

PLANS

SHORES AT PALMETTO BAY, LLC.
VPB-11-001

SHORES DEVELOPMENT PARKSIDE at PALMETTO BAY

SW 97th AVENUE & 180th STREET
PALMETTO BAY, FL 33157
FOLIO # 33-5033-000-0860

APPLICANT:
Shores at Palmetto Bay LLC

ADDRESS:
1371 Sawgrass Corporate Parkway
Sunrise, FL 33323

DATE: SEPTEMBER 2011

SUBMITTAL: ZONING APPLICATION (RESUBMITTAL OF DEC 21, 2010 APPLICATION)
CIVICA PROJECT #: 100207

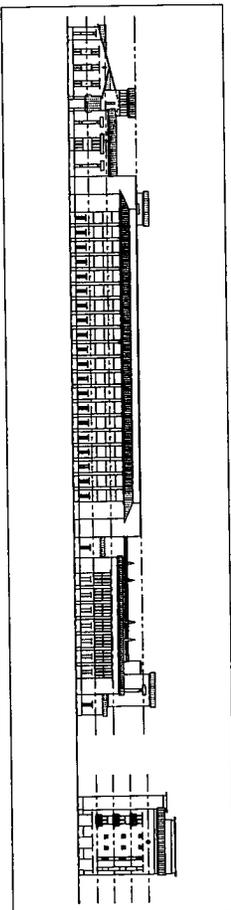
CIVICA
L L C
ARCHITECTURE & URBAN DESIGN
8323 NW 12th St. Suite 106
Doral, FL 33126
Tel: 305.593.9959
AA #28001093

INDEX OF DRAWINGS

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LEGAL DESCRIPTION:

The north one-half (1/2) of the Southwest one-quarter (SW 1/4) of the Northwest one-quarter (NW 1/4) of the Section 36, Township 28S, Range 40E, Long and short in Manatee County, Florida, LESS the west 40 feet thereof for road right-of-way.



REVISIONS		
NO.	DATE	REVISION
1	9/16/11	PLANNING BOARD COMMENTS

RECEIVED
Zoning Department
9/16/11
Village of Palmetto Bay
Building & Zoning Department
By: *[Signature]*

PROJECT:

PARKSIDE at PALMETTO BAY
 SW 97th Avenue & 180th Street
 Palmetto Bay, FL 33157

File# 23-50333-000-0860

APPLICANT:

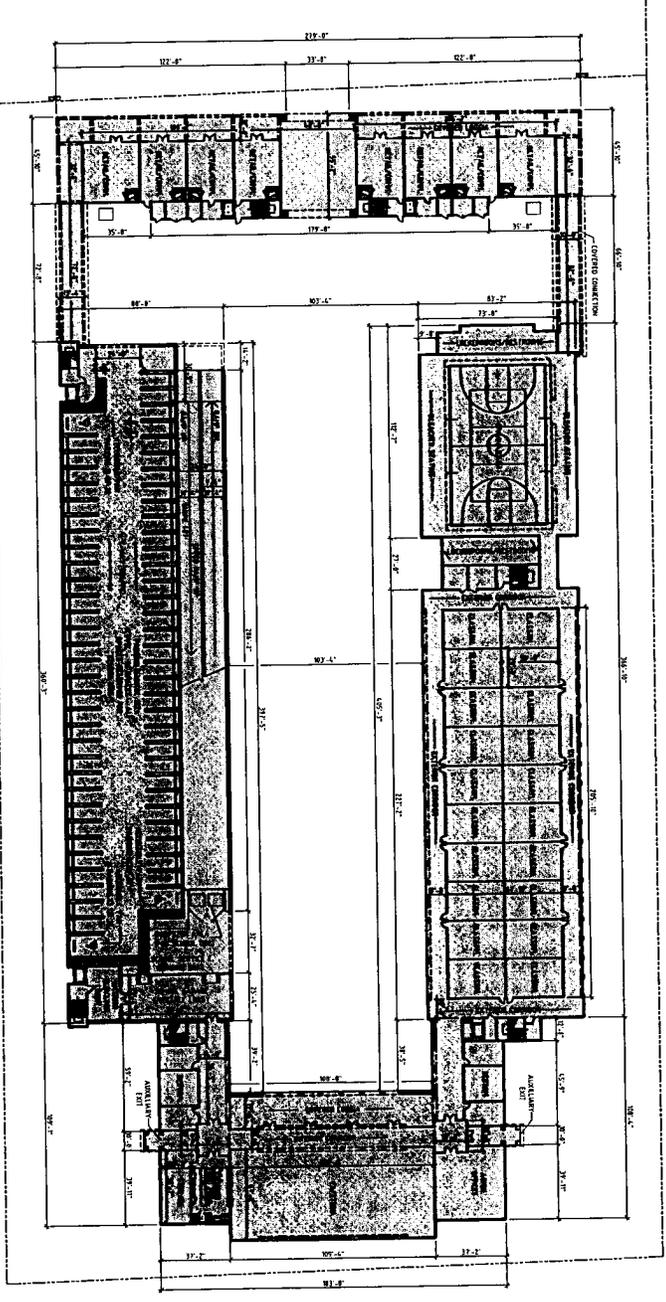
SHORES at PALMETTO BAY LLC
 1371 Sawgrass Corporate Parkway
 Sunrise, FL 33325
 Phone: 954.444.4444

ISSUED FOR:

PERMITS

APPLICATION:

CIVICA PROJECT NO. : 10207



FIRST FLOOR PLAN
 SHEET NUMBER **A3**

DATE: 11/11/2023
 TIME: 10:00 AM
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: AS SHOWN
 SHEET NO. 111

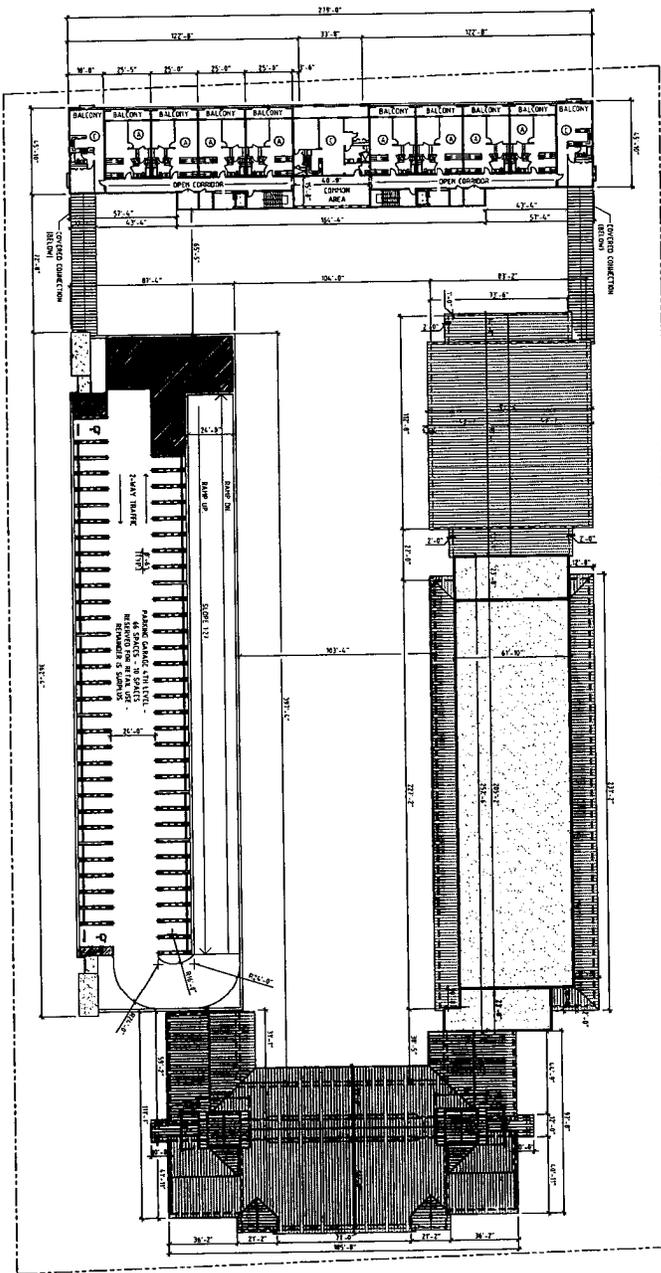
REVISIONS:
 1. [Description]
 2. [Description]

DATE: 11/11/2023
 TIME: 10:00 AM
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: AS SHOWN
 SHEET NO. 111

REVISIONS:
 1. [Description]
 2. [Description]

DATE: 11/11/2023
 TIME: 10:00 AM
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: AS SHOWN
 SHEET NO. 111

REVISIONS:
 1. [Description]
 2. [Description]



FOURTH FLOOR PLAN
SCALE: 1/8" = 1'-0"

SHEET NUMBER
A6

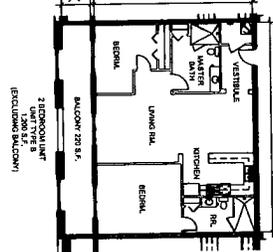
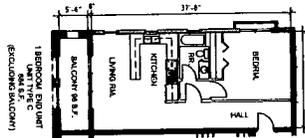
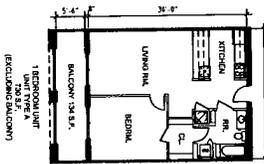
FOURTH FLOOR PLAN

RELATION LINES
This drawing is related to the other drawings in this set. It should be read in conjunction with the other drawings. It is not to be used in isolation. It is not to be used to determine the location of any element in this project. It is to be used to determine the location of any element in this project.

REMARKS

NO. DATE REVISION BY
DRAWN BY
DATE
CHECKED BY
APPROVED BY
DATE
SCALE
SHEET NO. 41 FROM

TYPICAL RESIDENTIAL UNIT TYPES
SCALE: 1/8" = 1'-0"



PROJECT:
PARKSIDE of PALMETTO BAY
SW 87th Avenue & 182nd Street
Palmetto Bay, FL 33157
Folio: 30-58033-000-0080
APPLICANT:
SHORES of PALMETTO BAY LLC
1317 Sawgrass Corporate Parkway
Sunrise, FL 33323
ISSUED FOR:
30-044-157100
ZONING:
APPLICATION:
CIVICA PROJECT No.:
19/007

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EXHIBIT A

ENTERPRISE ZONE MAP

SHORES AT PALMETTO BAY, LLC.

VPB-11-001

EXHIBIT B

TRAFFIC STUDY

SHORES AT PALMETTO BAY, LLC.

VPB-11-001



- Fort Lauderdale Office - 1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316
Phone: 954.921.7781 • Fax: 954.921.8807
- Palm Beach Office - 560 Village Blvd, Suite 340, West Palm Beach, Florida 33409
Phone: 561.684.6161 • Fax: 561.684.6360

Memorandum

DATE: September 26, 2011
TO: Darby Delsalle, AICP
Director of Planning and Zoning
Village of Palmetto Bay
9705 East Hibiscus Street
Palmetto Bay, Florida 33157
T: 305-259-1271
F: 786-338-7432
www.palmettobay-fl.gov

FROM: James E. Spinks III, PE, PTOE

SUBJECT: Palmetto Bay Charter School (K-12) - Traffic Impact Study Review

PROJECT: 10-3790

CC: Jeff Maxwell, PE, PTOE - Calvin Giordano

Calvin, Giordano and Associates, Inc. was requested by the Village of Palmetto Bay to review the Traffic Impact Study for the proposed Palmetto Bay Charter School (K-12).

The proposed Charter School is located east of the intersection of SW 97th Avenue and Guava Street and planned to have 1,400 students in grades Kindergarten through Twelfth. In addition, a residential/condo with 103 dwelling units and 10,000 square feet of retail is planned for the proposed site.

The following comments are provided regarding the Palmetto Bay Charter School (K-12):

Traffic Impact Study

1. The study provided indicates that the methodology for this study was discussed and approved by Miami Dade County Public Works Department (MDPWD) in regards to the school. Please provide approval letter from MDPWD in regards to the study.
2. The revised site plan indicates that 76 vehicles can be stacked on proposed site drop-off/pick-up loop. The revised study indicates a maximum queue of approximately 96 vehicles, which exceeds the stack. The original site plan accommodated for this with

25 excess parking spaces; however the revised plans provides 57 surplus spaces. Please clarify how vehicles access the surplus spaces on the site plan.

3. The traffic study still does not address PM peak period (4:00 pm to 6:00 pm) intersection and link analysis, as requested. The proposed site contains retail and residential, therefore this must be addressed. The study provided was developed with Miami Dade County Public Works Department to address the proposed school, not retail and residential which are also concerns of the Village of Palmetto Bay. Please revise.
4. The revised study performs a link analysis on SW 97 Avenue between Guava Street and Hibiscus Street utilizing the existing turning movements and project traffic. The table shows a volume of 468 project trips; however the maximum number of trips on the link is 570 project trips. Please revise. In addition, all intersections and links where the trips are greater than 3% of the link capacity should be analyzed. Please revise.
5. The study states that trip distribution and assignment utilized is consistent with roadway networks and knowledge of local traffic patterns (area demographics, density and roadway network), which is not consistent with TAZ 1126. However, this was not clearly explained in the report. Please clarify specifically how the distribution percentages were calculated within the report.
6. As stated in the review comment response, the school is planning on having 467 students for each student population (high school, middle school and elementary school). In response, the applicant states that Table 3 does not reflect this and utilizes overlap of siblings from one arrival to another. This was not explained in the report. Please clarify assumptions to determine this.
7. As requested, the applicant has included the proposed new city hall in the revised traffic study back-up analysis committed traffic. However, the applicant has chosen not to include the requested proposed Palmer Trinity School as committed projects in the background traffic calculations. Please revise.
8. Please note: During the AM peak period, it is anticipated that many of the elementary school students will arrive earlier than anticipated for working parents. This was not taken into account in the queue analysis for the AM period. Please revise.

9. Will high school student vehicles access the 25 parking spaces through the proposed student drop-off route? In addition, how will the surplus 26 spaces be accessed? How will they be distinguished? Please clarify.
10. Please indicate the bus route that will be utilized to access the bus drop area to ensure no conflicts with passenger vehicles.
11. The AM peak intersection analysis in the westbound direction at driveway 1 shows a 95% queue length of 255 feet. This exceeds the distance to the entry/exit for the parking garage which services the residential component of this proposed development. Therefore, the queue from the school will trap vehicles in the garage. Please indicate how this will be addressed.
12. This study makes no mention of a drop-off/pick-up management plan. Will card readers or a special traffic management plan be in place to facilitate the staggered arrival/dismissal times? Please clarify.

If you have any questions or comments regarding the above information, please feel free to contact us at (954) 921- 7781.

