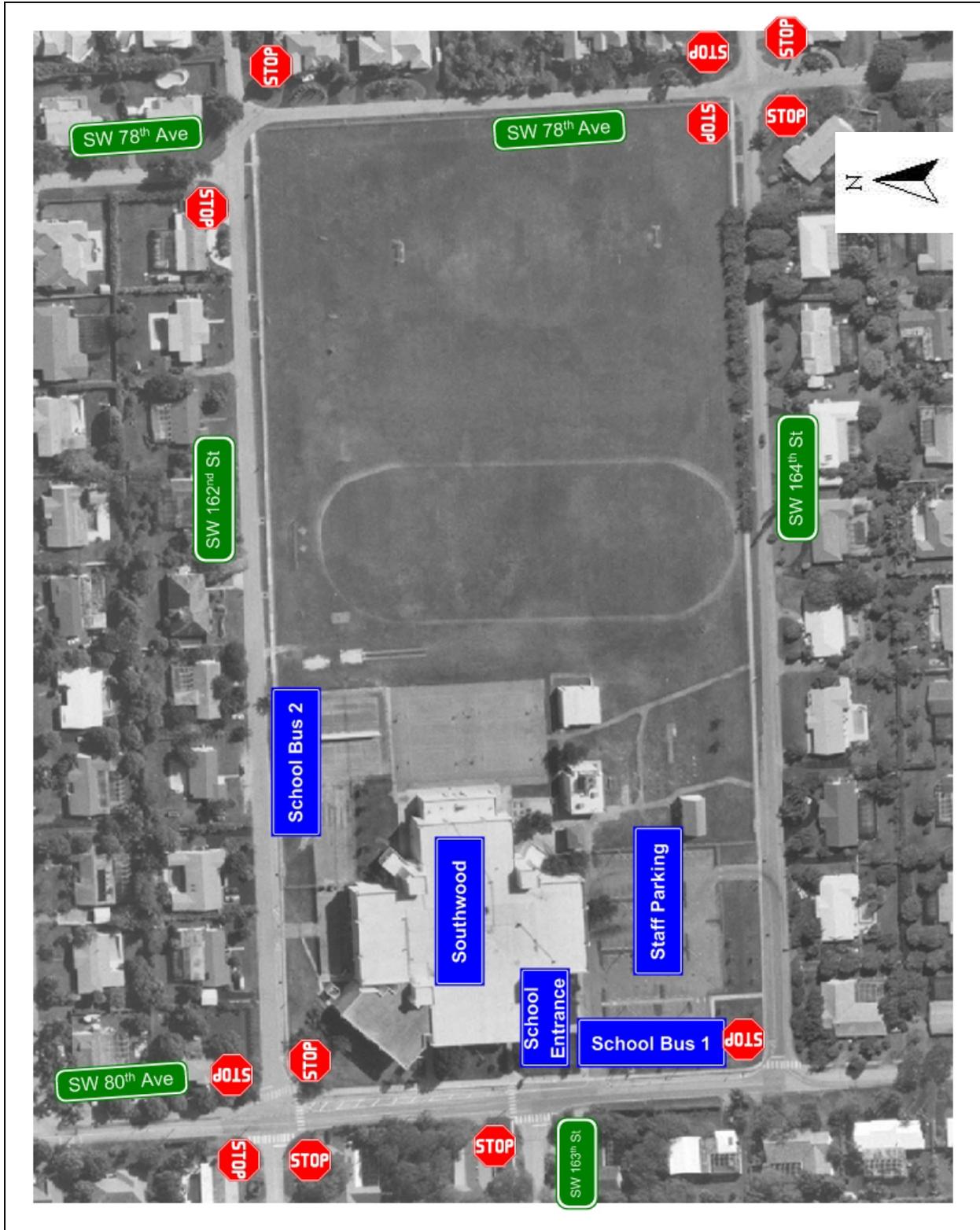


Exhibit 2 - Site Plan of Southwood Middle School

the construction of a shelter on school grounds, to protect the students from adverse weather conditions, should be considered.

