



OPERATIONAL MANAGEMENT PLAN

05.23.22

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Introduction

Franklin Academy is a grade K through 8 charter school located at 18800 Pines Boulevard in the City of Pembroke Pines. Current school enrolment is 1,340. Planned improvements of a gymnasium and 16 classrooms will increase the student population of 410 to a total of 1,750 students overall. The school has a substantial waiting list, and it is anticipated that this increase in students will occur immediately once the facility addition is completed. This documents outlines the operations and maintenance procedures for the campus once the proposed improvements are made.

Site Operations

Franklin Academy is. grade K through 8 charter school with a current student enrollment of 1,340 students. The following section will detail the Franklin Academy Pembroke Pines (K-8) policies and procedures for Hours of Operation and Car Rider Drop-off/pick-up.

1. Hours of Operation

Grades K-5: Classes begin at 7:30 am and classes dismiss at 2:15 pm

Grades 6- 8: Classes begin at 8:30 am and classes dismiss at 3:15 pm

- K-5 - early arrival starts at 7:00 am daily for all students. Breakfast is available for students arriving by 7:20 am.
- 6-8 - early arrival starts at 8:00 am daily for all students. Breakfast is available for students arriving by 8:20 am.

After-care is provided until 6:00 pm daily, for a monthly fee, and typically accommodates 20% - 30% of the students.

2. Pre-First School Day Activities

Franklin Academy Pembroke Pines (K-8) shall perform the following activities, prior to the first day of school.

- a. All Parents attend orientation session where specific information related to Drop-off/Pick-up procedures is disseminated. (route, loading locations, times, restrictions, etc.)
- b. Updated Drop-off/Pick-up procedures are posted to the transportation section of campus website
- c. Parent pick-up information synchronized with DashPass dismissal system and parents are provided instructions on how to download the DashPass app.

- d. Parents register for carpools/ride sharing via DashPass app.
- e. Parents are required to sign parent contract committing to comply with all operational and safety procedures.
- f. Acknowledging that Kindergarten parents typically choose to escort their child into the school on the first day, when they would otherwise utilize curb-side drop-off, Franklin has developed our “Kickstart Franklin” process for incoming kindergarten families. “Kickstart Franklin” occurs on the two days before the 1st day of school. On the first day of “Kickstart Franklin” families are welcome to park and escort their child to the classroom. On the second day, they practice the “typical” Franklin Drop-off/Pick-up procedures of staying in their vehicles and performing curb-side Drop-off/Pickup. This process greatly diminishes the amount of customary first-day traffic delays.

3. *Car Rider Drop-off Policies and Procedures*

Morning drop-off occurs over an extended period. The (13) thirteen curb-side dismount points provide for safe and efficient student drop-off. Designated school staff are present to supervise and support the entire drop-off process for car riders and those students riding the bus (see <https://ppk8.franklin-academy.org/school-info#transportation-information> for instructions provided to the parents. Section 2.5 of the Plan for details of bus rider drop-off/pick-up policies and procedures.) Traffic control police officers are utilized as described in Section 4 of the Plan.

4. *Car Rider Pick-up Policies and Procedures*

Franklin Academy has partnered with Dash Educational Solutions for safe and efficient student pick-up by parents. Utilizing the DashPass applications, Franklin Academy maintains a systematic and steady flow of students for safe discharge and loading resulting in decreased traffic, decreased wait times for parents, and greatest safety for students. Franklin Academy Pick-up procedures include the following:

- a. Staggered release times for elementary and middle school grades. Students are dismissed 1 hour apart allowing for the parent traffic to be diluted resulting in lower traffic counts during peak periods
- b. Registered Carpools: The DashPass application allows for easy parent managed carpool settings, allowing parents to create and manage carpools, reducing the number of vehicles on campus each day.
- c. Franklin Academy retains law enforcement/security guard/community service aide for traffic support during high volume periods to ensure a fluid and safe process.
- d. Parents are prohibited from arriving, stopping or entering the school more than one hour prior to the posted start of dismissal. This greatly decreases traffic build-up caused by cars queuing well

ahead of dismissal times. By allowing traffic to arrive only at the time of dismissal, cars are onsite only a short period before they are matched with students loading and exit the site. Franklin Academy is able to enforce this policy through parent contracts and student retention policies.

- e. DashPass System (patent pending):
 - i. Upon arriving onsite for student pickup, parents open the DashPass App on their cell phones. Parents are assisted by staff at the entry pedestal to ensure steady traffic flow.
 - ii. The system alerts the appropriate classroom teacher by displaying the student's name and time of parent arrival on laptops and/or overhead projectors networked into every classroom.
 - iii. Teachers direct students to the loading area and indicate in the system that the student has been dismissed from the classroom.
 - iv. Students arrive just as cars complete the queuing process and are loaded by staff/parents at one of (13) thirteen curbside loading stations.
- f. Elementary students which have a sibling in middle school are provided supervision, at no cost to parents, for the additional hour and released together. This process is referred to as "SiblingLink". This allows parents to arrive only once for student pickup, further reducing cars excessive cars onsite. In the morning, parents can also take advantage of SiblingLink so they only have to drop off their elementary and middle school students at one time.
- g. Staff will provide traffic control of stacking lanes, stopping and releasing queued cars in a fair and orderly process curbside.

5. *Bus Rider Drop-off/Pick-up Policies and Procedures*

As shown and demonstrated on the site plan, the school site can accommodate 6,000 linear feet of vehicles stacking and (6) six curbside 65-passenger school bus positions on site.

As demonstrated in previous sections, there will be two (2) start times and two (2) dismissal times, based on grade. These staggered release times allow buses to conduct two complete student transportation runs and allow for two shifts of bus pick-up and drop-off during dismissal time, thus maximizing the use of the buses and reducing vehicle impact.

6. *Site Staffing Positions*

In support of pick-up and drop-off policies and procedures, specific site staffing positions have been established. The activity of each position is described as follows and correspond with positions identified on the site plan.

Position	Description
1. Intersection manager	Manages intersection to avoid gridlock and ensure safe pedestrian crossing. This position acts as a crossing guard when required.
2. Merge manager	Ensures the orderly merging of traffic from four lanes to two.
3. Merge manager	Manages the orderly merge into the curbside pick-up / drop-off lane.
4-8 Loading staff	Deliver students to and from vehicles.
9 Bus Lane Merge Manager	Prevents traffic from entering the bus lane during loading and unloading procedures.
10-11 Loading staff	Delivers students to and from buses.

Site managers will place cones as necessary to guide traffic during pick-up and drop-off times of operation.



site plan

- staffing position
- traffic cones
- pedestrian and bike route

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area plan

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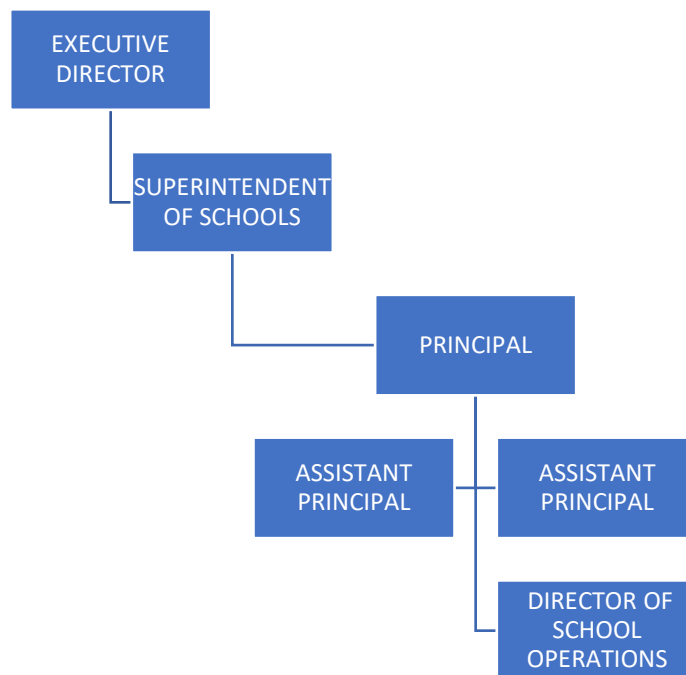
7. *Emergency Procedures*

In case of emergency requiring rescue or fire truck access to the site, staff will discontinue pick-up or drop-off procedures, return the students in the building if appropriate, and clear all drives isles of buses and parent vehicles.