Sincerely,
CALVIN, GIORDANO & ASSOCIATES, INC.
James E. Spinks III, PE, PTOE



Cc: Jeff Maxwell, PE, PTOE, Calvin, Giordano & Associates

Appendix A –
Sample - Staggered Queue Analysis

Maximum Capacity = 3 shifts at 45 min and 858 students (174 Cars)

Pick-up Period	K, 1, and 2		3, 4, and 5		6, 7, and 8		Total
	Veh =	58	Veh =	58	Veh =	58	
1:30 PM to 1:35 PM	3.5%	2					2
1:35 PM to 1:40 PM	2.9%	2					2
1:40 PM to 1:45 PM	2.9%	2					2
1:45 PM to 1:50 PM	29.2%	17					17
1:50 PM to 1:55 PM	42.1%	24					24
1:55 PM to 2:00 PM	55.6%	32					32
2:00 PM to 2:05 PM	56.7%	33		0			33
2:05 PM to 2:10 PM	60.2%	35		0			35
2:10 PM to 2:15 PM	75.4%	44		0			44
2:15 PM to 2:20 PM	77.2%	45	3.5%	2			47
2:20 PM to 2:25 PM	87.1%	51	2.9%	2			52
2:25 PM to 2:30 PM	94.2%	55	2.9%	2			56
2:30 PM to 2:35 PM	100.0%	58	29.2%	17	0		75
2:35 PM to 2:40 PM	99.4%	58	42.1%	24	0		82
2:40 PM to 2:45 PM	92.4%	54	55.6%	32	0		86
2:45 PM to 2:50 PM	89.5%	52	56.7%	33	0		85
2:50 PM to 2:55 PM	52.0%	30	60.2%	35	0		65
2:55 PM to 3:00 PM	29.2%	17	75.4%	44	0		61
3:00 PM to 3:05 PM	6.4%	4	77.2%	45	3.5%	2	51
3:05 PM to 3:10 PM	0.6%	0	87.1%	51	2.9%	2	53
3:10 PM to 3:15 PM	2.3%	1	94.2%	55	2.9%	2	58
3:15 PM to 3:20 PM	2.3%	1	100.0%	58	29.2%	17	76
3:20 PM to 3:25 PM	2.3%	1	99.4%	58	42.1%	24	83
3:25 PM to 3:30 PM	1.8%	1	92.4%	54	55.6%	32	87
3:30 PM to 3:35 PM			89.5%	52	56.7%	33	85
3:35 PM to 3:40 PM			52.0%	30	60.2%	35	65
3:40 PM to 3:45 PM			29.2%	17	75.4%	44	61
3:45 PM to 3:50 PM			6.4%	4	77.2%	45	49
3:50 PM to 3:55 PM			0.6%	0	87.1%	51	51
3:55 PM to 4:00 PM			2.3%	1	94.2%	55	56
4:00 PM to 4:05 PM			2.3%	1	100.0%	58	59
4:05 PM to 4:10 PM			2.3%	1	99.4%	58	59
4:10 PM to 4:15 PM			1.8%	1	92.4%	54	55
4:15 PM to 4:20 PM					89.5%	52	52
4:20 PM to 4:25 PM					52.0%	30	30
4:25 PM to 4:30 PM					29.2%	17	17
4:30 PM to 4:35 PM					6.4%	4	4
4:35 PM to 4:40 PM					0.6%	0	0
4:40 PM to 4:45 PM					2.3%	1	1
4:45 PM to 4:50 PM					2.3%	1	1
4:50 PM to 4:55 PM					2.3%	1	1
4:55 PM to 5:00 PM					1.8%	1	1

TECHNICAL MEMORANDUM

DATE: August 8th, 2011

TO: Julian H. Perez, AICP
Village of Palmetto Bay
8950 SW 152nd Street
Palmetto Bay, FL 33157

FROM: Richard Garcia, P.E.
Richard Garcia & Associates, Inc.
13117 NW 107th Avenue, Unit # 4
Hialeah Gardens, Florida 33018

SUBJECT: Palmetto Bay Charter School (Response to School Traffic Comments)

We have reviewed the traffic comments offered by your office, dated September 7, 2010 for the referenced project and are providing the following responses.

- 1. Traffic Study indicates that 103 vehicles can be stacked on the proposed site. Please show these vehicles, including dimensions on the site plan or figure.**

RGA Response: Please see the revised Site Plan provided by Civica.

- 2. Study does not address PM peak period (4:00 pm to 6:00 pm). The proposed site contains retail and residential uses, therefore this must be addressed. Please revise.**

RGA Response: Please note the school's AM peak period is between 7:00 AM and 9:00 AM, which coincides with the adjacent roadway peak traffic. On the other hand, the school's PM peak hour occurs during the dismissal of students, which is between 2:00 PM and 4:00 PM. As you may notice, the school's PM peak period trips will not coincide with the roadway PM peak period (4:00 PM to 6:00 PM) and therefore, no analysis was needed or required by the Miami-Dade County Public Works Department.

Moreover, it is our understanding that a traffic study is not required for the proposed retail and residential uses within the Village of Palmetto Bay and therefore, a PM peak period analysis was not performed. Again, the purpose of our traffic study is to address the traffic impacts of the school development.

- 3. Study states that analysis intersections were chosen based on close proximity of the site. However, intersections and links should be accounted for by impact. All intersections and links where the trips are greater than 3% of the link capacity should be analyzed. Please revise.**

RGA Response: Please note our study has analyzed the most impacted intersections as indicated on Page 1 of the Traffic Study dated November 9th, 2010. As a result, all the intersections analyzed yielded acceptable LOS results (i.e. LOS C or better) for all the conditions studied. In addition, it is important to mention the project's traffic will have significantly less impact, if any, at intersections farther away from the project site. This is due to the fact that traffic always finds the path of least resistance and therefore, the traffic impacts are diminished by distance throughout the roadway grid network.

Moreover, a link analysis was not part of the scope of service and/or required by Miami-Dade County for schools. However, in an effort to address the reviewer's comment, we have utilized the turning

movement counts to obtain the AM peak hour volume and to perform a link analysis at SW 97th Avenue between East Guava Street and East Hibiscus Street. The Link analysis resulted in LOS C for the existing condition and LOS D for the proposed condition. Attached please find the supporting documentation.

- 4. The study states that trip distribution and assignment utilized is consistent with roadway networks and knowledge of local traffic patterns. Since this is not consistent with TAZ 1126, please clarify specifically how the distribution percentages were calculated and clearly show on a figure that can be followed. The site traffic does not appear to represent the distribution utilized in Table 5. Please revise.**

RGA Response: As stated throughout the report dated November 9th, 2010, the trip distribution was performed consistent with the Miami-Dade County school methodology. The traffic impact methodology was discussed with and approved by the Miami-Dade County Public Works Department during the scoping phase.

In addition, Traffic Analysis Zones (TAZ) are based on primary trips (i.e. Home-Work based trips, etc.) and the school trip is not considered a primary trip. Therefore, the County requires a trip distribution based on area demographics, density and roadway network. However, as mentioned in the report, the TAZ distribution percentages were evaluated and utilized as a starting point. The distribution percentages are clearly shown in Table 5 of the Traffic Impact Study. Lastly, please note the site traffic does represent the distribution percentages shown in Table 5 of the Traffic Impact Study. The attachment provided herewith contains a figure with the distribution percentages utilized.

- 5. The existing condition analysis utilized traffic counts were taken in September 2010. However, as of December 2010 Guava Street has been modified from a 2-way street to a 1-way westbound only street within the study limits. Please thoroughly explain the methodology utilized to redirect traffic within the report with text and figure.**

RGA Response: The existing condition analysis was performed consistent with the roadway characteristics (East Guava Street as two-way roadway) at the time the data collection took place. However, the proposed condition was analyzed consistent with the roadway modification on East Guava Street from a two-way roadway to a westbound street only.

In addition, the existing traffic traveling eastbound (i.e. 10 vph) on East Guava Street was re-distributed to East Hibiscus Street since this is a two-way roadway providing connectivity to the east-west direction and similar to the characteristics of East Guava Street prior to the roadway modifications. As such, the 10 northbound right-turns on East Guava Street and US 1 were re-distributed to East Hibiscus Street and US 1. Also, the 3 eastbound left-turns and the 7 eastbound right-turns were re-assigned to the intersection of East Hibiscus Street and SW 97th Avenue. Lastly, Figure 3 of the Traffic Study depicts the study's existing condition (i.e. TMC) while Figure 6 is the proposed condition including the roadway modification at East Guava Street and re-directed traffic.

- 6. Level of service analysis does not address AM or PM link volumes. Please include link volume analysis as part of this study.**

RGA Response: As previously indicated, see response to comment # 3.

- 7. Somerset Silver Palms was used as a surrogate to develop trip generation rate of 1.017 trips per student. The surrogate school begins classes at 8:15 am and dismisses at 3:00 pm without a staggered start time. Your data collection results indicate that students began to arrive more than an hour before school begins, yet the percent distribution utilized shows most students arriving between appropriately (typo: approximately) 30 minute stagger times. Please provide justification for the percent distributions utilized in Table 3 and appropriately apply only to applicable arrival group (high school, middle school, elementary school). In addition, a separate PM peak hour trip generation was not performed and should be completed. Please revise.**

RGA Response: Please note the surrogate school was operating with one arrival and one dismissal. On the other hand, the proposed school is planned to be operated with three arrivals and three dismissals. Therefore, the proposed school is mitigating its traffic impacts by having multiple arrivals and dismissals, a common practice being utilized throughout Miami-Dade County and South Florida. Moreover, as depicted on Table 3 of the Traffic Study, the percent distribution was developed consistent with the number of students per grade (i.e. high school, middle school and elementary school) with the corresponding arrival times and the class schedule.

For example, the school is planned to have 32% of the student population within high school grades (i.e. 9-12), for which class begins at 7:30 AM and therefore, all the high school students and vehicle trips related were distributed from 7:00 AM to 7:30 AM. Any students arriving before 7:30 AM will actually diminish the results obtained as we assumed a worst case scenario, thus our analysis yields a conservative result.

In addition, the Miami-Dade County does not require a PM peak hour trip generation for the schools since the school's PM peak period does not coincides with the roadway PM peak period and therefore, their impact during the roadway PM peak hour will be insignificant if not negligible and certainly less impactful than the analyzed AM peak hour.

- 8. It appears in Table 3 that students arrive by time rather than by student population (high school, middle school, elementary school). Will the high school be capped at 448 students, middle school at 420 and elementary at 490 students, as inferred by the cumulative student capacities in Table 3? Please indicate maximum student population by category (high school, middle school, elementary school).**

RGA Response: Please note the Traffic Study is a planning document and the analyses are performed conservatively and evaluating all the aspects of the school operation. Moreover, students do arrive when classes are due to begin. Although some students may arrive before the school peak period, our analysis does not include them as a conservative approach.

The school is planning to have approximately 467 students for each student population (i.e. high school, middle school and elementary school). However, Table 3 does not reflect 467 students for each arrival since the analysis has taken in consideration the overlap and siblings from one arrival to the other and the fact that some students (any grade) will arrive within the school peak period but after classes already started.

- 9. A pass-by rate of 50 % was assumed for the AM peak period. This exceeds guidance provided in the FDOT Site Impact Handbook, which states that "In general, the number of pass-by trips should not exceed 10% of the adjacent traffic during the peak hour or 25 percent of the project's external trip generation potential." Please revise.**

RGA Response: Please note the referenced Florida Site Impact Handbook is an out of print edition

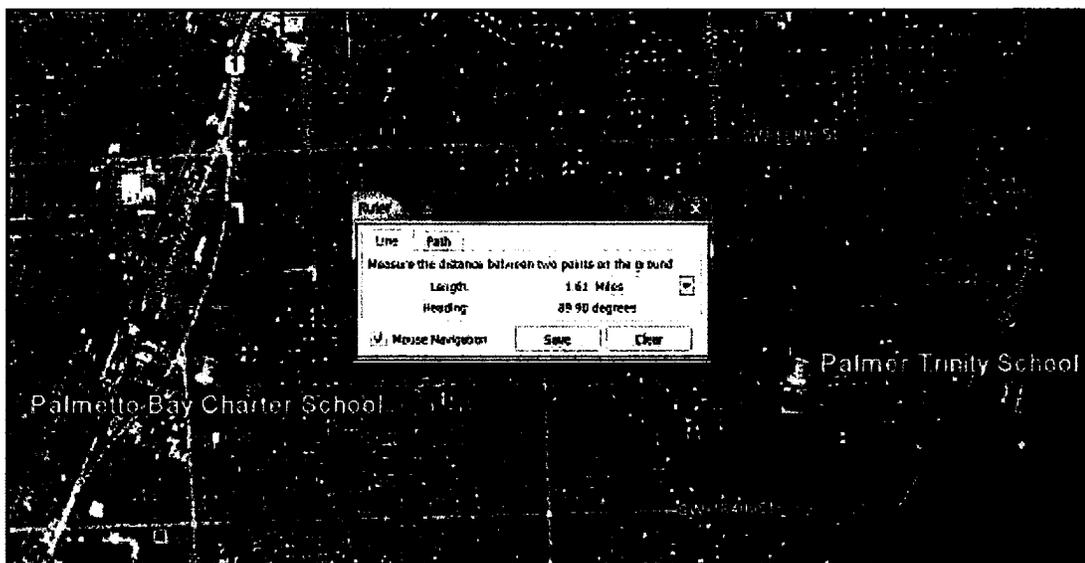
which has been replaced or superseded by the **Transportation Impact Handbook (August 12th, 2010)** as per the State of Florida Department of Transportation (FDOT). The FDOT Transportation Impact Handbook provides guidelines (not standards) to assist professionals with the assessment of transportation impacts for new developments within the State Roadway System. This handbook provides an explanation of the FDOT-approved methodology for determining the 10 percent. This methodology consists of dividing the total pass-by reduction by the adjacent street traffic volume (peak-hour two-way). Moreover, this handbook states the following:

“This 10 percent is a rule-of-thumb and not statistically studied factor. It should be used as a measure of reasonableness only.”

As you may notice, SW 97th Avenue is a county roadway and therefore, the FDOT guidelines should not be a requirement unless adopted by the Miami-Dade County and/or the Village of Palmetto Bay. Although we believe the methodology should not be applied to the county roadway, we have determined whether or not the pass-by trips will exceed the 10 percent of the adjacent street traffic volume. As a result, the project’s pass-by trips utilized in the analysis **will not** exceed the 10 percent of the adjacent street traffic volume. Therefore, the pass-by reduction used in our analysis seems to be reasonable for the proposed development. Lastly, please note the pass-by trips were obtained from the Institute of Transportation Engineers (ITE) data sheets.

10. Please include the proposed new city hall and the proposed Palmer Trinity School as committed projects in the background traffic calculations.

RGA Response: We have calculated and included the committed traffic for the new City Hall as requested by the Village’s traffic consultant. Although the average vehicle delay for the intersections analyzed has increased, the LOS letter remained the same as previously documented (i.e. LOS C or better). Moreover, the Palmer Trinity School is located more than mile and a half away (i.e. 1.61 miles) from the subject project. Therefore, it is our professional opinion the proposed expansion of the existing Palmer Trinity School will not have an impact on the proposed charter school. However, if the Village can provide Palmer Trinity’s traffic impact study with trips within our study area, we will be glad to include them in our analysis. Below please note the distance between our project and the Trinity School.



- The queue analysis data collection shows that vehicles are queued well over an hour before school dismissal during both the AM and PM periods. Therefore, an overlap of queuing should be accounted for in the analysis based on the percentage of vehicles queued using the proposed 30-minute stagger times. A sample of this stagger is included in Appendix of these comments for your review.

RGA Response:

AM Peak Student Drop-Off

The arrival and drop-off of children has never been the critical operational component of a school’s traffic operations. In fact, as evident from the surrogate data and our analysis, we will accommodate over 200 percent of the required queuing during the AM arrival. Therefore, it is clear to conclude that with three arrivals of approximately 467 students each the school would have a surplus of queuing capacity.

PM Peak Student Pick-up

Since parents must wait for their child to be dismissed, those waiting in cars will queue until said dismissal. This queuing is modeled based on a surrogate school. Figure 1 includes the queuing for three (3) dismissals with an overlap. Please note, this overlap was based on the parent arriving for the student 30 minutes before their child is dismissed. It is our experience with various schools that when there are multiple dismissals; very few parents arrive 30 minutes before, as they want to avoid the previous dismissal’s queue. Finally, Figure 2 includes the cumulative queuing of the three (3) dismissals. Please note the maximum queue does not go up, rather the queuing takes longer to dissipate. This is consistent with our field data and consistent with the Miami-Dade County Public Works operation of schools with multiple dismissals and the reason why they have mandated a 30-minute interval in dismissal.

In addition, we have revised the Accumulation Assessment consistent with the surrogate school AM and PM peak queue obtained from the overlap calculations. As a result, the PM Peak Accumulation Assessment resulted in 96.24 vehicles for each dismissal, which corresponds to 107 percent being accommodated. Lastly, the analysis performed herewith is conservative and provides sufficient margin for the queuing of cars.