**Improper U-Turns on SW 162<sup>nd</sup> Street:** Vehicles were observed turning illegally on SW 162<sup>nd</sup> Street. Additional “No U-turn” signs should be considered.

**Staff parking:** There is one staff parking lot on the northeast corner of SW 80<sup>th</sup> Avenue and SW 164<sup>th</sup> Street, with access from SW 164<sup>th</sup> Street. The parking lot is signed for staff only, and parents do not park there. School staff parking appears to be insufficient, since no parking spaces are empty during school working hours. There is space for expanding the parking lot within school grounds.

**Parking off-pavement:** Cars were observed parking off-pavement on the west side of SW 80<sup>th</sup> Avenue and on the west legs of SW 162<sup>nd</sup> Street and SW 163<sup>rd</sup> Street. Signage for parking restriction was found insufficient. Additional no parking signs and enforcement should be considered. Additional parking within school grounds east of the school building should be considered.

**School Buses:** School bus operation is assigned on bus lanes along SW 80<sup>th</sup> Avenue and SW 162<sup>nd</sup> Street, separately from private vehicles. During the drop-off time in the AM period, school buses park along SW 80<sup>th</sup> Avenue. During the pick-up time in the PM period, twenty-one school buses were parked along SW 80<sup>th</sup> Avenue and SW 164<sup>th</sup> Street. Currently, the number of bus zone signs is found insufficient on the bus lane along SW 80<sup>th</sup> Avenue. Additional bus loading zone signs should be considered. On the other hand, the possibility of a bus pick-up/drop-off zone within the school ground should be considered.

**Speeding:** Existing school speed signage around the school and a signal flasher on SW 80<sup>th</sup> Avenue are functional. At the time of field assessment no speeding was observed.

## 5.2 Public Meetings

Complaints and requests from Southwood Middle School's parents and school area residents have been addressed to the Village. Written requests previously received by the Village, and oral and written comments received during the school public meeting have been compiled and reviewed. A detailed list of these comments is presented in **Appendix B** and a summary follows.

**Village's records:** There is petition with 107 resident signatures requesting "No Parking" signs and converting to one-way SW 162<sup>nd</sup> Street eastbound, SW 163<sup>rd</sup> Street westbound and SW 164<sup>th</sup> Street westbound. Also, complaints about tickets on bus zone, cars parking on-grass and on swales were received by the Village.

**Public Meeting records:** A total of 21 parents and residents attended the public meeting held at the school on March 2, 2004. Village and School officials were also present at the meeting. After the consultant's presentation on current traffic issues, field assessment and preliminary alternative solutions; the concerns from the public were expressed during the question and answer session. Residents on SW 162<sup>nd</sup>, SW 163<sup>rd</sup> and SW 164<sup>th</sup> Streets complained on school traffic blocking driveways and parking on grass areas. Suggestions for building parking and pick-up/drop-off for private vehicles, with a turn around circle, on school grounds were raised. A suggestion of combining the PE facility with a multiple use track/loading zone was also formulated. School officials indicated that expansion of loading zones would also require construction of a shelter for students. Other suggestions included traffic calming on SW 80<sup>th</sup> Avenue, review of sidewalk system and establishing a community group for monitoring traffic impact on the school neighborhood. Safer bicycling on neighborhood streets was requested. Enforcement and education on traffic safety were also requested. Use of SW 162<sup>nd</sup> and SW 164<sup>th</sup> Streets for vehicles pick-up/drop-off only and SW 80<sup>th</sup> Avenue for buses only, were suggested. The study will address the public concerns and respond with recommendations that will improve student safety and minimize impact to the residents.