8. *Yearly Review*

The Operational and Maintenance Plan will be reviewed with the City on a yearly basis and amended as may be necessary.

Organizational Structure



CONTACT INFORMATION:

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*Traffic Impact Analysis
For Submittal to the
City of Pembroke Pines*

FRANKLIN ACADEMY PEMBROKE PINES CAMPUS (K-8) EXPANSION PEMBROKE PINES, FLORIDA



Kimley»Horn

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May 2022
Revised May 23, 2022
144750006

Traffic Impact Analysis
for Submittal to
the City of Pembroke Pines

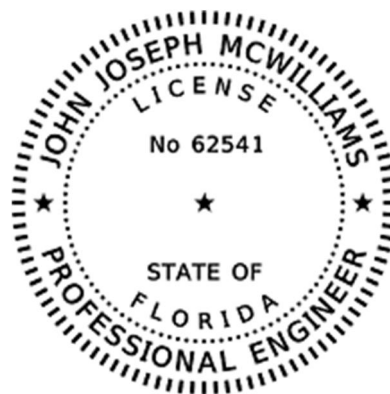
FRANKLIN ACADEMY
PEMBROKE PINES CAMPUS (K-8) EXPANSION
PEMBROKE PINES, FLORIDA

Prepared for:

Consilium Atlantic, Inc.

Prepared by:

Kimley-Horn and Associates, Inc.



This document has been digitally signed and sealed by John J. McWilliams, P.E., on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Kimley»Horn

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Inc. May 2022

Revised May 23, 2022

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EXECUTIVE SUMMARY

Franklin Academy – Pembroke Pines Campus (K-8), located at 18800 Pines Boulevard in Pembroke Pines, Florida, is proposed to be expanded. The site is proposed to be expanded to the east, constructing a new educational building and parking areas. Additionally, modifications to site circulation/vehicle stacking are also proposed to increase the stacking capacity of the site. Currently, the school has a maximum enrollment of 1,340 students. The proposed enrollment expansion will increase the school's enrollment by 410 students for a total enrollment of 1,750 students. The expansion and renovation are expected to be completed by year 2024.

Access to the school drop-off/pick-up area is provided via one (1) right-in/right-out only driveway and one (1) directional median opening (right-in/right-out/left-in) driveway along SR 820/Pines Boulevard.

Trip generation calculations (trips per student) for the proposed school expansion were calculated based upon peak hour turning movement volumes collected at each site driveway and the current enrollment. The proposed enrollment increase is expected to generate 398 new weekday A.M. school peak hour trips and 267 new weekday P.M. school peak hour trips.

The results of the intersection capacity analysis indicate that all study intersections are expected to operate at level of service (LOS) D or better during the school A.M. and school P.M. peak hours under all analysis scenarios, with the exception of the northbound approach of the intersection of SR 820/Pines Boulevard and the East Driveway, which is expected to operate at LOS E during the school A.M. peak period. Note that these results are common during peak periods where a high traffic volume, free-flowing major street intersects with a stop-controlled minor street.

Vehicle queuing was evaluated based on accumulation data collected at the existing school during the school arrival and dismissal periods. The results of the accumulation analysis show that the proposed school plan will accommodate 20 percent (20%) more than the projected vehicle demand during the arrival and dismissal groups within school site.

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INTRODUCTION

Franklin Academy – Pembroke Pines Campus (K-8), located at 18800 Pines Boulevard in Pembroke Pines, Florida, is proposed to be expanded. The site is proposed to be expanded to the east, constructing a new educational building and parking areas. Additionally, modifications to site circulation/vehicle stacking are also proposed to increase the stacking capacity of the site. Currently, the school has a maximum enrollment of 1,340 students. The proposed enrollment expansion will increase the school's enrollment by 410 students for a total enrollment of 1,750 students. The expansion and renovation are expected to be completed by year 2024. A detailed project location map is provided as Figure 1. A conceptual site plan is included in Appendix A.

Kimley-Horn and Associates, Inc. has completed this traffic impact analysis for submittal to the City of Pembroke Pines. The purpose of the study is to assess the project's impact on the surrounding roadway network. The study's methodology is consistent with the requirements of the City of Pembroke Pines. Methodology correspondence detailing the traffic study requirements is included in Appendix B.



EXISTING TRAFFIC

School A.M. peak period (6:45 A.M. to 8:45 A.M.) and school P.M. peak period (1:45 to 3:45 P.M.) turning movement counts were collected on Tuesday April 12, 2022 corresponding to existing peak school arrival and dismissal periods at the following intersections:

1. SR 820/Pines Boulevard at SW 184th Avenue
2. SR 820/Pines Boulevard at SW 186th Avenue
3. SR 820/Pines Boulevard at East Driveway
4. SR 820/Pines Boulevard at West/SmartStop Storage Driveway
5. SR 820/Pines Boulevard at SW 196th Avenue

Additionally, vehicle accumulation (drop-off/pick-up queue length) data was collected in five (5) minute intervals during the same peak periods as the turning movement counts.

All traffic volumes were collected in 15-minute intervals and the peak hour was determined for each intersection. The appropriate Florida Department of Transportation (FDOT) peak season conversion factor for the date of data collection was shown as 1.00. Therefore, a peak season correction factor was not applied to the collected traffic data. Signal timing information was obtained from Broward County - Traffic Engineering Division for all study area signalized intersections.

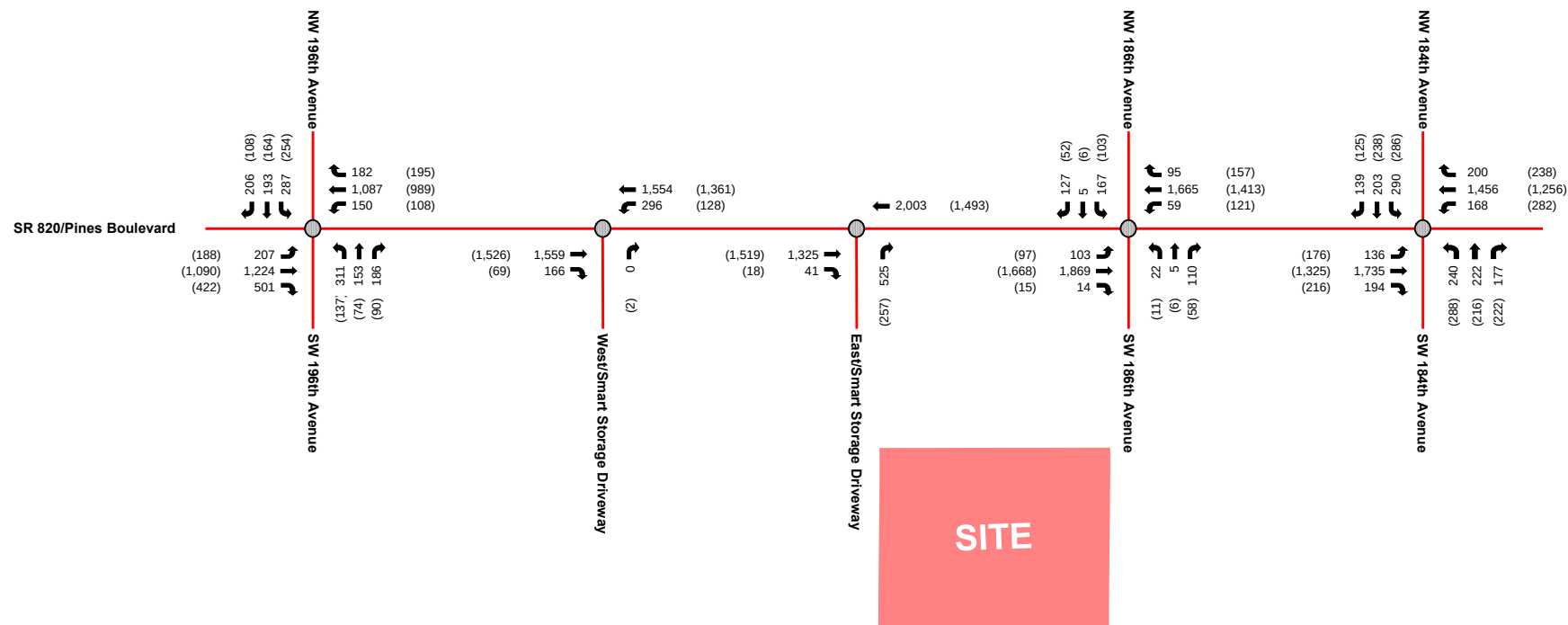
The turning movement counts and the FDOT peak season factor category report are included in Appendix C. Figure 2 presents the existing turning movement volumes at the study intersections during the school A.M. and school P.M. peak hours.