Figure 1

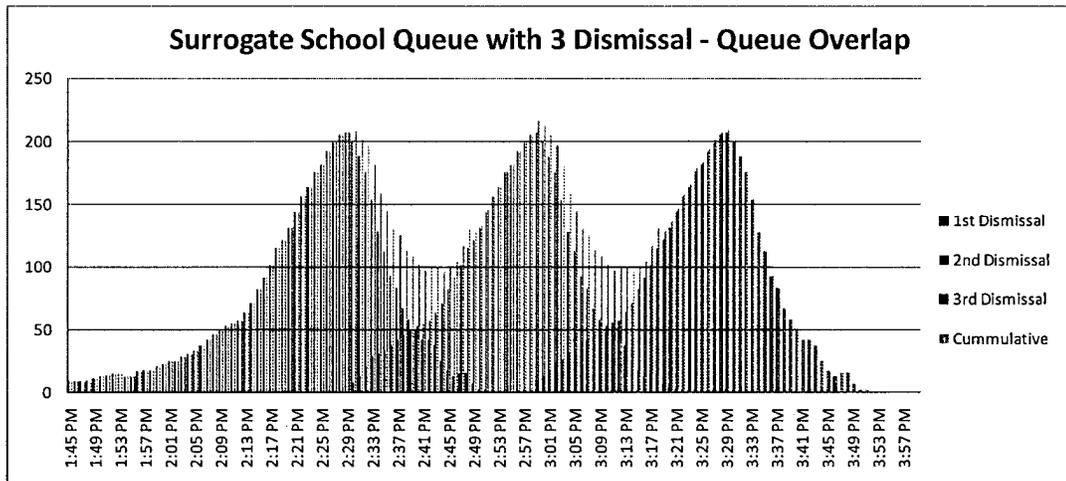
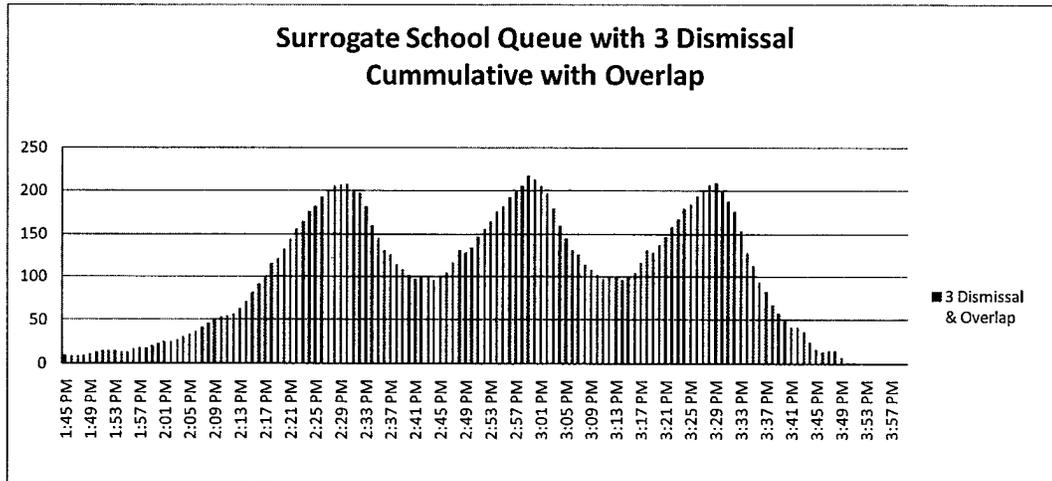


Figure 2



- 12. Please note: During the AM peak period, it is anticipated that many of the elementary school students will arrive earlier than anticipated for working parents. This was not taken into account in the queue analysis for the AM period. Please revise.**

RGA Response: We disagree with the reviewer. The Accumulation Assessment was performed consistent with previous analysis submitted and approved by the Miami-Dade County for similar projects. Moreover, our analysis was performed conservatively since any students that arrive before the AM peak period starts (i.e. before 7:00 AM) will reduce the impact found by our analysis. Therefore, all the students were taken into account assuming they all will arrive within the AM peak period (i.e. 7:00 AM to 9:00 AM), this yields a worst case scenario with the greatest possible queuing demand.

- 13. Will high school student vehicles access the 25 parking spaces through the proposed drop-off route? In addition, how will the surplus 26 spaces be accessed? How will they be distinguished? Please clarify.**

RGA Response: Attached please find the revised site plan depicting the stacking area and the surplus parking utilized for vehicle stacking during the arrival and dismissal times. The parking spaces utilized for vehicular stacking will be distinguished with signs indicating their use.

- 14. Please indicate the bus route that will be utilized to access the bus drop area to ensure no conflicts with passenger vehicles.**

RGA Response: Please note the revised site plan does not have a bus drop-off area. The school is not expecting any large school buses.

- 15. The AM peak intersection analysis in the westbound direction at driveway 1 shows a 95% queue length of 255 feet. This exceeds the distance to the entry/exit for the parking garage which services the residential component of this proposed development. Therefore, the queue from the school will trap vehicles in the garage. Please indicate how this will be addressed.**

RGA Response: Please see the revised site plan since such condition has been addressed.

- 16. This study makes no mention of a drop-off/pick-up management plan. Will card readers or a special traffic management plan be in place to facilitate the staggered arrival/dismissal times? Please clarify.**

RGA Response: The applicant will provide a Traffic Operation Plan (TOP) describing the school operation during the arrival and dismissal times. A card reader is not being proposed as this site does not have a gate.

In conclusion, as stated in the original Traffic Impact Study dated November 9th, 2010, the subject project does not pose any negative traffic impact on the most impacted intersections or roadways. Lastly, the proposed charter school is providing sufficient vehicular stacking area to accommodate the proposed stacking demand.

ATTACHMENTS

Palmetto Bay Charter School
LINK ANALYSIS: EXISTING AM PEAK HOUR CONDITION

LINK	ROADWAY		DIR	AM PEAK HOUR VOLUME	JURISDICTIONAL CLASSIFICATION	EXISTING LOS
	NAME	AT				
1		2	3	4	5	6
1	SW 97th Avenue/ Franjo Road	between E Guava Street & E Hibiscus Street	NB SB LINK	422 45 467	2-Lane Non-State (Class II) Undivided	C

NOTES:

- 1 Roadway Name
- 2 Location of Count
- 3 Link Direction
- 4 AM Peak Hour Volumes obtained from TMC data
- 5 Roadway Jurisdictional Classification
- 6 Level of Service from Table 4; 2009 FDOT Q:LOS HB

Palmetto Bay Charter School

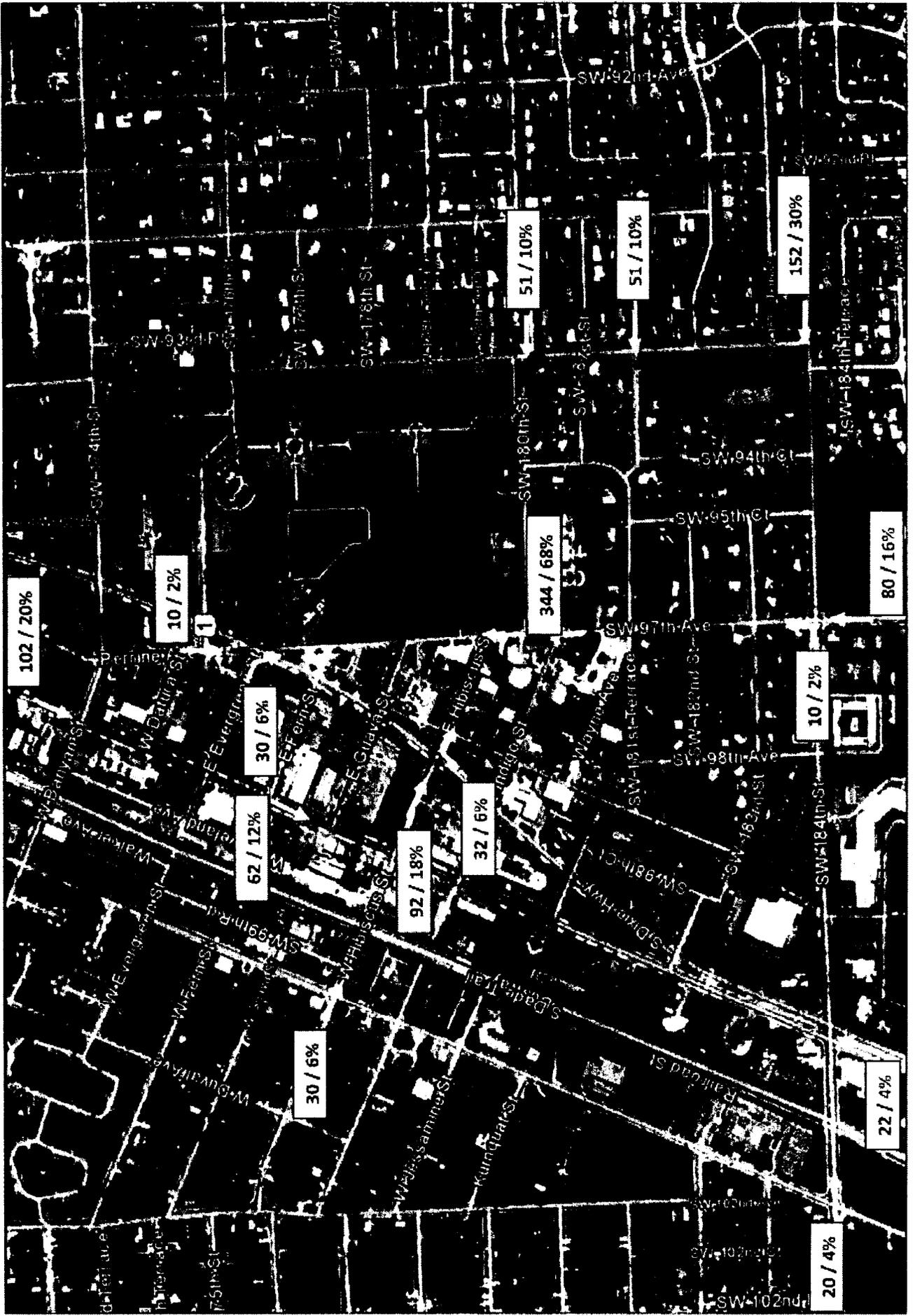
LINK ANALYSIS: PROPOSED AM PEAK HOUR CONDITION

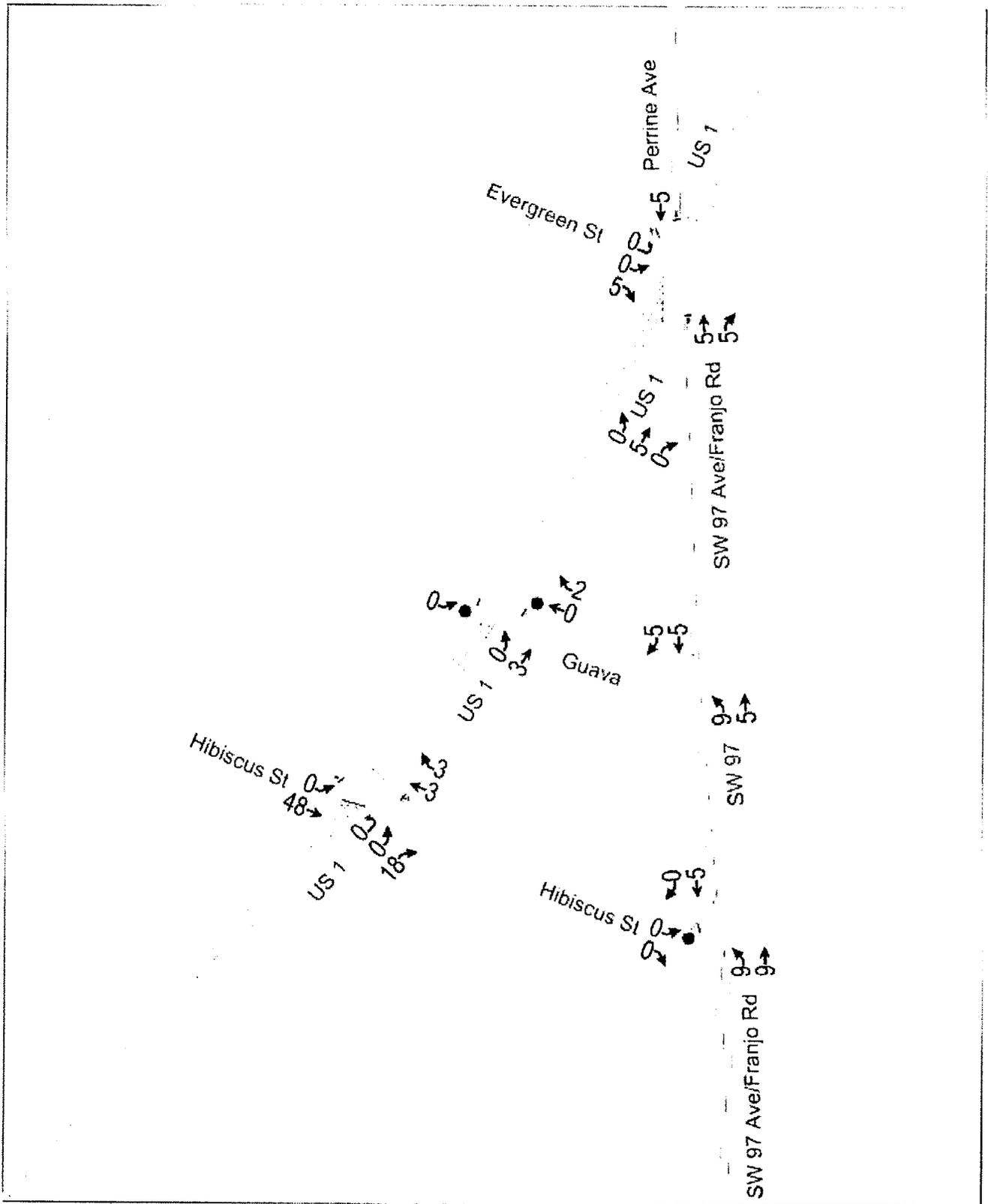
LINK	ROADWAY		DIR	AM PEAK HOUR VOLUMES (EXISTING)	BACKGROUND GROWTH @ 1.00% FOR 3 YEARS	PROJECT TRAFFIC (VPH)	COMMITTED TRAFFIC	AM PEAK HOUR VOLUMES (PROPOSED)	JURISDICTIONAL CLASSIFICATION	PROPOSED LOS
	NAME	AT								
1	SW 97th Avenue/ Franjo Road	AT	ND	422	13	488	0	903	2-Lane Non-State (Class II)	D
		1 - Hibiscus Street	SB	45	1	232	0	236		
			LINK	467	14	720	0	1,201	Undivided	

Notes:

- 1 Roadway Name
- 2 Location of Count
- 3 Link Direction
- 4 Existing AM Peak Hour Volumes
- 5 A 100 percent background growth was utilized when it applied to the total of three years
- 6 Project Traffic
- 7 Committed Traffic
- 8 Proposed AM Peak Hour Volumes
- 9 Roadway Jurisdictional Classification
- 10 Level of Service from Table 4, AASHTO 1994

Trip Distribution Percentages





Summary of Trip Generation Calculation
 For 19,000 Th.Sq.Ft. GFA of Government Office Building
 August 02, 2011

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2 Way Volume	62.93	0.00	1.00	1310
7-9 AM Peak Hour Enter	4.94	0.00	1.00	94
7-9 AM Peak Hour Exit	0.94	0.00	1.00	18
7-9 AM Peak Hour Total	5.88	0.00	1.00	112
4-6 PM Peak Hour Enter	0.38	0.00	1.00	7
4-6 PM Peak Hour Exit	0.83	0.00	1.00	16
4-6 PM Peak Hour Total	1.21	0.00	1.00	23
AM Pk Hr. Generator, Enter	4.94	0.00	1.00	94
AM Pk Hr. Generator, Exit	0.94	0.00	1.00	18
AM Pk Hr. Generator, Total	5.88	0.00	1.00	112
PM Pk Hr. Generator, Enter	0.16	0.00	1.00	3
PM Pk Hr. Generator, Exit	2.87	0.00	1.00	55
PM Pk Hr. Generator, Total	11.03	0.00	1.00	210
Saturday 2-Way Volume	0.00	0.00	1.00	0
Saturday Peak Hour Enter	0.00	0.00	1.00	0
Saturday Peak Hour Exit	0.00	0.00	1.00	0
Saturday Peak Hour Total	0.00	0.00	1.00	0
Sunday 2 Way Volume	0.00	0.00	1.00	0
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	0.00	0.00	1.00	0

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation, 8th Edition, 2005.