## 6.0 Data Collection

Traffic data collection included a signage inventory around the school area and accumulation assessment and queue studies to evaluate school parking and pick up/drop off needs. Data collection was conducted during school hours between March 10<sup>th</sup> and 19<sup>th</sup>, 2004. No traffic volume counts or speed studies were required at this time. The data collection included inventory of existing parking at each school as shown in **Exhibit 3**. In addition **Exhibit 4** presents data collected during five-minute intervals during the school PM period on surrogate parking (vehicles on illegal and/or undesignated parking areas) and maximum queues at pick-up/drop-off areas. Also this exhibit includes, a recommendation on additional parking spaces required and the number of school buses servicing school. The data collection also included a signage inventory with sign messages and locations for the school area. Detailed information on traffic data collection around the school is presented in **Appendix C**. Detailed

information on signage inventory around the school is presented on site plan in **Appendix D.**

### Exhibit 3 - Summary of Existing Parking Spaces

School Name	Existing Parking Spaces
Southwood Middle School	Shared Visitor and Staff Parking Lot (115 Spaces)

### Exhibit 4 - Summary of Data Collection

School Name	Max. Surrogate Parking <sup>(1)</sup>	Recommended Extra Parking Spaces <sup>(2)</sup>	Max. School Bus in Service <sup>(1)</sup>	Max. Queue Length <sup>(1)</sup>
Southwood Middle School	68	61	9	24

(1) Maximum counting within 5-minute interval

(2) It is estimated by 90% of maximum surrogate parking number

## 7.0 Development of Alternatives

The results of field observations, input from public meetings and data collection documented in this study, were used to identify current traffic impacts and to develop the following recommendations for Southwood Middle School.

The study indicated inefficiencies in the flow of traffic for school buses and private vehicles along the roads servicing the school. Inefficiencies included traffic congestion and shared lanes for school buses and private vehicles along pick-up/drop-off zone on SW 80<sup>th</sup> Avenue and SW 162<sup>nd</sup> Street. Traffic operation issues have been identified related to safer circulation of vehicles and pedestrians, illegal parking, need for additional parking areas, improvement of pick-up/drop-off zones, need for uniformity and better adequacy of signing and pavement markings.

Concept alternative solutions developed for this school and shown in **Exhibit 5** follow:

- Convert one-way east on SW 162<sup>nd</sup> Street during school hours to eliminate U-turns, off-street parking and relief congestion in neighborhood area, and provide vehicle pick-up/drop-off zone (1).
- Convert one-way west on SW 164<sup>th</sup> Street during school hours to eliminate U-turns, off-street parking and relief congestion in neighborhood area, expand

existing vehicle pick-up/drop-off zone, and relocate existing trees inside school(2).

- Convert one-way west on SW 163<sup>rd</sup> Street during school hours to reduce off-street parking, eliminate U-turns and relief congestion in neighborhood area (3).
- Provide vehicle only pick-up/drop-off zone lanes, one-way northbound, on SW 80<sup>th</sup> Avenue from SW 164<sup>th</sup> Street to SW 162<sup>nd</sup> Street during school hours, to improve pedestrian and traffic safety (4, 5).
- Build bus pick-up/drop-off zone within school to segregate buses from vehicles and improve traffic safety, keep existing fence and, if space allowed, install trees between the bus lane and school fence (6). (Currently proposed and under design by School Board)