NOT TO SCALE

Legend

-  Study Roadway
-  Study Intersection
- XX A.M. School Peak Hour Traffic
- (XX) P.M. School Peak Hour Traffic



FUTURE BACKGROUND TRAFFIC

Future background traffic conditions are defined as expected traffic conditions on the roadway network in the year 2024 without the completion of the proposed expansion and renovation. Future background traffic volumes used in the analysis are the sum of the existing traffic and additional traffic generated by growth in the study area. Refer to Figure 3 for the future background 2024 peak hour traffic volumes.

BACKGROUND AREA GROWTH

Traffic growth on the transportation network was determined based upon (a) historical growth trends at nearby FDOT traffic count stations and (b) traffic volume comparisons from the year 2015 and 2045 Florida Standard Urban Transportation Model Structure (FSUTMS) - Southeast Florida Regional Planning Model (SERPM).

FDOT count stations referenced in this analysis include:

- Count station 860085 located on SR 820/Pines Boulevard, east of SW 196th Avenue
- Count station 860207 located on SR 820/Pines Boulevard, east of SW 184th Avenue
- Count station 869486 located on SW 184th Avenue, south of SR 820/Pines Boulevard

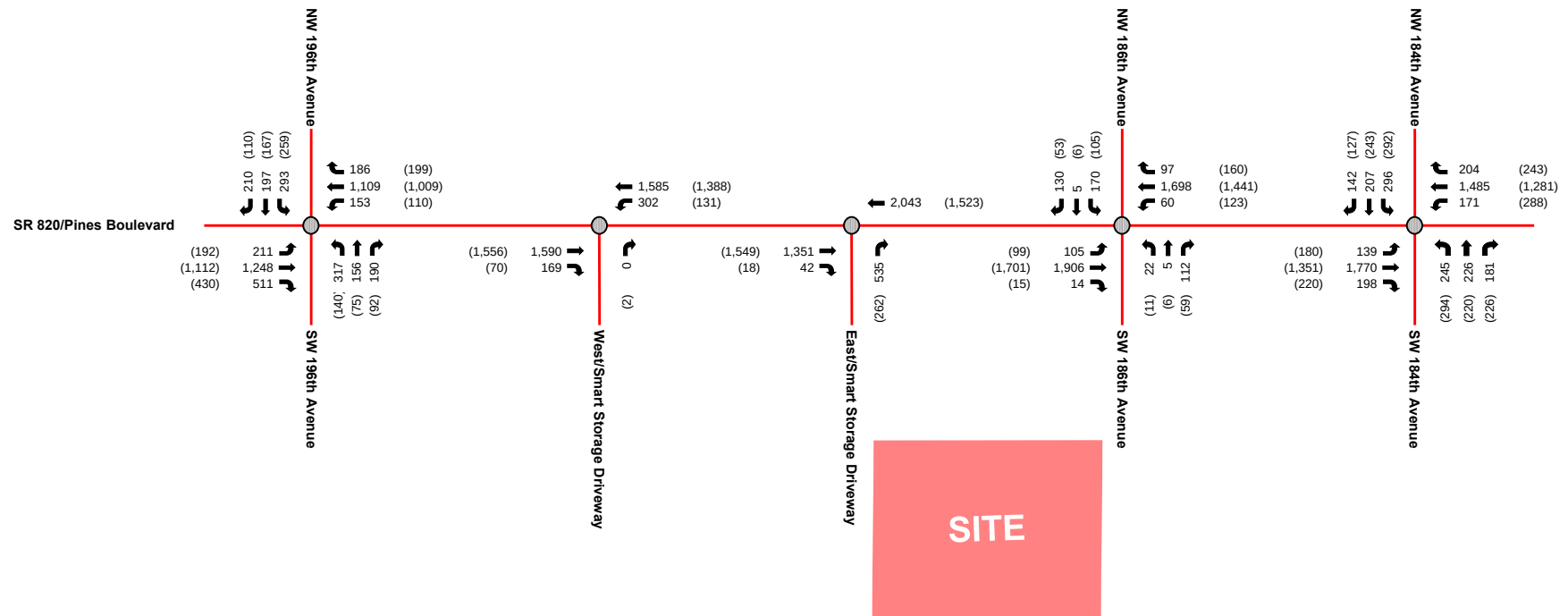
The historical growth rate analysis, based on the FDOT count station, examined linear, exponential, and decaying exponential growth rates for the most recent five (5) year and ten (10) year periods. The linear growth trend yielded a growth rate of 0.99 percent (0.99%) over the most recent five (5) year period and 0.88 percent (0.88%) over the most recent ten (10) year period. The exponential growth trend yielded a growth rate of 0.93 percent (0.93%) over the most recent five (5) year period and 0.80 percent (0.80%) over the most recent ten (10) year period. The decaying exponential growth trend yielded a growth rate of 0.86 percent (0.86%) over the most recent five (5) year period and 0.80 percent (0.80%) over the most recent ten (10) year period. Based on the volume information obtained from the years 2015 and 2045 FSUTMS SERPM, an annual growth rate of 0.51 percent (0.51%) in the vicinity of the school was calculated.

To provide a conservative analysis, the highest growth rate of 0.99 percent (0.99%) was applied annually to the existing traffic volumes to establish future (2024) background conditions. Detailed growth calculations are contained in Appendix D.



NOT TO SCALE

- Legend**
- Study Roadway
 - Study Intersection
 - XX A.M. School Peak Hour Traffic
 - (XX) P.M. School Peak Hour Traffic



PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the project and the distribution and assignment of that traffic over the study roadway network.

EXISTING AND PROPOSED ENROLLMENT

Currently, the school has a maximum enrollment of 1,340 enrolled students. The proposed expansion will increase the school's enrollment by 410 students for a total enrollment of 1,750 students.

PROJECT ACCESS

Access to the school drop-off/pick-up area is provided via one (1) right-in/right-out only driveway and one (1) directional median opening (right-in/right-out/left-in) driveway along SR 820/Pines Boulevard.

TRIP GENERATION

Trip generation calculations (trips per student) for the proposed school expansion were calculated based upon peak hour turning movement volumes collected at each site driveway and the current enrollment. Existing trip generation rates were developed for the school A.M. and school P.M. peak periods and are presented in Table 1.

Table 1: Existing Trip Generation				
School A.M. Peak Hour (School P.M. Peak Hour)				
Current Enrollment	Entering Trips/Directional Distribution	Exiting Trips/Directional Distribution	Total Peak Hour Trips	Resulting Trip Generation Rate (trips/student)
1,340 students	696/53% (461/53%)	609/47% (416/47%)	1,305 (877) ⁽¹⁾	0.97 (0.65)

Note (1): Peak volume corresponds to the two (2) hours of data collected to account for latent demand associated with on-site queuing during the school P.M. peak hour.

The trip generation rates determined from the field data were compared to the rates/equations contained within the Institute of Transportation Engineers' (ITE's) *Trip Generation Manual*, 11th Edition. Note that ITE does not provide a land use code (LUC) for charter schools serving grades K through 8. Therefore, the determined rates were compared to the three (3) most similar ITE available LUCs. Based on the comparison, it was determined that the calculated rates are comparable to the rates/equations provided by ITE for similar land uses. Therefore, field-

calculated field generation rates were utilized for the analysis. A summary of the comparison is included Appendix E for reference.

PROPOSED PROJECT TRIPS

The net new project trips represent the additional vehicles on the roadway network. As shown in Table 2, the proposed enrollment increase is expected to generate 398 new school weekday A.M. peak hour trips and 267 new school weekday P.M. peak hour trips.