TRIP GENERATION BY MICROTRANS

Palmetto Bay Charter School (K-12)
Project Quadrant Distribution
Committed Development (City Hall)

		TAZ 1126				
DIRECTION	DISTRIBUTION (%) DESIGN YEAR	DIRECTION	DISTRIBUTION	IN	OUT	TOTAL
NNE	40.65	NORTH	53.30%	50	10	60
ENE	4.61	EAST	8.19%	8	1	9
ESE	3.56	SOUTH	19.34%	18	3	22
SSE	4.37	WEST	19.17%	18	3	21
SSW	14.97					
WSW	10.34					
WNW	8.83					
NNW	12.65					
TOTAL	100.00		100.00%	94	18	112

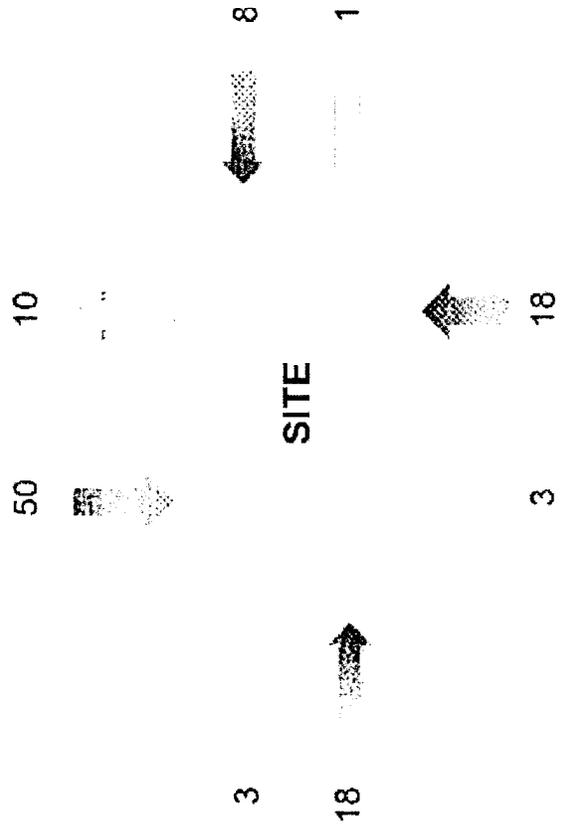


TABLE A5

Palmetto Bay Charter School (K-12)

INTERSECTION APPROACH VOLUMES

INTERSECTION NAME	APPROACH	MOVEMENT	AM PEAK HOUR COUNT	DATE OF COUNT	SE	AM PEAK SEASONALLY ADJUSTED EXISTING VOLUMES	BACKGROUND GROWTH FOR 2 YEARS	COMMITTED DEVELOPMENT	NET TRAFFIC TWO PROJECT	SITE TRAFFIC (MPH)	TOTAL TRAFFIC (MPH) PROPOSED 2013	
1 US 1/SP 5 S SW 97 Avenue E Highway Street	SOUTHBOUND	SBL	41	5/13/10	1.02	42	0	0	48	0	56	
		SBL	1		1.02	0	0	0	0	0	0	
		TOTAL	43		1.04	48	0	0	50	10	60	
	SOUTHWESTBOUND	SWBT	0	1.02	0	0	0	0	0	0	0	
		SWBL	0	1.02	0	0	0	0	0	0	0	
		TOTAL	0	1.02	0	0	0	0	0	0	0	
	NORTHBOUND	NBL	246	1.02	300	1.02	300	0	0	0	40	41
		NBL	11	1.02	11	1.02	11	0	0	0	10	27
		TOTAL	257	1.02	311	1.02	311	0	0	0	20	331
	NORTHWESTBOUND	NWBT	24	1.02	24	1.02	24	0	0	0	0	24
		NWBL	2057	1.02	2057	1.02	2057	0	0	0	0	2057
		TOTAL	2081	1.02	2081	1.02	2081	0	0	0	0	2081
EASTBOUND	EBT	2156	1.02	2156	1.02	2156	0	0	0	0	2156	
	EBL	7	1.02	7	1.02	7	0	0	0	0	7	
	TOTAL	2163	1.02	2163	1.02	2163	0	0	0	0	2163	
TOTAL			2589			2641	80	20	2741	198	2939	
2 US 1/SP 5 S E Highway Street	SOUTHBOUND	SBL	0	Wednesday September 15 2013	1.02	0	0	0	0	0	0	
		SBL	0		1.02	0	0	0	0	0		
		TOTAL	0		1.02	0	0	0	0	0		
	WESTBOUND	WBTL	11	1.02	11	1.02	11	0	0	0	0	
		WBBL	0	1.02	0	1.02	0	0	0	0	0	
		TOTAL	11	1.02	11	1.02	11	0	0	0	0	
	NORTHBOUND	NBL	2006	1.02	2006	1.02	2006	0	0	0	0	
		NBL	17	1.02	17	1.02	17	0	0	0	0	
		TOTAL	2023	1.02	2023	1.02	2023	0	0	0	0	
	EASTBOUND	EBT	0	1.02	0	1.02	0	0	0	0	0	
		EBL	28	1.02	28	1.02	28	0	0	0	0	
		TOTAL	28	1.02	28	1.02	28	0	0	0	0	
TOTAL			2364			2411	73	48	2556	183	2749	

TABLE A-5

Palmetto Bay Charter School (K-12)

INTERSECTION APPROACH VOLUMES

INTERSECTION NAME	APPROACH	MOVEMENT	AM PEAK HOUR COUNT	DATE OF COUNT	PHI	AM PEAK SEASONALLY ADJUSTED (EXISTING) (2010)	BACKGROUND GROWTH (AT 1.0% FOR 3 YEARS)	COMMITTED DEVELOPMENT	NET TRAFFIC PROJECT	SITE TRAFFIC (APPH) (2013)	TOTAL TRAFFIC (APPH) (2013)
5	SOUTHBOUND	SBV	5			5	0	5	10	0	10
		SDL	41			45	0	5	51	10	61
		TOTAL	46	0/06		100	0	0	0	0	0
	WESTBOUND	WBR	48	06/16		50	2	10	62	10	72
		WBT	0			0	0	0	0	0	0
		WPL	0	06/16		0	0	0	0	0	0
	NORTHBOUND	TOTAL	0		02:00	0	0	0	0	0	0
		NDR	0			0	0	0	0	0	0
		NBL	484	07/02		412	17	5	429	432	861
	EASTBOUND	TOTAL	10	Wednesday		10	0	0	10	10	157
EBV		7			422	13	14	449	570	1019	
EBT		3			0	0	0	0	0	0	
TOTAL	TOTAL	10			103	0	0	0	0	0	
	TOTAL	473			482	15	24	510	580	1090	

- Notes:
- 1. Intersection Name
 - 2. Intersection Approach
 - 3. Intersection Approach Movement
 - 4. TMC data provided by RSA, Inc.
 - 5. Date of Count
 - 6. Peak Hour Factor
 - 7. Signalization obtained from FDOT
 - 8. Seasonally Adjusted TMC = Count * SF. These are the volumes utilized in the existing condition intersection LOS analysis.
 - 9. Although the regression analysis yielded negative percentage, it was set to zero. A 100 percent background growth was utilized with a project build out of three years.
 - 10. Committed Traffic
 - 11. Net Traffic = Peak Seasonally Adjusted TMC + Background Committed
 - 12. Site traffic assignment
 - 13. Total Traffic = Net Traffic + Site Traffic. These are the volumes utilized in the proposed intersection LOS analysis.
 - 14. Volumes were extracted from adjacent intersection counts

TABLE : A6
 Palmetto Bay Charter School (K-12)

Intersection Level of Service Summary		AM Peak Hour			
Intersection	Intersection Control	Existing Condition (2010)		Proposed Condition w/ Project Traffic (2013)	
		LOS	Ave Veh Delay (s)	LOS	Ave Veh Delay (s)
1 US 1/SR 5 & SW 97 Avenue/ E Evergreen Street	Signalized	B	18.5	C	28.7
2 US 1/SR 5 & E Hibiscus Street	Signalized	A	3.8	B	16.6
3 SW 97 Avenue & E Hibiscus Street	Unsignalized	A	0.6	B	12.6
4 US 1/SR 5 & Guava Street	Unsignalized	A	0.2	A	1.8
5 SW 97 Avenue & Guava Street	Unsignalized	A	0.4	A	2.6

HCM Signalized Intersection Capacity Analysis
 1: Evergreen St & US 1

Proposed AM Peak Hour Condition
 Falmetto Bay Charter School (K-12)

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR2	NEL2	NEL	NET
Lane Configurations		W			↑			↑				↑↑↑
Volume (vph)	1	7	57	52	27	411	1	58	1	19	81	2199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				5.0
Lane Util. Factor		1.00			1.00			1.00				0.91
Frt		0.88			0.89			1.00				1.00
Frt Protected		0.99			0.99			1.00				1.00
Satd. Flow (prot)		1664			1676			1895				5066
Frt Permitted		0.99			0.93			0.99				1.00
Satd. Flow (perm)		1664			1900			1873				5066
Peak-hour factor PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	7	61	55	29	437	1	62	1	20	85	2339
RTOR Reduction (vph)	0	0	0	0	315	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	69	0	0	206	0	0	64	0	0	0	2471
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Perm			Perm			Perm			Perm	Perm	
Protected Phases		6			4			8				9
Permitted Phases	6			4			8			9	9	
Actuated Green, G (s)		8.9			21.4			21.4				124.7
Effective Green, g (s)		8.9			21.4			21.4				124.7
Actuated g/C Ratio		0.05			0.13			0.13				0.73
Clearance Time (s)		5.0			5.0			5.0				5.0
Vehicle Extension (s)		3.0			3.0			3.0				3.0
Lane Grp Cap (vph)		87			239			236				3716
v/s Ratio Prot												
v/s Ratio Perm		0.04			0.11			0.03				0.49
v/c Ratio		0.79			0.85			0.27				0.67
Uniform Delay, d1		79.6			72.9			67.2				11.8
Progression Factor		1.00			1.00			1.00				0.72
Incremental Delay, d2		37.6			31.5			0.6				0.8
Delay (s)		117.3			104.3			67.9				9.3
Level of Service		F			F			E				A
Approach Delay (s)		117.3			104.3			67.9				9.3
Approach LOS		F			F			E				A

Intersection Summary

HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Evergreen St & US 1

Proposed AM Peak Hour Condition
 Palmetto Bay Charter School (K-12)



Movement	NER
LANE Configurations	
Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Fit	
Fit Protected	
Satd. Flow (prot)	
Fit Permitted	
Satd. Flow (perm)	
Peak-Four factor PHF	0.94
Adj. Flow (vph)	27
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	2%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph):	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 2: Hibiscus St & US 1

Proposed AM Peak Hour Condition
 Palmetto Bay Charter School (K-12)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL2	NEL	NER
Lane Configurations		4			4					4	
Volume (vph)	0	140	29	0	62	15	0	0	4	2421	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	
Lane Util. Factor		1.00			1.00					0.94	
Frt		0.98			0.97					1.00	
Flt Protected		1.00			1.00					0.95	
Satd. Flow (prot)		1856			1849					4987	
Flt Permitted		1.00			1.00					0.95	
Satd. Flow (perm)		1856			1849					4987	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	155	32	0	69	17	0	0	4	2690	87
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	2	0
Lane Group Flow (vph)	0	188	0	0	81	0	0	0	0	2779	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm		
Protected Phases		4			8					2	
Permitted Phases	4								2		
Actuated Green, G (s)		16.0			16.0					146.0	
Effective Green, g (s)		16.0			16.0					146.0	
Actuated g/C Ratio		0.09			0.09					0.66	
Clearance Time (s)		4.0			4.0					4.0	
Vehicle Extension (s)		3.0			3.0					3.0	
Lane Grp Cap (vph)		175			174					4283	
v/s Ratio Prot		0.10			0.04						
v/s Ratio Perm										0.56	
v/c Ratio		1.07			0.46					0.65	
Uniform Delay, d1		77.0			72.9					3.8	
Progression Factor		1.00			1.04					1.00	
Incremental Delay, d2		89.2			1.9					0.8	
Delay (s)		166.2			78.0					4.6	
Level of Service		F			E					A	
Approach Delay (s)		166.2			78.0		0.0			4.6	
Approach LOS		F			E		A			A	

Intersection Summary

HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 3: Hibiscus St & SW 97 Ave/Franjo Rd

Proposed AM Peak Hour Condition
 Palmetto Bay Charter School (K-12)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	PT			T	T	
Volume (veh/h)	130	26	21	788	237	66
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	155	31	25	938	282	79
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn lane (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					1120	
pX, platoon unblocked						
vC, conflicting volume	1310	321	361			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCt, unblocked vol	1310	321	361			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
IF (s)	3.5	3.3	2.2			
pD queue free %	10	96	98			
cM capacity (veh/h)	172	719	1198			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	186	963	361			
Volume Left	155	25	0			
Volume Right	31	0	79			
cSH	197	1198	1700			
Volume to Capacity	0.94	0.02	0.21			
Queue Length 95th (ft)	192	2	0			
Control Delay (s)	99.6	0.6	0.0			
Lane LOS	F	A				
Approach Delay (s)	99.6	0.6	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			12.6			
Intersection Capacity Utilization			73.8%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 4: Guava St & US 1

Proposed AM Peak Hour Condition
 Palmetto Bay Charter School (K-12)

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖				↖			↑↑↑				
Volume (veh/h)	10	0	0	0	80	75	5	2378	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	0	87	82	5	2585	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								339			685	
pX platoon unblocked												
vC, conflicting volume	997	2585	0	2585	2585	862	0			2585		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	997	2585	0	2585	2585	862	0			2585		
IC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
IC 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	100	100	0	73	100			100		
cM capacity (veh/h)	0	25	1084	12	25	299	1622			166		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	11	168	522	1034	1034							
Volume Left	11	0	5	0	0							
Volume Right	0	82	0	0	0							
cSH	0	44	1622	1700	1700							
Volume to Capacity	Err	3.62	0.00	0.61	0.61							
Queue Length 95th (ft)	Err	Err	0	0	0							
Control Delay (s)	Err	Err	0.1	0.0	0.0							
Lane LOS	F	F	A									
Approach Delay (s)	Err	Err	0.0									
Approach LOS	F	F										
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			61.5%	ICU Level of Service		B						
Analysis Period (min)			15									

* SEE SIMTRAFFIC RESULTS
 THIS INT. GEOMETRY IS BEYOND THE HCM CAPABILITIES

4: Guava St & US 1 Performance by approach

Approach	EB	WB	NB	All
Delay / Veh (s)	17.6	38.3	0.7	25
St Del/Veh (s)	16.0	37.2	0.0	1.8

HCM LOS A

HCM Unsignalized Intersection Capacity Analysis
 5. Guava St & SW 97 Ave/Franjo Rd

Proposed AM Peak Hour Condition
 Palmetto Bay Charter School (K-12)

Movement	 EBL	 EBR	 NBL	 NBT	 SBT	 SBR
Lane Configurations				↓	↑	
Volume (veh/h)	0	0	157	861	61	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	171	936	66	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					741	
pX, platoon unblocked						
vC, conflicting volume	1349	72	77			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1349	72	77			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
pD queue free %	100	100	89			
cM capacity (veh/h)	148	991	1521			
Direction, Lane #	NB 1	SB 1				
Volume Total	1107	77				
Volume Left	171	0				
Volume Right	0	11				
cSH	1521	1700				
Volume to Capacity	0.11	0.05				
Queue Length 95th (ft)	9	0				
Control Delay (s)	2.8	0.0				
Lane LOS	A					
Approach Delay (s)	2.8	0.0				
Approach LOS						
Intersection Summary						
Average Delay			2.6	HCM LOS		A
Intersection Capacity Utilization			64.0%	CU Level of Service		B
Analysis Period (min)			15			

AM PEAK ACCUMULATION ASSESSMENT

for a New Public School (Countywide)

New School Name	Notes	Palmetto Bay Charter School (K-12)	
Surrogate School Name	1	Somerset Silver Palms	
Date / Day / Time of Data Collection	09/14/2010 7:00 AM - 8:30 AM	<small>collected data from an accumulation of staged loading vehicles at or around 28155A Ave on Tuesday, Wednesday, or Thursday for elementary, middle, and high schools.</small>	
Surrogate Enrollment	1,053	Total number of students E	
Capacity of New School	467	Student Stations C (First, Second & Third Arrival) (467 Students Ea.)	
Multiplier	0.44	[C / E]	
Surrogate Accumulations	100	passenger vehicles (including commercial vans)	
	1	large school buses	
	N/A	student vehicles (for high schools only)	
Projected Accumulations	44.35	passenger vehicles	
	0.44	large school buses	
	N/A	student vehicles	
Provided Spaces	103	passenger vehicles (See Table A7)	
	3	large school buses	
	25	student vehicles	
Percent Accommodated	232%	passenger vehicles	
	676%	large school buses	
	N/A	student vehicles	

1. The facility to be used as a surrogate school will be determined by MDP/DCI staff. The surrogate school data is used to form the basis for the projected school data.
2. The multiplier is used to determine the projected accumulations of the new school by applying the existing surrogate school accumulations to the calculated capacity of the new school, student station capacity by the surrogate school's student enrollment at the time of accumulation or data collection.
3. These are all the accumulated loading vehicles which are to be fully or partially staged or parked on the staging area site.

4. Information must be obtained from a field survey of proposed site plan indicating the total spaces to be provided for each vehicle type and 20' linear feet per passenger van or other commercial van, and 50' linear feet per large school bus. The survey will take into consideration 18' x 6' x 6' spaces along school property frontage. A special stipulation may require a stacking multiplication of these spaces in each area, and linear footage provided for each area including the width of bus bay is required. On street bus parking spaces are required to have a minimum 14' of width and off street bus parking bays are required to have a minimum of 10' foot width and on street passenger vehicle parking spaces are required to have a minimum 10' feet width, unless otherwise specified.