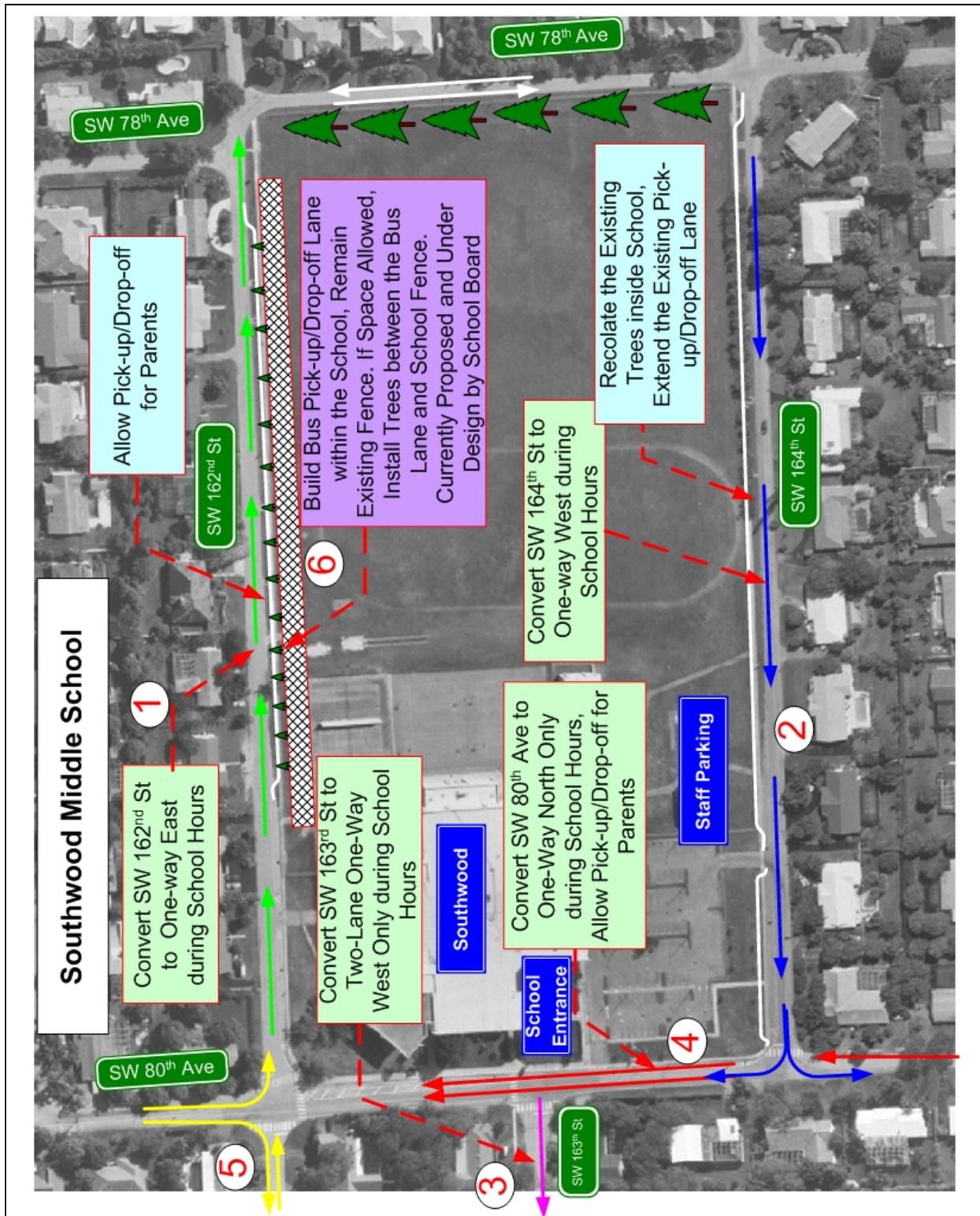


Exhibit 5 - Southwood Middle School Recommendation Plan

## **8.0 Conclusions and Recommendations**

The Southwood Middle School Traffic Study has been conducted for the Village of Palmetto Bay to identify current school area traffic circulation needs, assess existing traffic conditions, conduct public neighborhood meetings and develop recommendations for improvement of vehicular/pedestrian traffic circulation.

Results of the study indicate congestion in the flow of traffic for school buses and private vehicles along the roads servicing the school. Traffic operation issues have been identified related to safer circulation of vehicles and pedestrians, illegal parking, need for additional parking areas, improvement of pick-up/drop-off zones, need for uniformity and better adequacy of signing and pavement markings.

Analyses of documentation on field observations, public meetings and data collection were used to identify impact of traffic issues, develop and recommend the alternative solution shown in **Section 7**. In addition, the development of a comprehensive traffic calming and neighborhood management plan is suggested for local residential streets around the school area within the Village, to maintain or improve quality of life.