Table 2: Proposed Trip Generation				
<i>School A.M. Peak Hour (School P.M. Peak Hour)</i>				
Additional Enrollment	Applied Rate	Total Net New Peak Hour Trips	Entering Trips	Exiting Trips
410 students	0.97 (0.65)	398 (267)	211 (142)	187 (125)

TRIP DISTRIBUTION AND ASSIGNMENT

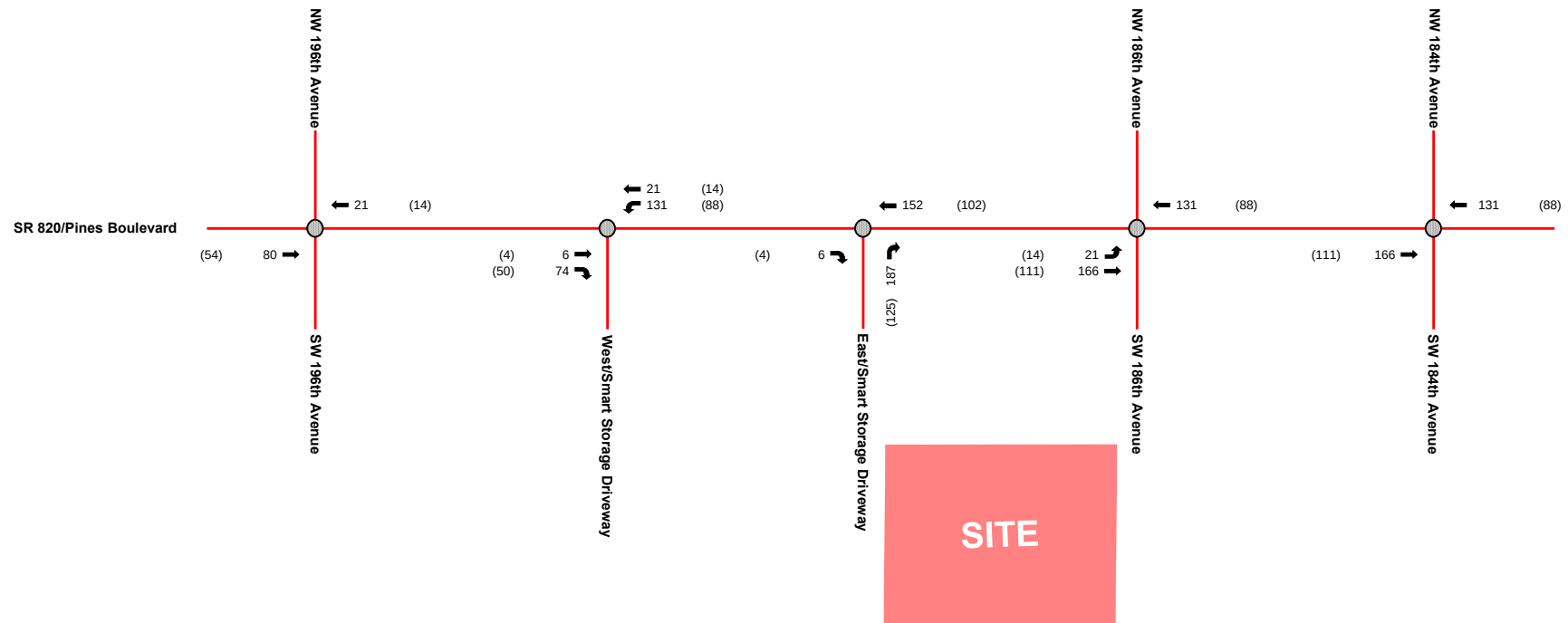
The likely distribution of project traffic was forecast for the trips expected to be generated by the school after the proposed expansion and renovation. Trip distribution was determined from actual turning movement counts collected at study area intersections/site driveways. Figure 4 presents the peak hour net new trip distribution and Figure 5 presents the peak hour net new trip assignment.



NOT TO SCALE

Legend

-  Study Roadway
-  Study Intersection
- XX A.M. School Peak Hour Trip Assignment
- (XX) P.M. School Peak Hour Trip Assignment



FUTURE TOTAL TRAFFIC

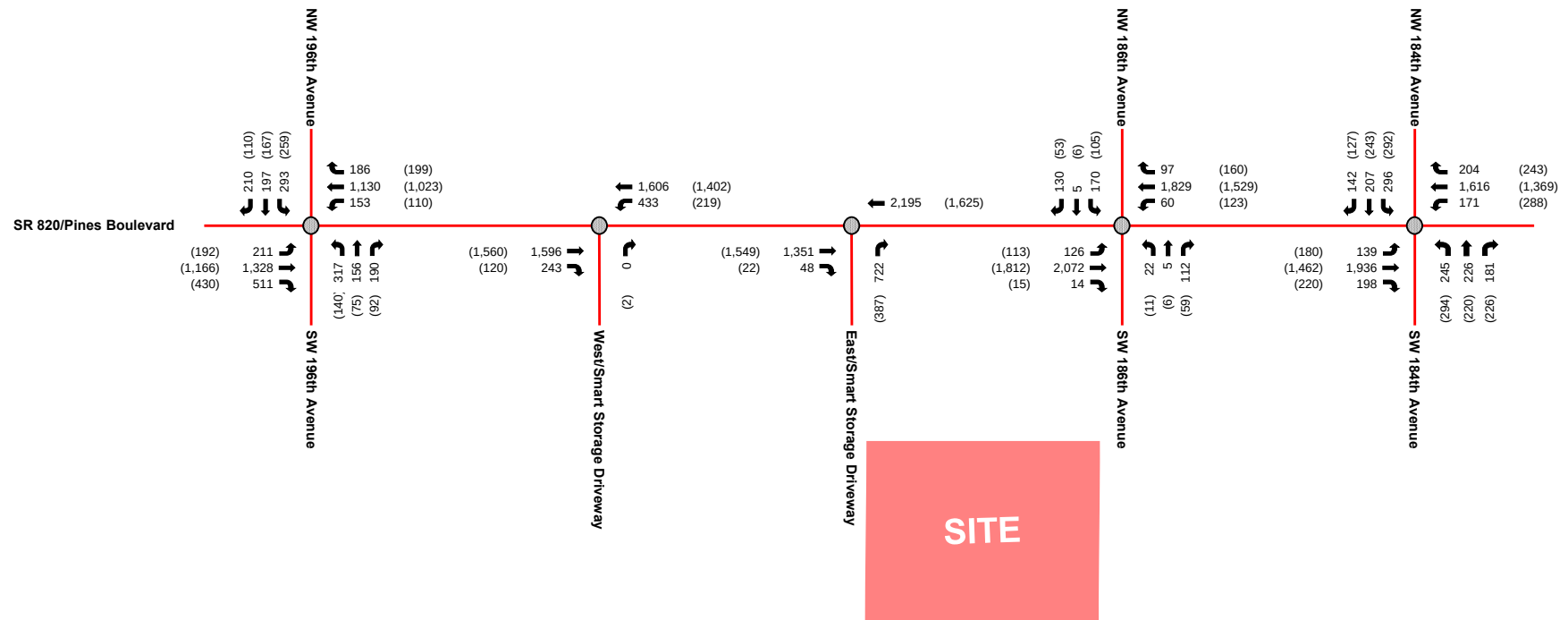
Future total traffic conditions are defined as the expected traffic conditions in the year 2024 after the opening of the project. Total traffic volumes considered in the analysis for this project are the sum of the background traffic volumes and the expected project traffic volumes. Figure 6 presents the future total turning movement volumes at the study intersections during the weekday school A.M. and school P.M. peak hours. Volume development worksheets for the study intersections are included in Appendix F.



NOT TO SCALE

Legend

-  Study Roadway
-  Study Intersection
- XX A.M. School Peak Hour Traffic
- (XX) P.M. School Peak Hour Traffic



INTERSECTION CAPACITY ANALYSIS

The study area intersection operating conditions were analyzed for three (3) scenarios (existing conditions, future background conditions, and future total conditions) using Trafficware's *SYNCHRO* software, which applies methodologies outlined in the Transportation Research Board's (TRB's) *Highway Capacity Manual* (HCM) 6th Edition. Synchro worksheets for the study intersections are included in Appendix G.

A summary of the intersection analyses for the school A.M. and school P.M. peak hours is presented in Tables 3 and 4, respectively. As the tables indicate, all approaches at the study intersections are expected to operate at level of service (LOS) D or better during the A.M. and school P.M. peak hours under all analysis scenarios, with the exception of the northbound approach of the intersection of SR 820/Pines Boulevard and the East Driveway, which is expected to operate at LOS E during the school A.M. peak period. Note that these results are common during peak periods where a high traffic volume, free-flowing major street intersects with a stop-controlled minor street.