5. This is calculated as: [Projected Accumulation of Vehicles x Multiplier for each vehicle type] MDP/DCI requires all of the large school bus and student vehicle (large) vehicle accumulations to be accommodated. The Department also expects 100% of the passenger vehicle accumulation to be accommodated in the parking lot design and class location and limitations of the school site.

Please print data collector name, title,
mailing address, and phone number

Signature of Data Collector

PM PEAK ACCUMULATION ASSESSMENT

for a New Public School (Countywide)

New School Name	NCS	Palmetto Bay Charter School (K-12)	
Surrogate School Name	1	Somerset Silver Palms	
Date / Day / Time of Data Collection		09/14/2010 2:00 PM - 3:30 PM	(Record maximum accumulation of staged loading vehicles at or about 2:30 p.m. on Tuesday, Wednesday or Thursday for alternative mode and/or gradebooks)
Surrogate Enrollment		1,053	Total number of students, E
Capacity of New School		467	Student Stations, C (First, Second & Third Dismissal) (467 Students Ea.)
Multiplier	4	0.44	[C / E]
Surrogate Accumulations	3	217	passenger vehicles (including commercial vans)
		1	large school buses
		N/A	student vehicles (for high schools only)
Projected Accumulations		96.24	passenger vehicles
		0.44	large school buses
		N/A	student vehicles
Provided Spaces	4	103	passenger vehicles (See Table A7)
		3	large school buses
		25	student vehicles
Percent Accommodated	5	107%	passenger vehicles
		676%	large school buses
		N/A	student vehicles

1. The facility to be used as a surrogate school will be determined by MDPWD staff. The surrogate school data should reflect the facility that the proposed school will use.

2. This figure is used to determine projected accumulations at the new school by applying it to existing surrogate school accumulations. It is calculated by dividing the new station student station capacity by the surrogate school student enrollment and multiplying the result by the surrogate school accumulation data.

3. This number includes school-related loading vehicles which are legally or legally staged or parked on or near the school.

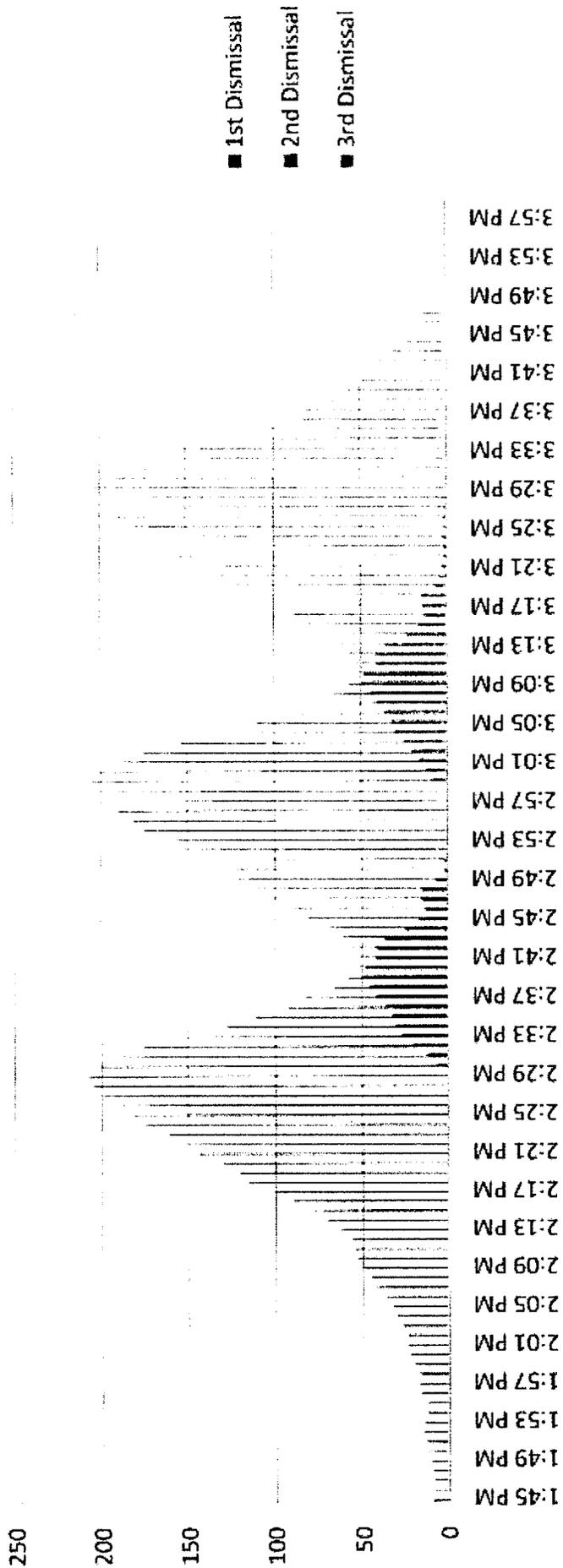
4. Information on site data from a field survey or proposed site plan indicating the total spaces to be provided for each vehicle type at 20' x 10' (passenger vehicle) or 30' x 10' (large school bus) and 30' x 10' (large school bus). Conditions to look for legal parking in paved areas along school property frontage. A sketch of site plan at 1/4" = 10' scale showing the location of these spaces, the type of spaces (on-street and off-street) provided for each vehicle type including the width of the spaces. The minimum width of a passenger vehicle parking space is 14 feet and a 20' x 10' on-street passenger vehicle loading bay is required to have a minimum of 10 feet width and on-street passenger vehicle parking spaces are required to be 10 feet wide with on-street passenger vehicle.

5. This calculation is: (Provided Spaces / Projected Accumulation) x 100% for each vehicle type. MDPWD requires a 100% of the large school buses and student vehicle. If space accumulations to be accommodated. The Department will evaluate 100% of the passenger vehicle accumulations to be accommodated depending on the site plan design, location, classification, and features of the school site.

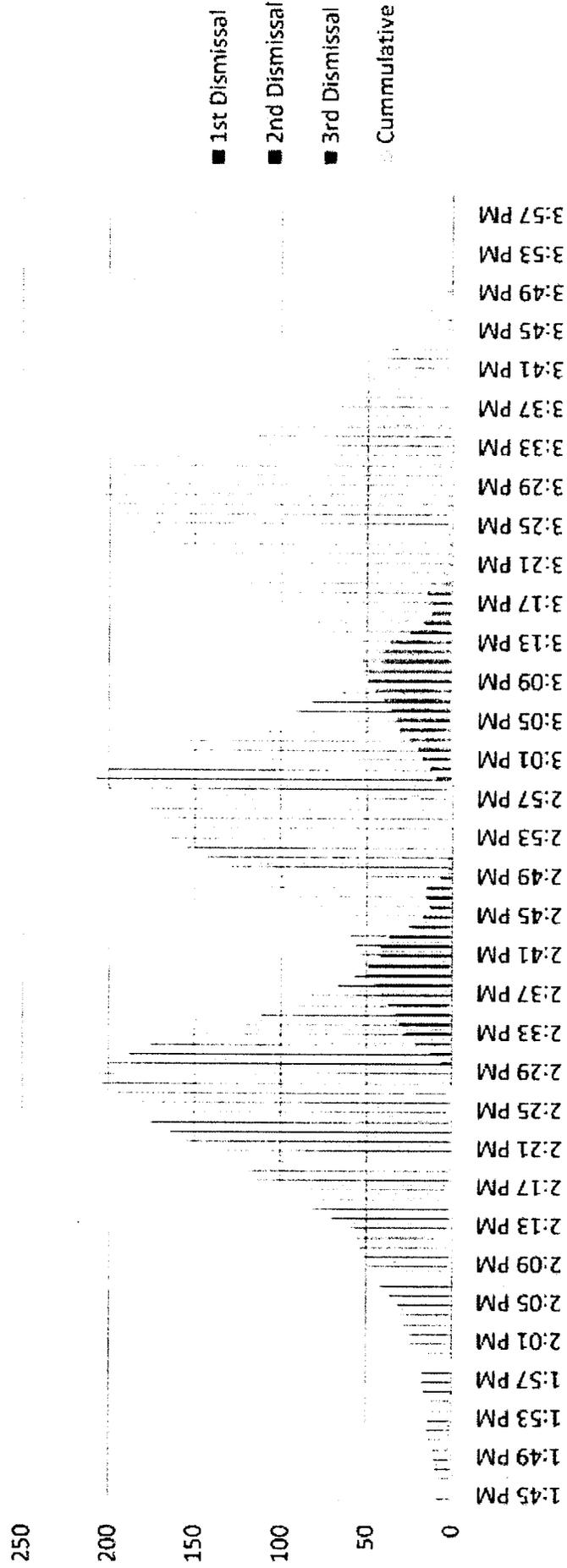
Please print data collector name, title, mailing address, and phone number

Signature of Data Collector

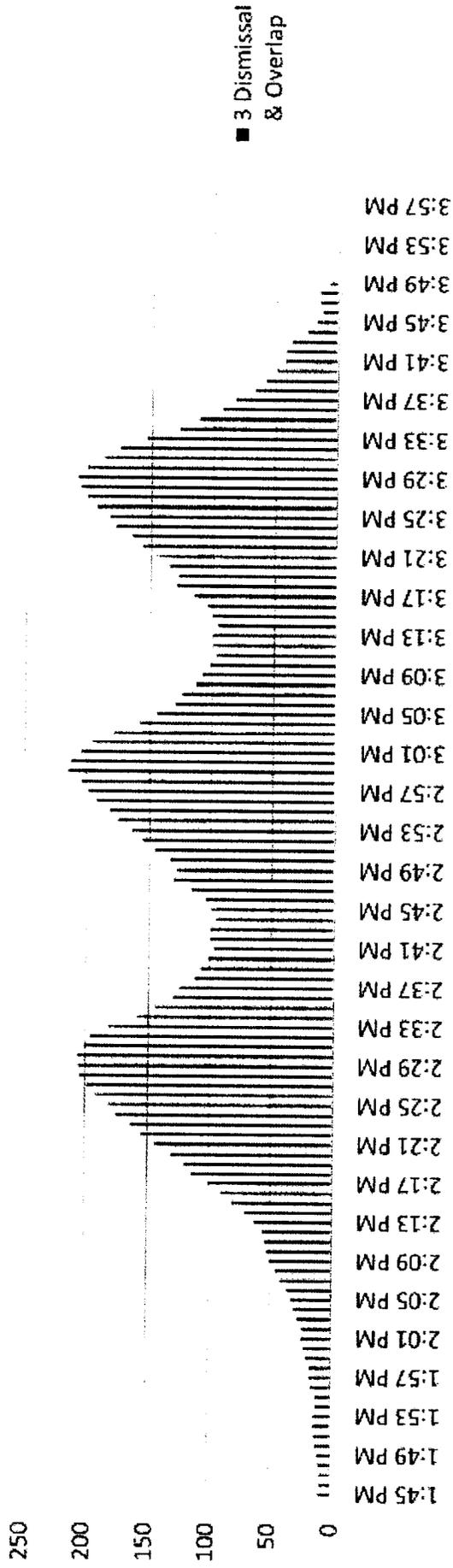
Surrogate School Queue with 3 Dismissal



Surrogate School Queue with 3 Dismissal - Queue Overlap



Surrogate School Queue with 3 Dismissal Cumulative with Overlap



Surrogate School

Three Dismissal Queue & Overlap Calculations

School Name: Somerset Silver Palms

School Address: 23255 SW 115 Avenue, Miami FL

	1st Dismissal	2nd Dismissal	3rd Dismissal	Cumulative
1:45 PM	10	0		10
1:46 PM	9	0		9
1:47 PM	9	0		9
1:48 PM	10	0		10
1:49 PM	11	0		11
1:50 PM	13	0		13
1:51 PM	14	0		14
1:52 PM	15	0		15
1:53 PM	15	0		15
1:54 PM	13	0		13
1:55 PM	13	0		13
1:56 PM	17	0		17
1:57 PM	18	0		18
1:58 PM	18	0		18
1:59 PM	21	0		21
2:00 PM	23	0		23
2:01 PM	25	0		25
2:02 PM	25	0		25
2:03 PM	25	0		25
2:04 PM	31	0		31
2:05 PM	33	0		33
2:06 PM	37	0		37
2:07 PM	42	0		42
2:08 PM	48	0		48
2:09 PM	50	0		50
2:10 PM	53	0		53
2:11 PM	55	0		55
2:12 PM	57	0		57
2:13 PM	53	0		53
2:14 PM	71	0	0	71
2:15 PM	62	0	0	62

Surrogate School

Three Dismissal Queue & Overlap Calculations

School Name: Somerset Silver Palms

School Address: 23255 SW 115 Avenue, Miami FL

	1st Dismissal	2nd Dismissal	3rd Dismissal	Cumulative
2:16 PM	91	0	0	91
2:17 PM	101	0	0	101
2:18 PM	115	0	0	115
2:19 PM	121	0	0	121
2:20 PM	131	0	0	131
2:21 PM	144	0	0	144
2:22 PM	156	0	0	156
2:23 PM	164	0	0	164
2:24 PM	176	0	0	176
2:25 PM	182	0	0	182
2:26 PM	192	0	0	192
2:27 PM	199	0	0	199
2:28 PM	206	0	0	206
2:29 PM	207	0	0	207
2:30 PM	206	8	0	206
2:31 PM	158	13	0	201
2:32 PM	176	21	0	197
2:33 PM	154	28	0	152
2:34 PM	126	31	0	159
2:35 PM	112	33	0	145
2:36 PM	95	37	0	130
2:37 PM	85	42	0	125
2:38 PM	67	46	0	113
2:39 PM	58	50	0	108
2:40 PM	49	53	0	102
2:41 PM	42	55	0	97
2:42 PM	42	57	0	96
2:43 PM	37	63	0	100
2:44 PM	25	71	0	96
2:45 PM	17	82	0	96

Surrogate School

Three Dismissal Queue & Overlap Calculations

School Name: Somerset Silver Palms

School Address: 23255 SW 115 Avenue, Miami FL

	1st Dismissal	2nd Dismissal	3rd Dismissal	Cumulative
2:46 PM	13	91	0	104
2:47 PM	15	101	0	116
2:48 PM	15	115	0	130
2:49 PM	7	121	0	128
2:50 PM	2	131	0	133
2:51 PM	2	144	0	146
2:52 PM	0	155	0	156
2:53 PM	0	164	0	164
2:54 PM	0	175	0	176
2:55 PM	0	182	0	182
2:56 PM	0	192	0	192
2:57 PM	0	199	0	199
2:59 PM	0	205	0	205
2:59 PM	0	207	10	217
3:00 PM	0	200	13	213
3:01 PM	0	158	15	206
3:02 PM	0	176	21	197
3:03 PM	0	154	25	180
3:04 PM	0	128	31	159
3:05 PM	0	112	33	145
3:06 PM	0	63	37	100
3:07 PM	0	83	42	125
3:08 PM	0	67	48	115
3:09 PM	0	58	50	108
3:10 PM	0	49	53	102
3:11 PM	0	42	55	97
3:12 PM	0	42	57	99
3:13 PM	0	37	63	100
3:14 PM	0	25	71	96
3:15 PM	0	17	52	69

Surrogate School

Three Dismissal Queue & Overlap Calculations

School Name: Somerset Silver Palms

School Address: 23255 SW 115 Avenue Miami FL

	1st Dismissal	2nd Dismissal	3rd Dismissal	Cummulative
3:10 PM	0	13	51	104
3:11 PM	0	15	101	116
3:12 PM	0	15	115	130
3:13 PM	0	7	121	125
3:20 PM	0	5	131	135
3:21 PM	0	3	144	147
3:22 PM	0	2	155	155
3:23 PM	0	2	164	155
3:24 PM	0	3	175	175
3:25 PM	0	2	182	184
3:26 PM	0	2	192	194
3:27 PM	0	2	199	201
3:28 PM	0	2	205	207
3:29 PM	0	2	207	209
3:30 PM	0	1	208	201
3:31 PM	0	0	188	188
3:32 PM	0	0	176	176
3:33 PM	0	0	154	154
3:34 PM	0	0	126	126
3:35 PM	0	0	112	112
3:36 PM	0	0	93	93
3:37 PM	0	0	83	83
3:38 PM	0	0	67	67
3:39 PM	0	0	58	58
3:40 PM	0	0	49	49
3:41 PM	0	0	42	42
3:42 PM	0	0	42	42
3:43 PM	0	0	37	37
3:44 PM	0	0	25	25
3:45 PM	0	0	17	17

Surrogate School

Three Dismissal Queue & Overlap Calculations

School Name: Somerset Silver Palms

School Address: 23255 SW 115 Avenue Miami FL

	1st Dismissal	2nd Dismissal	3rd Dismissal	Cumulative
3:46 PM	0	0	13	13
3:47 PM	0	0	14	14
3:48 PM	0	0	15	15
3:49 PM	0	0	7	7
3:50 PM	0	0	2	2
3:51 PM	0	0	2	2
3:52 PM	0	0	0	0
3:53 PM	0	0	0	0
3:54 PM	0	0	0	0
3:55 PM	0	0	0	0
3:56 PM	0	0	0	0
3:57 PM	0	0	0	0
3:58 PM	0	0	0	0
3:59 PM	0	0	0	0



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS

Fort Lauderdale Office - 1800 Eler Drive, Suite 600, Fort Lauderdale, Florida 33317
Phone: 954.921.7791 • Fax: 954.921.8907
Palm Beach Office - 560 Village Blvd, Suite 340, West Palm Beach, Florida 33409
Phone: 561.684.6161 • Fax: 561.684.6160

Memorandum

DATE: December 15, 2010
TO: Julian H. Perez, AICP
Director of Planning and Zoning
Code Compliance
Village of Palmetto Bay
8950 SW 152 Street
Palmetto Bay, Fl. 33157
FROM: James E. Spinks III, PE, PTOE
SUBJECT: Palmetto Bay Charter School - Traffic Impact Study/Site Plan Review
PROJECT: 10-3790
CC: Jeff Maxwell, PE, PTOE - Calvin Giordano

Calvin, Giordano and Associates, Inc. was requested by the Village of Palmetto Bay to review the Traffic Impact Study for the proposed Palmetto Bay Charter School (K-12).