## **APPENDIX A**

### **FIELD OBSERVATIONS**

**SOUTHWOOD MIDDLE SCHOOL**



**Queues on SW 80<sup>th</sup> Avenue**



**Off-pavement parking on SW 80<sup>th</sup> Avenue**



**Traffic Jam and Off-pavement Parking on SW 162<sup>nd</sup> Street**



**Staff Parking Lot Used as Circulation for Pick-up**



**Parking on Service Lane on SW 80<sup>th</sup> Avenue**



**School Bus and Vehicle Operation on SW 80<sup>th</sup> Avenue**

**APPENDIX B**

**PUBLIC MEETINGS**

SOUTHWOOD MIDDLE

**Public Meeting (Oral Comments)**

Study several blocks		
In 2 blocks around school, add "No Stopping or Standing" Sign		Parking
Build school shelter for school		School layout
Install Bus transportation hubs for school buses		School layout
Education on Traffic		Educational
****all the above items are from Village of Pinecrest experience****		
East of basketball court build roads connecting SW 162 st and 164 St		School layout
Enhance policemen enforcement during school hours, one more security walking around		Enforcement
Bring in the school bus to stop or operate inside the school		School layout
Close SW 80th Avenue during school hours but open other streets for pick up/drop-off		Pick-up zone
21 School bus services now, students need to wait outside, which brings safety issue		Pick-up zone
Private property on SW 162nd Street has been blocked		Parking
On SW 80th Ave from SW 162nd St to SW 168th St there is only one stop sign, speeding problem		Speeding
On the intersection of SW 77th ct/SW 162nd Street speeding problem		Speeding
Lots of parents stop and drop off kids at SW 162nd St/SW 80th Ave 4-way stop sign		Pick-up zone
No stop on the 4-way stop sign		Enforcement
No sidewalk on SW 80th Ave/SW 164th St/SW 162nd St		Sidewalk
Kids riding bikes on North of SW 80th Ave mixed with speeding cars		Bicycling
Parents drop kids on SW 80th Ave		Pick-up zone
Add security on the road		Enforcement
Close SW 78th Ave during school hours, add the small roads for buses inside school		School Layout
traffic queues backs up on the side streets around the school		Circulation