Table 3: School A.M. Peak Hour Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS/Delay	Approach LOS/Delay			
			EB	WB	NB	SB
Existing Conditions (Future Background Conditions) [Future Total Conditions]						
SR 820/Pines Boulevard at SW 184 th Avenue	Signalized	D/38.3 sec (D/39.0 sec) [D 39.0 sec]	C (C) [C]	C (C) [C]	E (E) [E]	F (F) [F]
SR 820/Pines Boulevard at SW 186 th Avenue	Signalized	B/19.5 sec (C/20.2 sec) [C/21.8 sec]	B (B) [B]	B (B) [B]	E (E) [E]	F (F) [F]
SR 820/Pines Boulevard at Site East Driveway	One-Way Stop Controlled	(1)	(2)	(2)	C (C) [E]	(3)
SR 820/Pines Boulevard at West/SmartStop Storage Driveway	One-Way Stop Controlled	(1)	(2)	(2)	A (A) [A]	(3)
SR 820/Pines Boulevard at SW 196 th Avenue	Signalized	D/45.0 sec (D/45.8 sec) [D 45.5 sec]	C (C) [C]	C (C) [C]	F (F) [F]	F (F) [F]

Notes: (1) Overall intersection LOS is not defined, as intersection operates under two-way stop-control conditions.
 (2) Approach operates under free-flow conditions. LOS is not defined.
 (3) Approach does not exist.

Table 4: School P.M. Peak Hour Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS/Delay	Approach LOS/Delay			
			EB	WB	NB	SB
Existing Conditions (Future Background Conditions) [Future Total Conditions]						
SR 820/Pines Boulevard at SW 184 th Avenue	Signalized	D/40.3 sec (D/40.9 sec) [D/40.7 sec]	C (C) [C]	C (C) [C]	E (E) [E]	E (E) [E]
SR 820/Pines Boulevard at SW 186 th Avenue	Signalized	A/6.9 sec (A/7.1 sec) [A/7.0 sec]	A (A) [A]	A (A) [A]	E (E) [E]	E (E) [E]
SR 820/Pines Boulevard at Site East Driveway	One-Way Stop Controlled	(1)	(2)	(2)	B (B) [B]	(3)
SR 820/Pines Boulevard at West/SmartStop Storage Driveway	One-Way Stop Controlled	(1)	(2)	(2)	A (A) [A]	(3)
SR 820/Pines Boulevard at SW 196 th Avenue	Signalized	C/29.9 sec (C/30.3 sec) [C/30.0 sec]	B (B) [B]	B (B) [B]	E (E) [E]	E (E) [E]

- Notes: (1) Overall intersection LOS is not defined, as intersection operates under two-way stop-control conditions.
 (2) Approach operates under free-flow conditions. LOS is not defined.
 (3) Approach does not exist.

ACCUMULATION ANALYSIS

Vehicle queuing data was collected at Franklin Academy – Pembroke Pines Campus (K-8) on Tuesday, April 12, 2022 during the school arrival period (6:45 A.M. to 8:45 A.M.) and school dismissal period (1:45 P.M. to 3:45 P.M.). The maximum queue observed during the school arrival period was of 67 vehicles, while the maximum queue observed during the school dismissal period was of 107 vehicles. Existing queues were observed to extent beyond the designated drop-off/pick-up area to the right-turn and left-turn lanes along SR 820/Pines Boulevard.

DATA COLLECTION

Vehicle accumulation data was collected every five (5) minutes on Tuesday, April 14, 2022 during the school arrival period (6:45 A.M. to 8:45 A.M.) and school dismissal period (1:45 P.M. to 3:45 P.M.). Data collection accounted for all traffic generated by the school. Vehicle accumulation data is included in Appendix H.

ACCUMULATION ANALYSIS

An onsite accumulation analysis was conducted to determine if the proposed queue storage within the site is sufficient to meet the projected demand with the school expansion. Expected accumulation for the school after the proposed expansion and renovation was determined using the collected accumulation data. The highest vehicle accumulation was 67 vehicles at 7:25 A.M. during the school arrival period and 107 vehicles at 2:10 P.M. during the school dismissal period. Note that the maximum queue observed during the dismissal period corresponds to the total number of vehicles queued on-site and along the existing exclusive right-turn and left-turn lanes along SR 820/Pines Boulevard.

Table 5 provides a summary of the school's existing queue accumulation and expected queue accumulation after the proposed expansion. As shown in Table 5, the maximum expected accumulation is of 140 vehicles. Therefore, vehicle demand is expected to be accommodated within school site, as the proposed school plan has a stacking capacity of 176 vehicles, or 36 vehicles in excess. Please refer to the conceptual site plan in Appendix A for details on the proposed queueing capacity and route.

Table 5: Future Accumulation Summary

Group	Existing Enrollment	Maximum Existing Queue (veh)	Resulting Rate (veh/student)	Proposed Enrollment	Maximum Expected Future Queue (veh)	Available Queuing Capacity	Excess Queuing Capacity
Arrival	1,340 students	67	0.05	1,750 students	89	176 vehicles	87
Dismissal		107	0.08		140		36

CONCLUSION

Franklin Academy – Pembroke Pines Campus (K-8), located at 18800 Pines Boulevard in Pembroke Pines, Florida, is proposed to be expanded. The site is proposed to be expanded to the east, constructing a new educational building and parking areas. Additionally, modifications to site circulation/vehicle stacking are also proposed to increase the stacking capacity of the site. Currently, the school has a maximum enrollment of 1,340 students. The proposed enrollment expansion will increase the school's enrollment by 410 students for a total enrollment of 1,750 students. The expansion and renovation are expected to be completed by year 2024.

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Vehicle queuing was evaluated based on accumulation data collected at the existing school during the school arrival and dismissal periods. The results of the accumulation analysis show that the proposed school plan will accommodate 20 percent (20%) more than the projected vehicle demand during the arrival and dismissal groups within school site.

Appendix A

Site Plan



site plan

CONSILIUM
design build
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Legend

- 82 Vehicles
- 69 Vehicles
- 25 Vehicles

Total: 176 Vehicles

Proposed Queuing Capacity



site plan

CONSILIUM
design build
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scale NTS

Appendix B

Methodology Correspondence

From: McWilliams, John
Sent: Saturday, April 16, 2022 4:24 PM
To: England, John <jengland@ppines.com>
Cc: Yaciuk, Joseph <jyaciuk@ppines.com>; Echeverry, Maria <mecheverry@ppines.com>; Myra Patino <mpatino@marlinengineering.com>; smire@consiliumatlantic.com
Subject: RE: Franklin Academy Classrooms & Gym Expansion (SP 2022-02 & PRJ 2022-04)

John:

Good afternoon. Thank you for providing these formal comments. Attached is the revised methodology for final review/approval. One comment refers to committed development in the area (approved by not yet constructed development). I read through my notes from the call and I didn't see that any committed developments were identified in the vicinity of the site. Can you confirm if there are any? If so, can you provide the traffic studies performed for those developments so we can incorporate it in the report?

Regards,

John

John J. McWilliams, P.E.

Kimley-Horn | 8201 Peters Road, Suite 2200, Plantation, FL 33324
Direct: 954-535-5106 | Mobile: 954-873-9407 | www.kimley-horn.com

From: England, John <jengland@ppines.com>
Sent: Monday, April 11, 2022 9:20 AM
To: McWilliams, John <John.McWilliams@kimley-horn.com>
Cc: Yaciuk, Joseph <jyaciuk@ppines.com>; Echeverry, Maria <mecheverry@ppines.com>
Subject: Franklin Academy Classrooms & Gym Expansion (SP 2022-02 & PRJ 2022-04)

Good morning John,

Attached are the formalized Traffic Comments for the Traffic Study Methodology as per our recent Team Meeting.

Regards,

Regards,

John L. England, P.E.
Assistant City Engineer
Environmental Services/Engineering Division
City of Pembroke Pines
8300 S. Palm Drive
Pembroke Pines, FL 33025
Direct Line: (954) 518-9046
Fax: (954) 518-8905
Cell: (954) 444-2499
Email: jengland@ppines.com

The City of Pembroke Pines is a public entity subject to Chapter 119 of the Florida statutes concerning public records. Email messages are covered under Chapter 119 and are thus subject to public records disclosure. All email messages sent and received are captured by our server and retained as public records.