The proposed Charter School is located east of the intersection of SW 97th Avenue and Guava Street and planned to have 1,400 students in grades Kindergarten through Twelfth. In addition, a residential/condo with 103 dwelling units and 10,000 square feet of retail is planned for the proposed site.

The following comments are provided regarding the Palmetto Bay Charter School (K-12):

Traffic Impact Study Comments:

1. Traffic study indicates that 103 vehicles can be stacked on proposed site. Please show these vehicles, including dimensions on the site plan or figure.
2. Study does not address PM peak period (4:00 pm to 6:00 pm). The proposed site contains retail and residential uses, therefore this must be addressed. Please revise.
3. Study states that analysis intersections were chosen based on close proximity of the site. However, intersections and links should be accounted for by impact. All intersections and links where the trips are greater than 3% of the link capacity should be analyzed. Please revise.

4. The study states that trip distribution and assignment utilized is consistent with roadway networks and knowledge of local traffic patterns. Since this is not consistent with TAZ 1126, please clarify specifically how the distribution percentages were calculated and clearly show on a figure that can be followed. The site traffic does not appear to represent the distribution utilized in Table 5. Please revise.
5. The existing condition analysis utilized traffic counts were taken in September 2010. However, as of December 2010 Guava Street has been modified from a 2-way street to a 1-way westbound only street within the study limits. Please thoroughly explain the methodology utilized to redirect traffic within the report with text and figure.
6. Level of service analysis does not address AM or PM link volumes. Please include link volume analysis as part of this study.
7. Somerset Silver Palms was used as a surrogate school to develop the trip generation rate of 1.017 trips per student. The surrogate school begins classes at 8:15 am and dismisses at 3:00 pm without a staggered start time. Your data collection results indicate that students began to arrive more than an hour before school begins, yet the percent distribution utilized shows most students arriving between appropriated 30 minute stagger times. Please provide justification for the percent distributions utilized in Table 3 and appropriately apply only to applicable arrival group (high school, middle school, elementary school). In addition, a separate PM peak hour trip generation was not performed and should be completed. Please revise.
8. It appears in Table 3 that students arrive by time rather than by student population (high school, middle school, elementary school). Will the high school be capped at 448 students, middle school at 420 students and elementary at 490 students, as inferred by the cumulative student capacities in Table 3? Please indicate maximum student population by category (high school, middle school, elementary school).
9. A pass-by rate of 50% was assumed for the AM peak period. This exceeds guidance provided in the FDOT Site Impact Handbook, which states that "In general, the number of pass-by trips should not exceed 10 percent of the adjacent street traffic during the peak hour or 25 percent of the project's external trip generating potential." Please revise.
10. Please include the proposed new city hall and the proposed Palmer Trinity School as committed projects in the background traffic calculations.

11. The queue analysis data collection shows that vehicles are queued well over an hour before school dismissal during both the AM and PM periods. Therefore, an overlap of queuing should be accounted for in the analysis based on the percentage of vehicles queued using the proposed 30-minute stagger times. A sample of this stagger is included in Appendix A of these comments for your review.
12. Please note: During the AM peak period, it is anticipated that many of the elementary school students will arrive earlier than anticipated for working parents. This was not taken into account in the queue analysis for the AM period. Please revise.
13. Will high school student vehicles access the 25 parking spaces through the proposed student drop-off route? In addition, how will the surplus 26 spaces be accessed? How will they be distinguished? Please clarify.
14. Please indicate the bus route that will be utilized to access the bus drop area to ensure no conflicts with passenger vehicles.
15. The AM peak intersection analysis in the westbound direction at driveway 1 shows a 95% queue length of 255 feet. This exceeds the distance to the entry/exit for the parking garage which services the residential component of this proposed development. Therefore, the queue from the school will trap vehicles in the garage. Please indicate how this will be addressed.
16. This study makes no mention of a drop-off/pick-up management plan. Will card readers or a special traffic management plan be in place to facilitate the staggered arrival/dismissal times? Please clarify.

Site Plan Comments:

1. The proposed site falls within the area designated as the "Franjo Triangle Commercial Island", for which a charrette/vision plan have been adopted by the Village. Within this plan, SW 97th Avenue between SW 174th Street and SW 184th Street is designated as "Main Street". The proposed site does not appear to follow this vision plan, as described:
 - a. A 15-foot wide pedestrian passage shall be dedicated along the eastern boundary of the proposed site, adjacent to the park. This is not shown on the site plan in accordance to design criteria guidelines of the vision plan.
 - b. New public streets in accordance to design criteria guidelines of the vision plan shall be dedicated in the locations where the proposed Driveway 1 and

- Driveway 2 are shown on the site plan, which is not reflected. In addition turn radii must comply with the guidelines within the vision plan.
- c. The roads and pedestrian passage way cannot be closed and shall be dedicated and open to the public. Privately built streets shall provide an approved plat restriction to allow general public access. No gates that impede through traffic are permitted along A or B streets. No new B streets or pedestrian passages shall be deleted.
 - d. No block may be longer than 500 feet, and 1600 feet in perimeter.
 - e. SW 97th Avenue/Main Street between SW 174th Street and SW 184th Street is designated as a bike route. This requires signage designating the bike route.
 - f. SW 97th Avenue/Main Street between SW 174th Street and SW 184th Street has a developed design criteria which contains 6-foot sidewalks, green space, parking lanes and turn lanes within the 80 foot right-of-way.

If you have any questions or comments regarding the above information, please feel free to contact us at (954) 921- 7781.

Sincerely,
CALVIN, GIORDANO & ASSOCIATES, INC.
James E. Spinks III, PE, PTOE

Cc: Jeff Maxwell, PE, PTOE, Calvin, Giordano & Associates

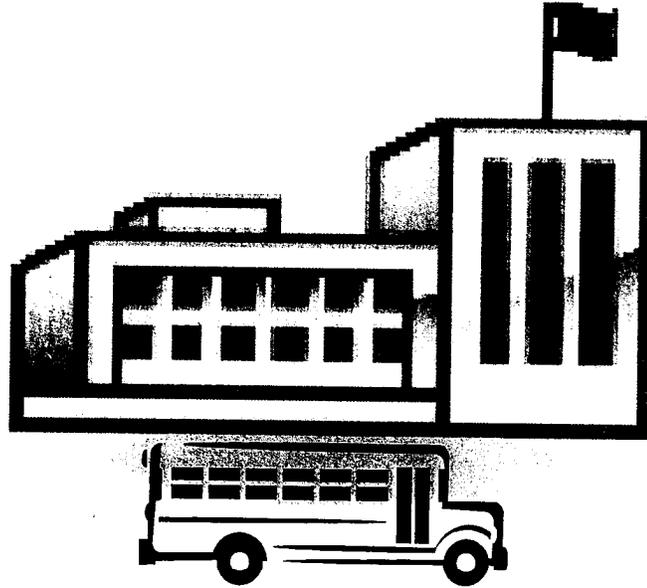
Appendix A –
Sample - Staggered Queue Analysis

Maximum Capacity = 3 shifts at 45 min and 858 students (174 Cars)

Pick-up Period	K, 1, and 2		3, 4, and 5		6, 7, and 8		Total
	Veh =	58	Veh =	58	Veh =	58	
1:30 PM to 1:35 PM	3.5%	2					2
1:35 PM to 1:40 PM	2.9%	2					2
1:40 PM to 1:45 PM	2.9%	2					2
1:45 PM to 1:50 PM	29.2%	17					17
1:50 PM to 1:55 PM	42.1%	24					24
1:55 PM to 2:00 PM	55.6%	32					32
2:00 PM to 2:05 PM	56.7%	33		0			33
2:05 PM to 2:10 PM	60.2%	35		0			35
2:10 PM to 2:15 PM	75.4%	44		0			44
2:15 PM to 2:20 PM	77.2%	45	3.5%	2			47
2:20 PM to 2:25 PM	87.1%	51	2.9%	2			52
2:25 PM to 2:30 PM	94.2%	55	2.9%	2			56
2:30 PM to 2:35 PM	100.0%	58	29.2%	17	0		75
2:35 PM to 2:40 PM	99.4%	58	42.1%	24	0		82
2:40 PM to 2:45 PM	92.4%	54	55.6%	32	0		86
2:45 PM to 2:50 PM	89.5%	52	56.7%	33	0		85
2:50 PM to 2:55 PM	52.0%	30	60.2%	35	0		65
2:55 PM to 3:00 PM	29.2%	17	75.4%	44	0		61
3:00 PM to 3:05 PM	6.4%	4	77.2%	45	3.5%	2	51
3:05 PM to 3:10 PM	0.6%	0	87.1%	51	2.9%	2	53
3:10 PM to 3:15 PM	2.3%	1	94.2%	55	2.9%	2	58
3:15 PM to 3:20 PM	2.3%	1	100.0%	58	29.2%	17	76
3:20 PM to 3:25 PM	2.3%	1	99.4%	58	42.1%	24	83
3:25 PM to 3:30 PM	1.8%	1	92.4%	54	55.6%	32	87
3:30 PM to 3:35 PM			89.5%	52	56.7%	33	85
3:35 PM to 3:40 PM			52.0%	30	60.2%	35	65
3:40 PM to 3:45 PM			29.2%	17	75.4%	44	61
3:45 PM to 3:50 PM			6.4%	4	77.2%	45	49
3:50 PM to 3:55 PM			0.6%	0	87.1%	51	51
3:55 PM to 4:00 PM			2.3%	1	94.2%	55	56
4:00 PM to 4:05 PM			2.3%	1	100.0%	58	59
4:05 PM to 4:10 PM			2.3%	1	99.4%	58	59
4:10 PM to 4:15 PM			1.8%	1	92.4%	54	55
4:15 PM to 4:20 PM					89.5%	52	52
4:20 PM to 4:25 PM					52.0%	30	30
4:25 PM to 4:30 PM					29.2%	17	17
4:30 PM to 4:35 PM					6.4%	4	4
4:35 PM to 4:40 PM					0.6%	0	0
4:40 PM to 4:45 PM					2.3%	1	1
4:45 PM to 4:50 PM					2.3%	1	1
4:50 PM to 4:55 PM					2.3%	1	1
4:55 PM to 5:00 PM					1.8%	1	1

RG&A

Traffic Impact Study



Palmetto Bay Charter School (K-12)

SW 97th Avenue & SW 178th Street
Palmetto Bay, Florida

November 9th, 2010

Richard Garcia & Associates

ENGINEER'S CERTIFICATION

I, Richard Garcia, P.E. # 54886, certify that I currently hold an active Professional Engineers License in the State of Florida and am competent through education and experience to provide engineering services in the civil and traffic engineering disciplines contained in this report. In addition, the firm Richard Garcia & Associates, Inc. holds a Certificate of Authorization # 9592 in the State of Florida. I further certify that this report was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions and recommendations made herein are true and correct to the best of my knowledge and ability.

PROJECT DESCRIPTION: Palmetto Bay Charter School (K-12) -
Traffic Impact Study

PROJECT LOCATION: SW 97th Avenue & SW 178th Street
Palmetto Bay, Florida



11/09/2010

Florida Registration No, 54886

Date



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Executive Summary

The purpose of this study is to analyze the traffic impacts for the proposed Palmetto Bay Charter School (K-12) site. The subject site is planned to have a charter school with 1,400 students in grades Kindergarten through Twelfth (K-12), a Residential Condo/Townhouse with 103 Dwelling Units (DU) and Retail with 10,000 Square Feet (SF). This site is currently vacant and has approximately 5 acres.

The subject site is located east of the intersection of SW 97th Avenue and Guava Street in the Village of Palmetto Bay, Florida. The traffic impacts to the intersections most impacted were evaluated. This analysis was performed for the existing and proposed condition during the AM peak hour at the following intersections:

- US 1/SR 5 & SW 97th Avenue/E Evergreen Street
- US 1/SR 5 & Hibiscus Street
- US 1/SR 5 & Guava Street
- SW 97th Avenue & Guava Street
- SW 97th Avenue & Hibiscus Street

The trip generation characteristics for the proposed charter school were developed using actual data from the surrogate school, Somerset Silver Palms. Moreover, the ITE rates were used to determine the vehicle trips for the residential and retail component. The project trip generation calculations resulted in **998** vehicle trips of which **508** vehicle trips are entering and **490** vehicle trips will exit the site during the **AM Peak Hour**. These peak hour trips were distributed consistent with the surrounding roadway network and local knowledge of traffic patterns within the study area.

In addition to the above, Accumulation Assessments were performed for the school's AM and PM peak period to determine the projected vehicle stacking at the proposed school during the arrival and dismissal times. These assessments follows the Miami-Dade County Public Works Department methodology and consist of taking information from local data and applying it to the proposed charter school. The following hours are the proposed arrival and dismissal times for this charter school:

Grades	Arrivals		Dismissals	
High School	1st	7:30 AM	1st	2:30 PM
Middle School	2nd	8:00 AM	2nd	3:00 PM
Elementary School	3rd	8:30 AM	3rd	3:30 PM

The Palmetto Bay Charter School (K-12) is providing stacking capacity for 103 queuing vehicles and three (3) large school buses within the site. Moreover, the subject school is providing 25 parking spaces for high school students driving to school.

Consistent with the requirements of Miami-Dade County, an Accumulation Assessment was performed to evaluate the stacking capacity provided on the proposed site. In order to accommodate the projected vehicle stacking within site and to reduce impacts, this charter school has evaluated three (3) arrivals and three (3) dismissals separated by 30-minute intervals. As a result, the AM Peak Accumulation Assessment yielded **44.35 passenger vehicles** for each arrival, which corresponds to **232 percent** being accommodated. The PM Peak Accumulation Assessment resulted in **91.80 vehicles** for each dismissal, which corresponds to **112 percent** being accommodated. As previously, the school has capacity to accommodate three (3) buses which exceeds the projected accumulation of one (1) bus. The table below summarizes the Accumulation Assessment for the arrivals and dismissals of students.

Description	Projected Queuing		Provided Spaces			Percent Accommodated	
	Passenger Vehicles	Student Vehicles	Passenger Vehicles		High School Students	Passenger Vehicles	High School Students
			[77 Stacking]	[26 Surplus Parking]	*[25 parking spaces]		
Each Arrival	44.35	25	77	26	25	232%	100%
Each Dismissal	91.80	25	77	26	25	112%	100%

Note:

* Parking spaces are designated for high school students only.

Since high school students arrive at 7:30 AM, it applies only to the first arrival.

Based on the results of the Queuing Analysis, the subject school is providing sufficient stacking/queuing capacity to accommodate the projected vehicle stacking within the site. Additional stacking capacity is provided by the school with the availability of 18 surplus parking spaces. These mitigation measures were not used in the Queuing Analysis since the stacking capacity within the drop-off areas is adequate.