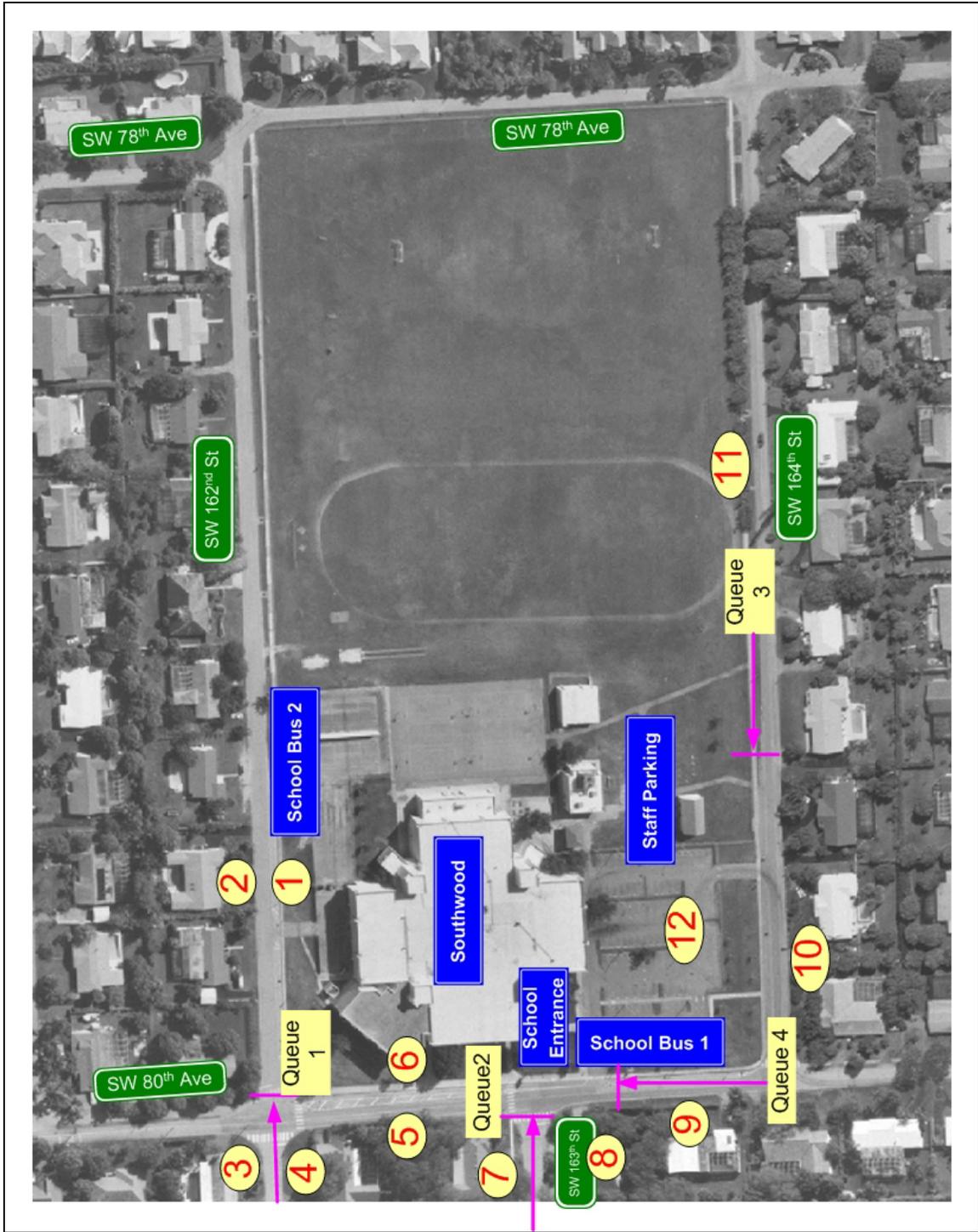
**Public Meeting (Written Comments)**

Not enough parking on-site	Gladis Caram 14100 SW 87 Ave	Parking
On-grass parking on SW 163 St	Colin Henderson	Parking
Oppose to convert SW 163 St to one-way	8020 SW 163 St	One way
Wants Bus/parents Drop-off on SW 162 St and SW 164 St		Pick-up zone
Parking on grass on SW 163 St	Henry MacInnes 8001 SW 163 St	Parking
No flow on Pick-up/drop-off on SW 164 St	Cindee Sigary	Pick-up zone
Add one way signs on SW 80 Ave	15141 SW 164 Ter	One way
Add Enforcement	"	Enforcement
School Buses should park on School grounds (PE Field)	"	Pick-up zone
Enforcement	Hollis Caravetta	Enforcement

On grass parking	7955 SW 162 St	Parking
Speeding on SW 162 St	"	Speeding
Beautify School w/ trees (Landscaping)	Rick Caravetta	Landscaping
Use PE field track for School buses drop-off (See sketch)	Beth Alder	School layout
	8140 SW 151 ST	
Involve School Board	D. Phillips	School layout
Enforcement needed during and after school hours	(ASTEC Consulting)	Enforcement
Traffic calming on SW 80 Ave	7980 SW 166 St	Calming
Have pick-up/drop-off on site	305.234.3882	School layout
Provide second entrance in addition to front entrance	"	School layout
Monitor study progress, follow up with studies	"	General
Inform parents of new changes	"	Educational
Review all sidewalk system around school	"	Sidewalk
Establish Standing Community Group for issues impacting school neighborhood	"	Educational
<b>Comments previously addressed to the Village</b>		
Consider one-way conversion for SW162 St (eastbound)	107 signed petitions	One way
Consider one-way conversion for SW163 St (westbound)	"	One way
Consider one-way conversion for SW164 St (westbound)	"	One way
Consider one-way conversion for SW 80 Ave (northbound) north of SW 164 St	"	One way
Install "NoParking" signs on the above streets (residential side)	"	Parking
Speed Enforcement	"	Enforcement
Congestion at SW 80 Ave and SW 163 ST intersection	Dimitri J. Cruz	Circulation
On-grass parking and on driveways at his property	8000 SW 163 St	Parking
On-swales parking at his property	"	Parking
Got ticket on Bus zone (complaint to the Village by phone)	Debby Arone	Enforcement
	305.251.1311	

## **APPENDIX C**

### **DATA COLLECTION**



**Exhibit C - Locations of Traffic Data Collection at Southwood Middle**

**APPENDIX D**

**SIGNAGE INVENTORY**