MEMORANDUM

To: Mr. Joseph Yaciuk, AICP
Planning Administrator
City of Pembroke Pines

From: John J. McWilliams, P.E.



Date: March 3, 2022
Revised April 16, 2022

Subject: Franklin Academy – Pembroke Pines Campus (K-8) Expansion
18800 Pines Boulevard
Traffic Study Methodology

The purpose of this memorandum is to summarize the traffic study methodology for the proposed expansion of the Franklin Academy – Pembroke Pines Campus (K-8) located at 18800 Pines Boulevard in Pembroke Pines, Florida. It is proposed to expand the site to the east, constructing a new educational building and parking areas. The existing maximum enrollment of 1,340 students will be increased to 1,750 students (410 student increase) as part of this expansion. Additionally, improvements/modifications to site circulation/vehicle stacking are also proposed. Refer to the project location map and conceptual site plan included in Attachment A. The following sections summarize our proposed traffic study methodology.

CURRENT & PROPOSED SCHOOL OPERATIONS

The existing facility currently operates with stagger shifts for elementary and middle school students. Refer to the table below for current drop-off and pick-up times for each student group.

Current Campus Schedule		
Grade Levels	Drop-Off Times	Pick-Up Times
K through 5	7:00 AM – 7:30 AM	2:00 PM – 2:45 PM
6 through 8	8:00 AM – 8:30 AM	3:10 PM – 3:45 PM

No changes to the current schedule are proposed as part of this expansion. Student drop-off/pick-up as well as bus operations currently occur in the west lot to the rear of the site. Vehicles queue within the west parking lot aisles and extend to the western site entrance. Further details on this operation as well as the check-in procedures are included in Attachment B. The site expansion proposes to modify this operation and significantly increase the queue storage within the site. It is proposed that vehicles will queue in the expanded east lot and perimeter road towards the west driveway. Refer to the site plan in Attachment A for further details.

STUDY AREA

The following intersections including project driveways will be examined as part of the study area:

1. SR 820/Pines Boulevard at SW 184th Avenue
2. SR 820/Pines Boulevard at SW 186th Avenue
3. SR 820/Pines Boulevard at Site East Driveway
4. SR 820/Pines Boulevard at Site West/SmartStop Storage Driveway
5. SR 820/Pines Boulevard at SW 196th Avenue

DATA COLLECTION

Intersection turning movement counts will be collected at all identified study intersections on a typical school day (Tuesday, Wednesday, or Thursday) coinciding with the drop-off (6:45 AM – 8:45 AM) and pick-up (1:45 PM – 3:45 PM) periods. All traffic counts will be adjusted to peak season conditions using the appropriate Florida Department of Transportation (FDOT) peak season category factors. Turning movement counts will be collected in 15-minute intervals during the two (2) peak periods. Turning movement counts will also include pedestrian and bicyclists. Traffic signal timing information will be obtained from Broward County Traffic Engineering Division. All traffic data collected will be provided in the Appendix of the traffic impact study.

Additionally, vehicle accumulation (drop-off/pick-up queue length) data will be collected/recorded in five (5) minute intervals during the same peak periods as the turning movement counts.

TRIP GENERATION

Trip generation calculations (trips per student in each student group) for the proposed school expansion will be calculated based upon peak hour turning movement volumes collected at each site driveway and the in-person attendance on that specific day of data collection for each student group. The trip generation estimates from the field data will be compared to the Institute of Transportation Engineers (ITE) *Trip Generation*, 11th Edition rates/equations and summarized in the report.

TRIP DISTRIBUTION

Trip distribution will be determined from actual turning movement counts collected at study area intersections/site driveways.

BACKGROUND GROWTH RATE/MAJOR COMMITTED DEVELOPMENT

A background growth rate will be calculated based on historic growth trends at nearby FDOT traffic count stations. Additionally, growth rates based on the SERPM projected 2015 and 2045 model network volumes will be examined. The average of the two (2) growth rates will be used in the analysis. The City will identify any committed developments in the vicinity of the study area and will be included as part of future background conditions. A separate graphic showing the committed development volume will be provided, if applicable.

CAPACITY ANALYSIS

Capacity analyses will be conducted for the school A.M. and school P.M. peak hours at the study intersections. Intersection analyses will be performed using Trafficware's *SYNCHRO 11* traffic engineering analysis software, which applies the Transportation Research Board's (TRB's) *Highway Capacity Manual* (HCM) 2000 and 6th Edition methodologies. Capacity analyses will be conducted for

three (3) scenarios: existing, build-out year without expansion, and build-out year with expansion. The anticipated build-out year will be specified in the analysis.

The following figures will be included for the study intersections:

- Existing conditions
- Committed development traffic conditions (if applicable)
- Future background traffic conditions (with growth rate and committed development traffic)
- Trip distribution
- Trip assignment
- Future total traffic conditions (with expansion)

VEHICLE ACCUMULATION ANALYSIS

An onsite accumulation analysis will be conducted to determine if the proposed queue storage within the site is sufficient to meet the projected demand with the school expansion. Queue rates per student in each student group will be derived from the collected queue data. The queue analysis will examine the existing queue demand plus the expected queue demand a result of the expansion for each school drop-off and pick-up shift. The analysis will be summarized in tabular and graphical form on the proposed conceptual site plan in the report.

DOCUMENTATION

The results of the traffic analysis will be summarized in a report. The report will include supporting documents including data collection reports, signal timings, lane geometry, and software output sheets. The report will also include text and graphics necessary to summarize the assumptions and analysis.

K:\FTL_TPTO\144750006 - FA Pembroke Pines Exp\Correspondence\04 16 22 Franklin Academy Traffic Study Methodology Memo.docx

Attachment A

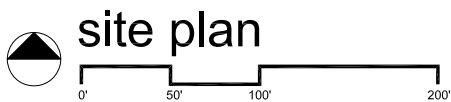
Project Location Map and Conceptual Site Plan





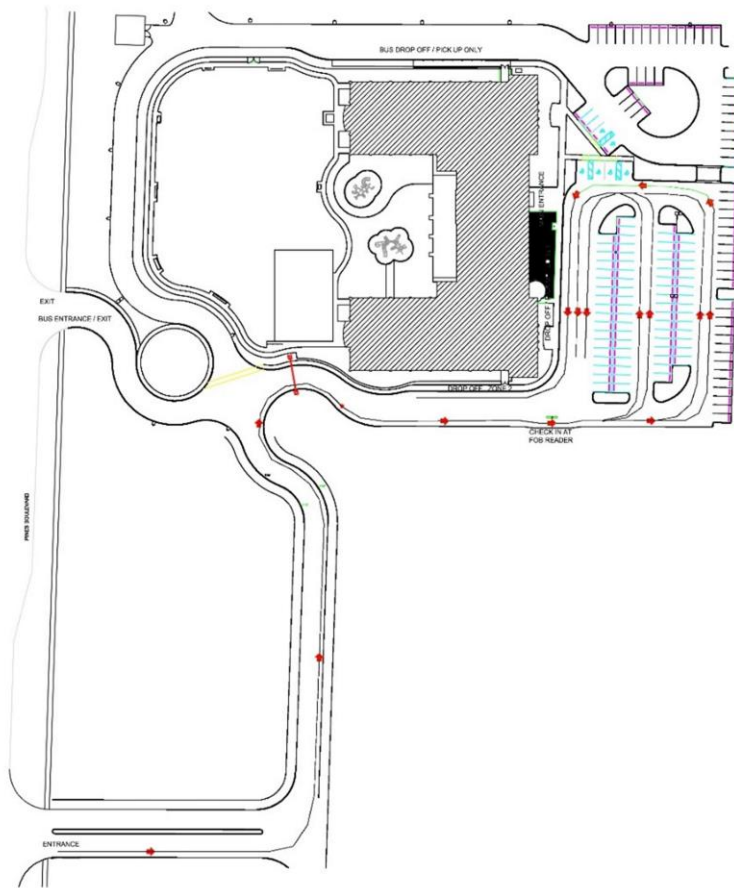
EXISTING PARCEL

ADDED PARCEL



Attachment B

Existing School Drop-Off/Pick-Up Procedures and Operations



Drop-off Times:

7:00 AM - 7:30 AM - K through Grade 5; Do Not Arrive Early
8:00 AM - 8:30 AM - Grade 6 through 8; Do Not Arrive Early

Pick-up Times:

2:00 PM - 2:45 PM - K through Grade 5; Do Not Arrive Early
3:10 PM - 3:45 PM - Grade 6 through 8; Do Not Arrive Early

The campus is **locked down at 1:45 PM**; no early dismissals after this time. No child(ren) will be allowed to walk or ride their bicycle home without a completed Walker / Biker Registration Form on file.