In order to evaluate the traffic impacts to the intersections most impacted, intersection Level of Service (LOS) analyses were performed for the AM peak hour. As a result, the analysis yielded acceptable LOS results for both the existing and proposed condition. The following table summarizes the LOS results.

Intersection Level of Service Summary					
Intersection	Intersection Control	Existing Condition (2010)		Proposed Condition w/ Project Traffic (2013)	
		LOS	Ave Veh Delay (s)	LOS	Ave Veh Delay (s)
1 US 1/SR 5 & SW 97 Avenue/ E Evergreen Street	Signalized	B	18.5	C	27.5
2 US 1/SR 5 & E Hibiscus Street	Signalized	A	3.8	B	10.6
3 SW 97 Avenue & E Hibiscus Street	Unsignalized	A	0.6	B	10.7
4 US 1/SR 5 & Guava Street	Unsignalized	A	0.2	A	4.4
5 SW 97 Avenue & Guava Street	Unsignalized	A	0.4	A	2.5
6 SW 97 Avenue & Driveway 1	Unsignalized	N/A	N/A	C	24.1
7 SW 97 Avenue & Driveway 2	Unsignalized	N/A	N/A	A	0.4

In conclusion, the intersections most impacted resulted in acceptable LOS results for the existing and proposed condition. As such, this project does not pose a negative impact on traffic as sufficient roadway capacity exists to support this charter school. Lastly, the subject school will have sufficient queuing capacity to accommodate the projected vehicle stacking.

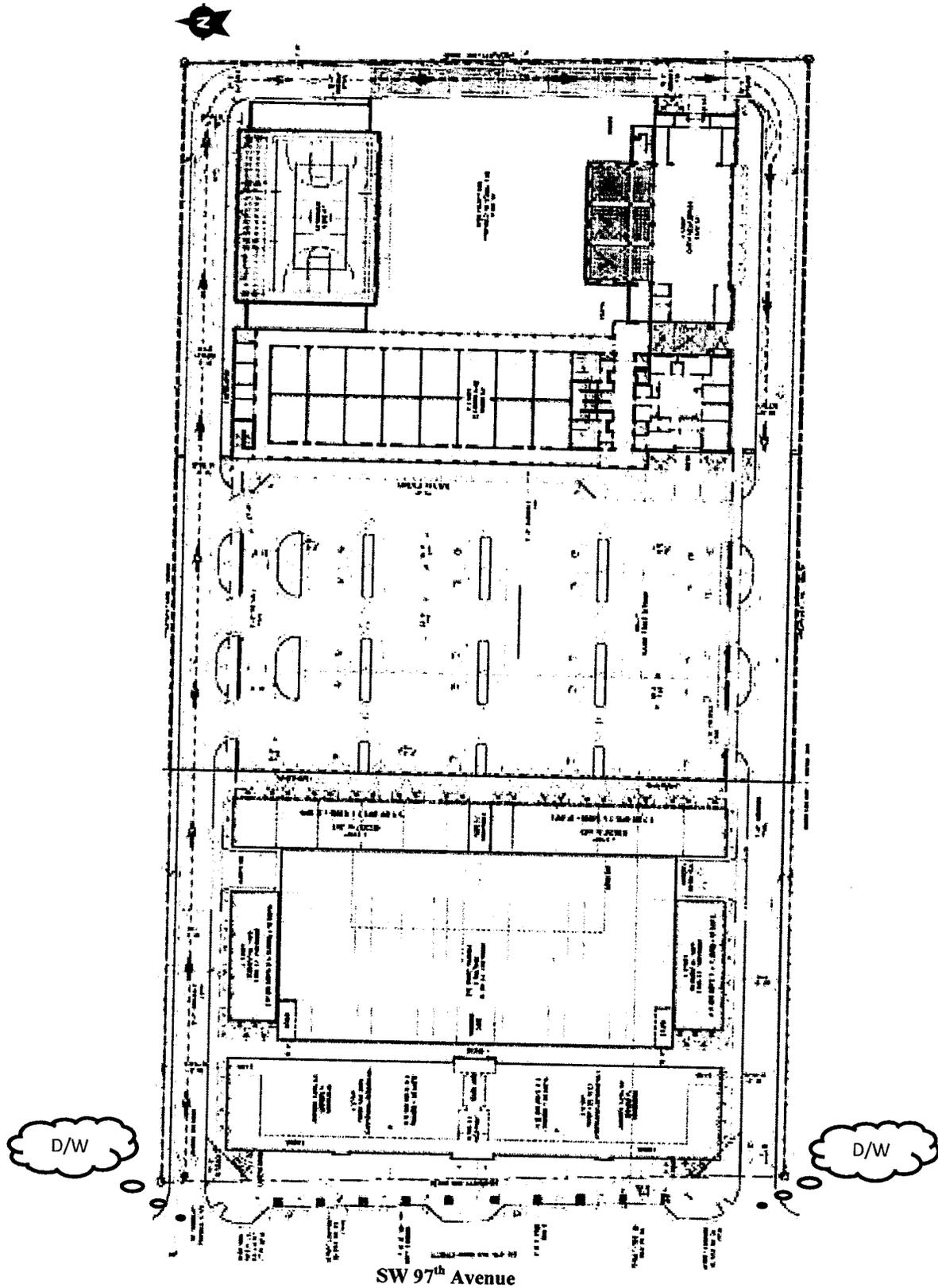
Introduction

The purpose of this study is to evaluate the associated traffic impacts for the proposed development which includes Charter School, Residential and Retail. Additionally, this report has evaluated the projected vehicle stacking for the proposed Palmetto Bay Charter School. The subject site is situated on the east side of SW 97th Avenue between SW 178th Street and SW 178th Terrace in the Village of Palmetto Bay, Florida.

This report follows the methodologies adopted by the Institute of Transportation Engineer's (ITE) Traffic Impact Studies Manual and follows the guidelines of Miami-Dade County Public Works Department. Lastly, this report has evaluated the following:

- Trip Generation
- Trip Distribution
- Traffic Counts
- Level of Service
- Accumulation Assessment/Queuing Analysis
- Recommendations

Figure 2: Site Plan



Existing Condition (2010)

The existing condition analysis identifies the current operational and geometric characteristics of the roadways within the study area. The purpose of this section is to provide a basis of comparison to future conditions.

Data Collection

Manual Turning Movement Counts (TMC) were taken at the nearby intersections identified below. These counts were collected on Wednesday, September 15th, 2010 during the AM peak hour of 7:00 AM to 9:00 AM during a typical school week. Please note the volumes for the intersections of Guava Street (US 1/SR 5 and SW 97th Avenue) were obtained by interpolating the volumes from the adjacent intersection counts. Moreover, this TMC data was adjusted for peak seasonal variations by utilizing the 2009 Florida Department of Transportation Season Factor (SF) of 1.02. The following traffic counts and operational characteristics were gathered at the following intersections:

- **US 1/SR 5 & SW 97th Avenue/E Evergreen Street**
- **US 1/SR 5 & E Hibiscus Street**
- **SW 97th Avenue & E Hibiscus Street**
- **US 1/SR 5 & Guava Street**
- **SW 97th Avenue & Guava Street**

These intersections would be the most impacted due to their close proximity to the subject location. Figure 3 below depicts the seasonally adjusted existing AM Peak Hour Turning Movement Counts (TMC's) graphically. Appendix 4 contains the tables used to develop these figures and the raw data.

Figure 3: Existing AM Peak Hour TMC's



Existing Level of Service (LOS)

Using the above AM Turning Movement Counts, intersection Level of Service (LOS) analyses were performed for the peak seasonal existing condition. These analyses were performed following the 2000 Highway Capacity Manual methodology and using the Synchro 7/SimTraffic software. As a result, all the intersections analyzed yielded LOS B or better. Please note the greatest traffic impact for this site will occur during the AM peak hour and therefore, the worst case scenario (AM Peak Hour) was analyzed. Table 1 provides a summary of the LOS results, while Appendix 5 contains the program output.

Table 1: Existing Condition Level of Service

	Intersection	Intersection Control	Existing Condition (2010)	
			LOS	Ave Veh Delay (s)
1	US 1/SR 5 & SW 97 Avenue/ E Evergreen Street	Signalized	B	18.5
2	US 1/SR 5 & E Hibiscus Street	Signalized	A	3.8
3	SW 97 Avenue & E Hibiscus Street	Unsignalized	A	0.6
4	US 1/SR 5 & Guava Street	Unsignalized	A	0.2
5	SW 97 Avenue & Guava Street	Unsignalized	A	0.4

Project Traffic

This section of the report will cover the project traffic for the proposed development. In addition to calculating the trip generation and trip distribution, all the project traffic including the school, residential and retail components was developed and utilized to determine the future condition with project traffic in the subsequent sections.

Trip Generation

The trip generation characteristics for the proposed charter school were developed using actual data from the surrogate school, Somerset Silver Palms. This surrogate school was discussed with and approved by the Miami-Dade County Public Works Department during the scoping phase of this project.

The surrogate school data was collected on Tuesday, September 14th, 2010 during the school's AM and PM peak period of 7:00 to 9:00 AM and 1:45 PM to 3:45 PM, respectively. These hours correspond to the arrival and dismissal times for the surrogate school. The trip generation rate from the surrogate school yielded 1.017 trips per student. Subsequently, this rate was utilized to calculate the trip generation for the proposed 1,400 students. This analysis resulted in 1,424 vehicle trips of which 749 vehicle trips are entering and 675 vehicle trips will exit the site during the school's **AM Peak Period** from 7:00 AM – 8:45 AM. Table 2 summarizes the AM peak period trip generation for the charter school.

Table 2: Trip Generation – AM Peak Period (7:00 – 8:45 AM)

LAND USE (LU)	UNITS	LU CODE	AM PEAK PERIOD TRIPS			
			TRIP GENERATION RATE	TRIPS		
				IN	OUT	TOTAL
EXISTING USE Vacant						
PROPOSED USE Charter School	1,400 Students	◇	1.017	749	675	1,424
Gross Vehicle Trips				749	675	1,424

NOTES:

◇ Trip Generation Rate obtained from surrogate school data, Table: T1 in Appendix A.

Subsequently, the above net vehicle trips were analyzed in 15-minute intervals during the school's AM peak period consistent with the proposed school's arrival in order to obtain the AM peak hour trips. As a result, the **AM Peak Hour** Trip Generation yielded **925** vehicle trips of which **487** vehicle trips are entering and **438** vehicle trips will exit the site from

7:30 AM to 8:30 AM. Table 3 depicts the AM peak hour trips consistent with three (3) arrivals and the 15-minute intervals breakdown utilized to determine the AM Peak Hour.

Table 3: Charter School AM Peak Hour Trips (Three Arrivals)

Time	Percent of Students	Number of Students	Cummulative Students	Vehicles-In	Vehicles-Out	Total Trips	Cummulative Trips	Operation
7:00 AM - 7:15 AM	12%	168	168	90	81	171	171	First Arrival 7:30 AM (High School Students)
7:15 AM - 7:30 AM	20%	280	448	150	135	285	456	
7:30 AM - 7:45 AM	10%	140	140	75	67	142	142	Second Arrival 8:00 AM (Middle School Students)
7:45 AM - 8:00 AM	20%	280	420	150	135	285	427	
8:00 AM - 8:15 AM	10%	140	140	75	67	142	142	Third Arrival 8:30 AM (Elementary School Students)
8:15 AM - 8:30 AM	25%	350	490	187	169	356	498	
8:30 AM - 8:45 AM	3%	42	42	22	21	43	43	
Total	100%	1,400		749	675	1,424		PEAK HOUR TRIPS

SCHOOL AM PEAK HOUR	TRIPS		
	IN	OUT	TOTAL
AM Peak Hour (7:30 - 8:30)	487	438	925

In addition, the proposed vehicle trips for the residential and retail component were obtained from the ITE Trip Generation Manual, 8th Ed. ITE's Land Use (LU) 230: Residential Condo/Townhouse and LU 814: Specialty Retail was utilized to determine the trip generation rates. The trip generation calculations revealed there will be 53 vehicles trips for the residential use and 20 vehicle trips during the AM peak hour. The trip generation calculations results for the subject project are summarized in Table 4 below. The rates and percentages for AM peak hour trips are included in Appendix 1.

Table 4: Subject Project AM Peak Hour Trips (School, Residential & Retail)

LAND USE (LU)	UNITS	LU CODE	TRIP GENERATION RATE	AM PEAK HOUR		
				IN	OUT	TOTAL
				TRIPS	TRIPS	TRIPS
EXISTING USE Vacant						
PROPOSED USE Charter School *	1,400 Students	-	-			
Residential Condo/Townhouse ** (Eqn)	103 DU	230	0.8LN(X)+0.26			
OR Residential Condo/Townhouse ** (Rates)	103 DU	230	0.44	7	38	45
Shopping Center ** (Eqn)	10.000 Th.Sq.Ft.	820	0.59LN(X)+2.32	24	16	40
Pass-by 50%				12	8	20
Sub-Total (Shop Gross Trips - Pass-by Trips)						
OR Shopping Center ** (Rates)	10.000 Th.Sq.Ft.	820	1.00	6	4	10
Gross Vehicle Trips				508	490	998

NOTES:

- * Trip Generation was calculated consistent with three (3) shifts (arrival/dismissal) proposed. Refer to Table:A2 in Appendix A.
- ** Trip Generation rate obtained from ITE Trip Generation, 8th Edition.

Values utilized in calculation/analysis.

Trip Distribution

The Traffic Analysis Zone (TAZ) for the subject project is TAZ 1126 as assigned by the Metropolitan Planning Organization's (MPO). The County's TAZ map was obtained using the available GIS (Graphical Information System) and is included in Appendix 2. Moreover, this TAZ was reviewed in order to develop a trip distribution for the subject project. However, the trip distribution percentages were based on the surrounding roadway network and local knowledge of traffic patterns within the study area. The corresponding traffic distribution percentages and trip distributions were assigned to the North, South, East and West directions as outlined in Table 5 while Figure 4 depicts the vehicle trips. Figure 5 illustrates the AM Peak Hour site traffic for the subject project.

Table 5: Trip Distribution Percentages

DIRECTION	DISTRIBUTION (%) DESIGN YEAR	TAZ 1126		UTILIZED				
		DIRECTION	DISTRIBUTION	DIRECTION	DISTRIBUTION	IN	OUT	TOTAL
	40.65			NORTH	20%	102	98	200
	4.61			EAST	50%	254	245	499
	3.58			SOUTH	20%	102	98	200
	4.37			WEST	10%	50	49	99
	14.97							
	10.34							
	8.83							
	12.65							
TOTAL	100.00		100.00%		100.00%	508	490	998

* Distribution percentages were developed consistent with roadway networks and knowledge of local traffic patterns.