During pick-up and drop-off:

- 1) Enter the campus from the Western entrance and proceed around the access road and underneath the Franklin Academy arch to enter the queue lanes; do not enter the bus loop lane.
- 2) Do not park your vehicle and walk in; do not leave your vehicle idling or parked curbside; do not park offsite or in any "No Stopping" or "No Parking" Zones.
- 3) The dashboard placard (provided to you) with your child's name must be displayed on the passenger side dashboard the entire time your vehicle is on campus.
- 4) Do not use your cellphone while in the car lane; please look for and follow staff's direction at all times.
- 5) Upon reaching the pick-up / drop-off curb, pull all the way forward to allow additional vehicles to queue behind you; your child(ren) should be looking for you and follow you to your forward stopping point.
- 6) Once child(ren) is/are loaded, carefully pull into the by-pass lane to exit.

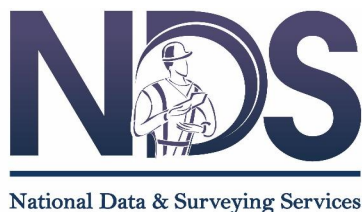


Appendix C

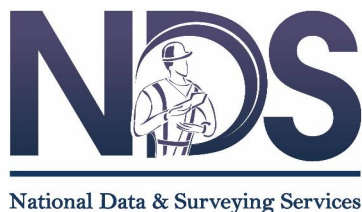
Traffic Data

Turning Movement Counts

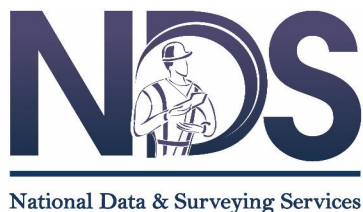
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DATE: Tue, Apr 12, 2022

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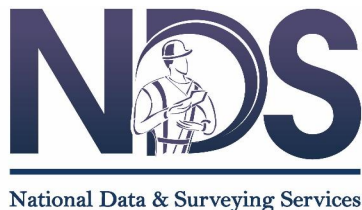
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DATE: Tue, Apr 12, 2022

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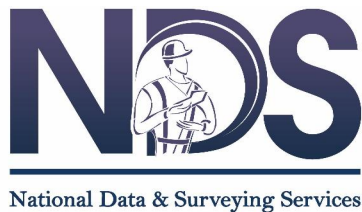
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DATE: Tue, Apr 12, 2022

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PROJECT ID: 22-140163-005
DATE: Tue, Apr 12, 2022

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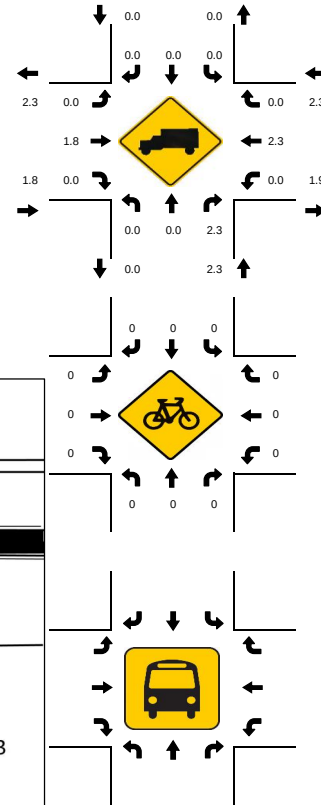
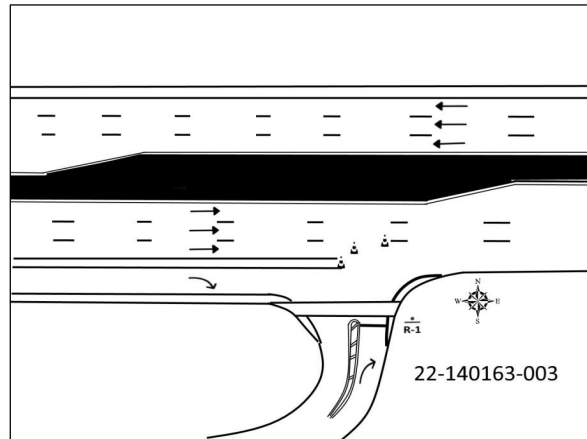
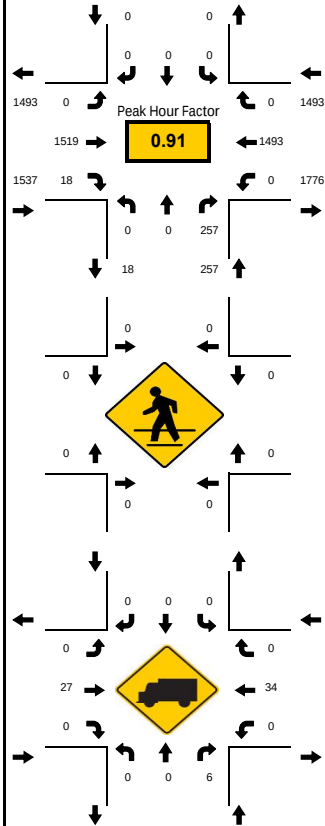
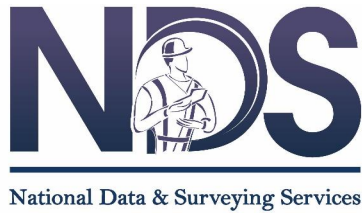
PROJECT ID: 22-140163-003
DATE: Tue, Apr 12, 2022

[illegible]

LOCATION: Smart Stop Self Storage East Dwy & SR 820/Pines Blvd
CITY/STATE: Pembroke Pines, FL

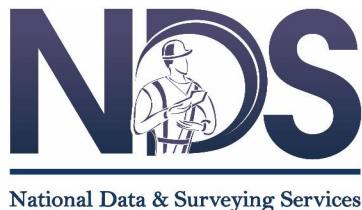
PROJECT ID: 22-140163-003
DATE: Tue, Apr 12, 2022

Peak-Hour: 02:45 PM - 03:45 PM
Peak 15-Minute: 03:15 PM - 03:30 PM



15-Min Count Period Beginning At	Smart Stop Self Storage East Dwy Northbound					Smart Stop Self Storage East Dwy Southbound					SR 820/Pines Blvd Eastbound					SR 820/Pines Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:45 PM	0	0	20	0		0	0	0	0		0	127	5	0		0	195	0	0		347	1934
02:00 PM	0	0	15	0		0	0	0	0		0	139	3	0		0	247	0	0		404	2398
02:15 PM	0	0	64	0		0	0	0	0		0	199	4	0		0	265	0	0		532	2837
02:30 PM	0	0	61	0		0	0	0	0		0	230	3	0		0	357	0	0		651	3204
02:45 PM	0	0	105	0		0	0	0	0		0	273	6	0		0	427	0	0		811	3287
03:00 PM	0	0	24	0		0	0	0	0		0	366	3	0		0	450	0	0		843	2476
03:15 PM	0	0	51	0		0	0	0	0		0	494	4	0		0	350	0	0		899	1633
03:30 PM	0	0	77	0		0	0	0	0		0	386	5	0		0	266	0	0		734	734
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	420	0		0	0	0	0		0	1976	24	0		0	1800	0	0		4220	
Heavy Trucks	0	0	24	0		0	0	0	0		0	36	0	0		0	40	0	0		100	
Pedestrians	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Stopped Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	