Figure 4: Directional Traffic Assignments

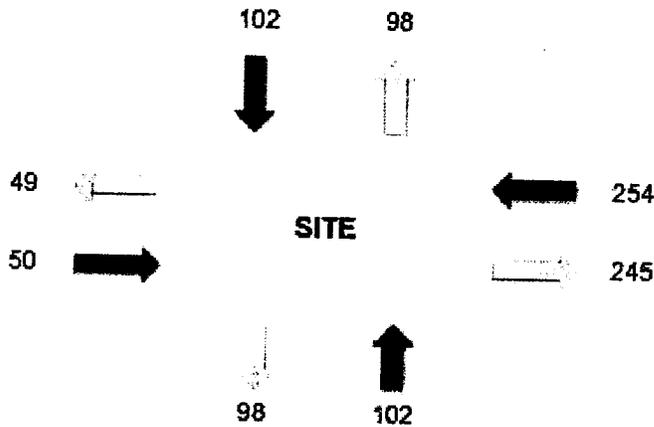
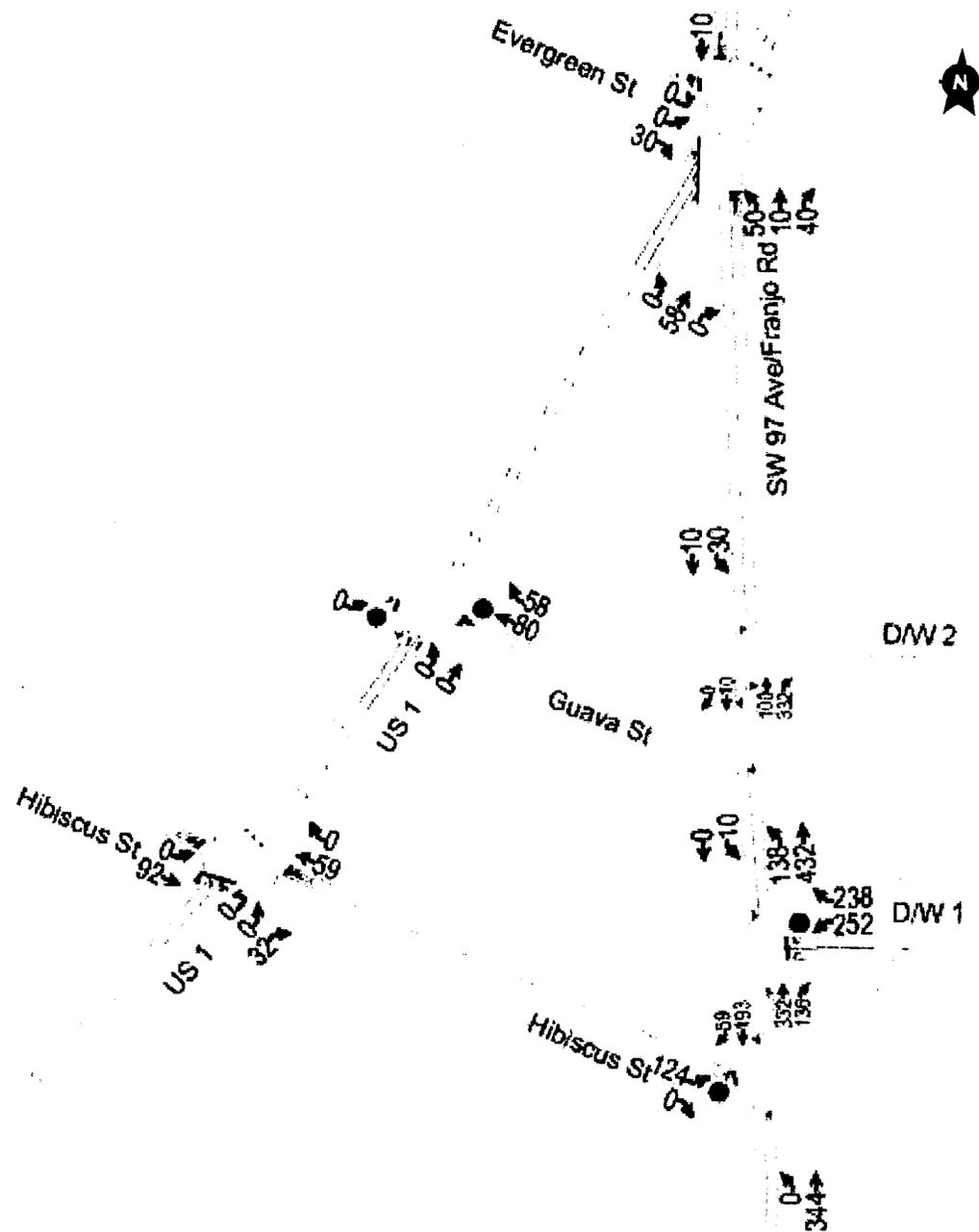


Figure 5: AM Peak Hour Site Traffic



Proposed Condition (2013)

The proposed condition includes background growth, committed development and site traffic. Please note a conservative 1.0% background growth was utilized since the performed regression analysis resulted in a negative growth percent.

Background Growth

Using the 2009 historical traffic counts data from the Florida Department of Transportation's Count Station 2563, a regression analysis was performed using the all the available historical traffic counts (7 years). This analysis resulted in a trend growth rate of negative (-) 0.33 percent. As such, a conservative 1.0% growth rate was applied to the existing traffic counts. The count station data and analysis is included in Appendix 3.

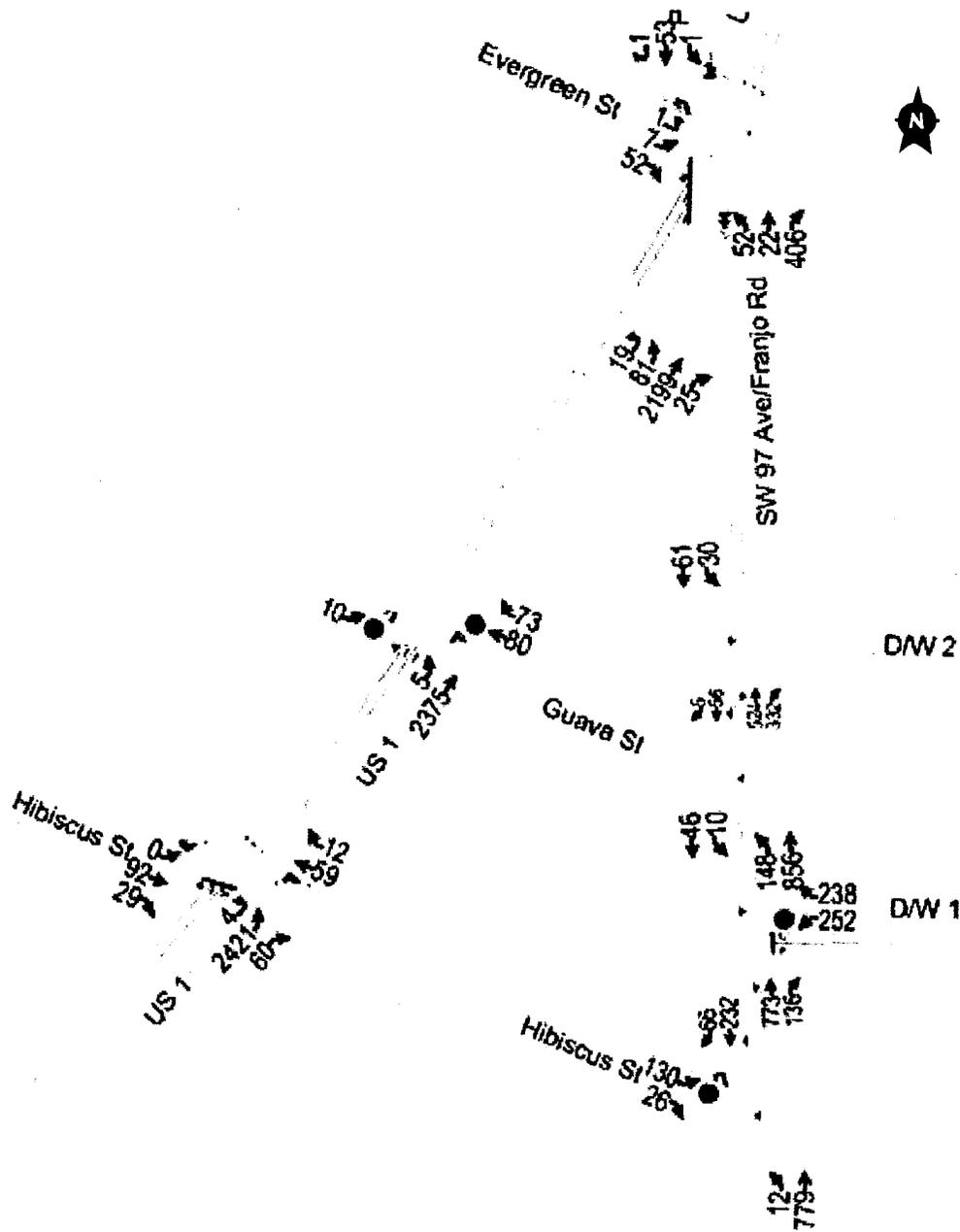
Proposed Condition LOS with Project Traffic

The intersection volumes previously shown in Figure 3 were augmented with background growth and the project traffic. This forms the basis for the proposed condition in 2013. The intersections most impacted were evaluated to obtain the proposed condition level of service. As such, the analysis yielded LOS C or better for all the intersections analyzed. Please note that Guava Street is planned to be converted to a one-way roadway (westbound only) and therefore, the proposed condition analysis was performed consistent with the future roadway geometry. Furthermore, the existing eastbound traffic on Guava Street was redirected to the adjacent intersections. Lastly, the proposed driveways will operate at an acceptable LOS. Table 6 summarizes the proposed AM peak hour LOS. Figure 7 depicts the proposed condition with project traffic during the AM peak hour. The calculations for the specific movements at each intersection are included in Appendix 4.

Table 6: Proposed Condition Level of Service (LOS)

	Intersection	Intersection Control	Proposed Condition w/ Project Traffic (2013)	
			LOS	Ave Veh Delay (s)
1	US 1/SR 5 & SW 97 Avenue/ E Evergreen Street	Signalized	C	27.5
2	US 1/SR 5 & E Hibiscus Street	Signalized	B	10.6
3	SW 97 Avenue & E Hibiscus Street	Unsignalized	B	10.7
4	US 1/SR 5 & Guava Street	Unsignalized	A	4.4
5	SW 97 Avenue & Guava Street	Unsignalized	A	2.5
6	SW 97 Avenue & Driveway 1	Unsignalized	C	24.1
7	SW 97 Avenue & Driveway 2	Unsignalized	A	0.4

Figure 6: Proposed AM Peak Hour Condition (2013)



Accumulation Assessment / Queuing Analysis

The Palmetto Bay Charter School (K-12) is providing two (2) drop-off areas for the arrival and dismissal of students. One drop-off area will be exclusively for passenger vehicles and the other is designated for buses only. Based on the linear distance for vehicle stacking, the subject project can accommodate up to 77 queuing vehicles within the site. Moreover, the subject school is providing 26 surplus parking spaces that are expected to be utilized for vehicle stacking during the arrival and dismissal of students if and when necessary. Lastly, the bus drop-off area can accommodate up to three (3) large school buses. Figure 7 below depicts the queuing areas while Table 8 provides a description of the stacking zones.

Figure 7: Vehicle Accumulation Graph

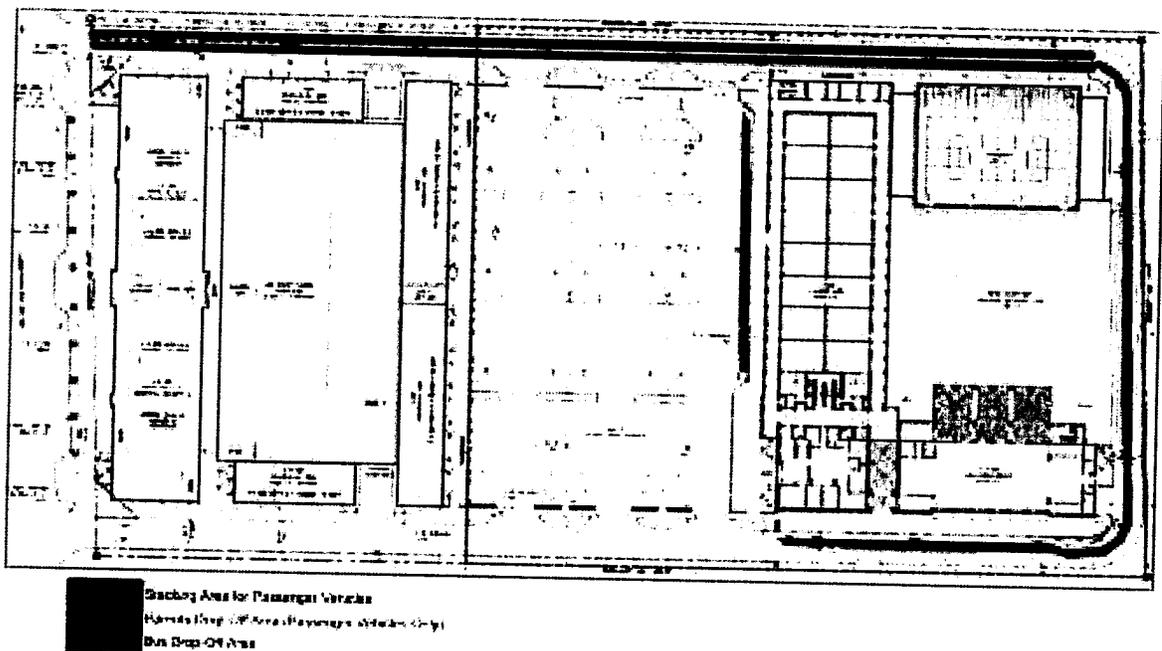


Table 7: Stacking/Queuing Capacity

Zone	Location Description	Distance	Units	Vehicle Type	Vehicle Length (ft)	Vehicles Accommodated
1	Stacking from the Northernmost Driveway	1,557	LF	Car/Van	22	70
2	Parents Drop-Off Area	155	LF	Car/Van	22	7
3	Bus Drop-Off Area	170	LF	Car/Van	50	3
4	Surplus Parking (26 Provided, 26 Utilized)			Car/Van		26
Total Passenger Vehicles Accommodated						77
Total Passenger Vehicles Accommodated with Surplus Parking						103

Consistent with the requirements of Miami-Dade County, Accumulation Assessments were performed to evaluate the stacking/queuing capacity provided on the proposed site. This assessment consisted of taking local school data and applying it to the proposed charter school's traffic from Project Traffic section of this report.

As previously mentioned, the proposed charter school is providing stacking capacity for 103 passenger vehicles. In order to accommodate the projected vehicle stacking within site and to reduce impacts, this charter school has evaluated three (3) arrivals and three (3) dismissals separated by 30-minute intervals. As a result, the AM Peak Accumulation Assessment yielded **44.35 passenger vehicles** for each arrival, which corresponds to **232 percent** being accommodated. The PM Peak Accumulation Assessment resulted in **91.80 vehicles** for each dismissal, which corresponds to **112 percent** being accommodated. Moreover, the school has capacity to accommodate three (3) buses which exceeds the projected accumulation of one (1) bus. Lastly, the charter school will provide 25 parking spaces for high school students driving to school. Table 9 summarizes the assessment for the arrivals and dismissals of students.

Table 8: Accumulation Assessment / Queuing Analysis Summary

Description	Projected Queuing		Provided Spaces			Percent Accommodated	
	Passenger Vehicles	Student Vehicles	Passenger Vehicles		High School Students	Passenger Vehicles	High School Students
			[77 Stacking]	[26 Surplus Parking]	*[25 parking spaces]		
Each Arrival	44.35	25	77	26	25	232%	100%
Each Dismissal	91.80	25	77	26	25	112%	100%

Note:

* Parking spaces are designated for high school students only.

Since high school students arrive at 7:30 AM, it applies only to the first arrival.

Based on the results of the Accumulation Assessment results, the subject school is providing sufficient stacking/queuing capacity to accommodate the projected vehicle and bus stacking within the site. Lastly, Appendix 6 contains the Accumulation Assessment/Queuing Analysis forms used to determine the above.

Conclusion

The proposed Palmetto Bay Charter School site is being programmed to accommodate 1,400 students. In addition to the charter school, the subject site will be comprised of a Residential Condo/Townhouse with 103 Dwelling Units (DU) and Retail with 10,000 Square Feet (SF). The trip generation characteristics for the proposed charter school were developed using actual data from the surrogate school, Somerset Silver Palms. Lastly, the ITE rates were used for the residential and retail component. As a result, all the site traffic was added to the traffic volumes at the intersections most impacted to perform a Level of Service (LOS) analysis.

Consistent with the Highway Capacity Manual (HCM 2000) methodology and using the Synchro/SimTraffic software, intersection Level of Service (LOS) analyses were performed in order to evaluate the traffic impacts of the subject project at the intersections most impacted. These analyses were performed for the existing and proposed AM peak hour condition and yielded acceptable LOS results. The proposed condition includes the existing trips, background growth and site traffic. The **AM Peak Hour** site traffic yielded **998** vehicle trips.

The Palmetto Bay Charter School (K-12) is providing stacking capacity for 103 queuing vehicles and three (3) large school buses within the site. Moreover, the subject school is providing 25 parking spaces for high school students driving to school.

Consistent with the requirements of Miami-Dade County, an Accumulation Assessment was performed to evaluate the stacking capacity provided on the proposed site. In order to accommodate the projected vehicle stacking within site and to reduce impacts, this charter school has evaluated three (3) arrivals and three (3) dismissals separated by 30-minute intervals. As a result, the AM Peak Accumulation Assessment yielded 44.35 passenger vehicles for each arrival, which corresponds to 232 percent being accommodated. The PM Peak Accumulation Assessment resulted in 91.80 vehicles for each dismissal, which corresponds to 112 percent being accommodated. As previously, the school has capacity to accommodate three (3) buses which exceeds the projected accumulation of one (1) bus.

Based on the results contained in this report, the subject project is providing sufficient stacking/queuing capacity for the charter school to accommodate the projected vehicle stacking within the site. Lastly, based on our analysis, this project does not pose a negative impact on traffic as sufficient roadway capacity exists to support this development.