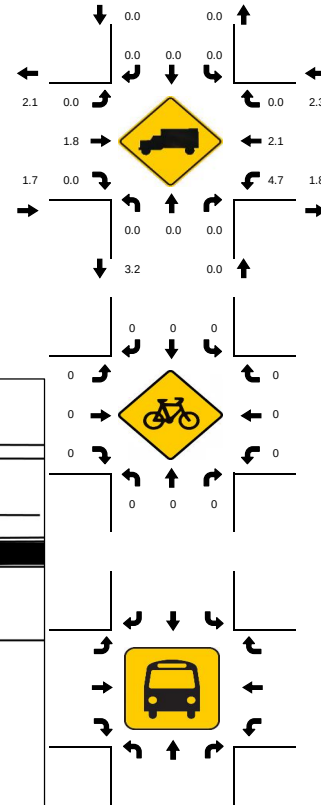
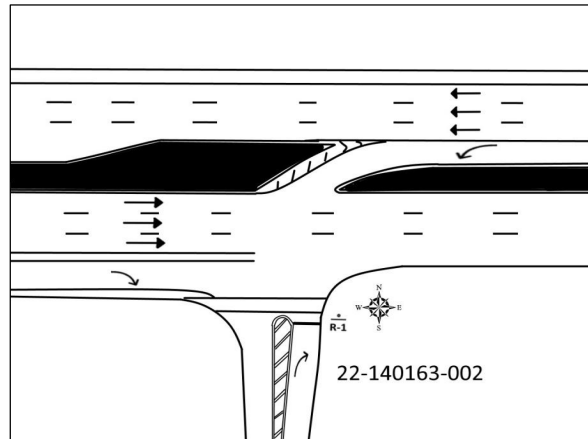
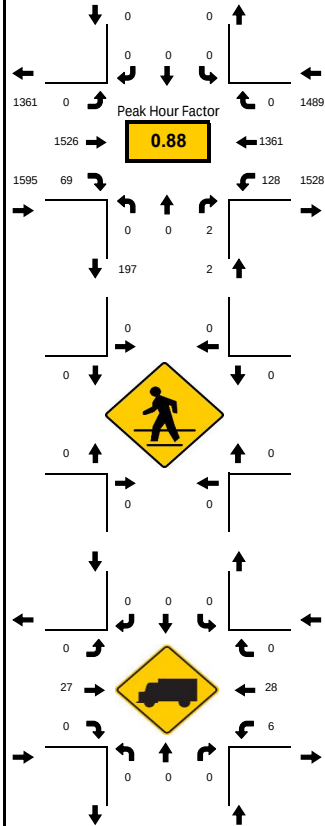
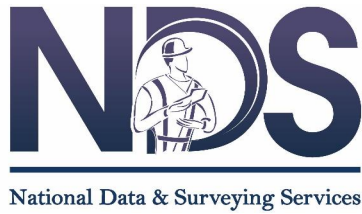
PROJECT ID: 22-140163-002
DATE: Tue, Apr 12, 2022

[illegible]

LOCATION: Smart Stop Self Storage West Dwy & SR 820/Pines Blvd
CITY/STATE: Pembroke Pines, FL

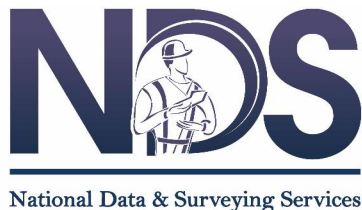
PROJECT ID: 22-140163-002
DATE: Tue, Apr 12, 2022

Peak-Hour: 02:45 PM - 03:45 PM
Peak 15-Minute: 03:15 PM - 03:30 PM

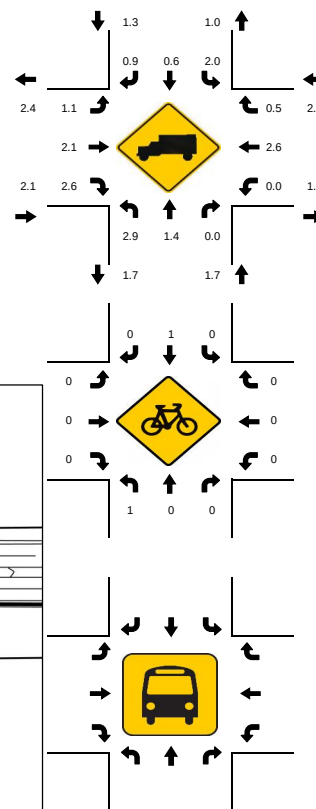
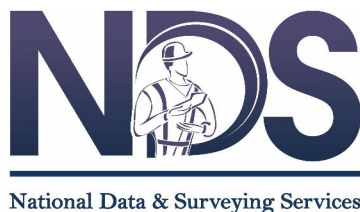
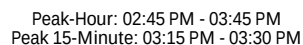


15-Min Count Period Beginning At	Smart Stop Self Storage West Dwy Northbound					Smart Stop Self Storage West Dwy Southbound					SR 820/Pines Blvd Eastbound					SR 820/Pines Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:45 PM	0	0	1	0		0	0	0	0		0	135	2	0		7	190	0	2		337	1877
02:00 PM	0	0	1	0		0	0	0	0		0	135	59	0		30	216	0	0		441	2225
02:15 PM	0	0	0	0		0	0	0	0		0	204	26	0		32	234	0	0		496	2656
02:30 PM	0	0	2	0		0	0	0	0		0	229	17	0		37	317	0	1		603	3038
02:45 PM	0	0	0	0		0	0	0	0		0	280	2	0		10	392	0	1		685	3086
03:00 PM	0	0	2	0		0	0	0	0		0	366	39	0		52	413	0	0		872	2401
03:15 PM	0	0	0	0		0	0	0	0		0	498	20	0		36	319	0	5		878	1529
03:30 PM	0	0	0	0		0	0	0	0		0	382	8	0		20	237	0	4		651	651
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	8	0		0	0	0	0		0	1992	156	0		208	1652	0	20		4036	
Heavy Trucks	0	0	0	0		0	0	0	0		0	32	0	0		12	32	0	0		76	
Pedestrians	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Stopped Buses	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	

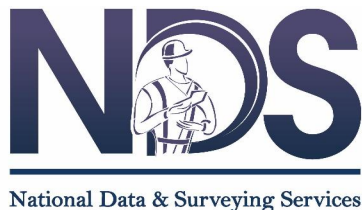
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DATE: Tue, Apr 12, 2022

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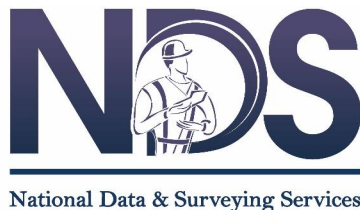
PROJECT ID: 22-140163-001
DATE: Tue, Apr 12, 2022

[illegible]

PROJECT ID: 22-140163-004
DATE: Tue, Apr 12, 2022

[illegible]

PROJECT ID: 22-140163-004
DATE: Tue, Apr 12, 2022

[illegible]

Signal Timings



BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3429	Initial Operation Date	8/30/95
Controller Type	2070 LN	System Number	3429
Modification Number	9	Modification Date	01/26/2021
Drawing/Project No		FPL Grid Number	86978737808
Intersection	PINES BOULEVARD (SR 820) and NW 184 AVENUE		
Municipality	PEMBROKE PINES		

Controller Phase	1	2	3	4	5	6	7	8
Face Number	1	2	3	4	5	6	7	8
Direction	EBL	WB	SBL	NB	WBL	EB	NBL	SB
Initial Green(MIN)	5	10	5	6	5	10	5	6
Vehicle Ext.(GAP)	1.5	1.0	1.5	2.0	1.5	1.0	1.5	2.0
Maximum Green I	18	50	18	35	18	50	18	35
Maximum Green II								
Yellow Clearance	5.0	5.0	4.5	4.5	5.0	5.0	4.5	4.5
All Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Phase Recall	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
Detector Delay				30-RT				30-RT
Walk		7		7		7		7
Pedestrian Clearance		29		33		29		35
Permissive	DUAL		DUAL		DUAL		DUAL	
Flash Operation	RED	RED	RED	RED	RED	RED	RED	RED

Attachment

NOTES:

1. DUAL ENTRY PHASES 4+8 (N/S).
2. MOD. 9 UPDATES WALK TIMES.

Submitted By _____

Approved By _____

Station : 3429 - Pines Blvd & NW/SW 184 Ave (Standard File)

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		5		7		5								
Ped Clearance		29		33		29		35								
Min Green	5	10	5	6	5	10	5	6								
Gap Ext	1.5	1	1.5	2	1.5	1	1.5	2								
Max1	18	50	18	35	18	50	18	35								
Max2																
Yellow Clr	5	5	4.5	4.5	5	5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

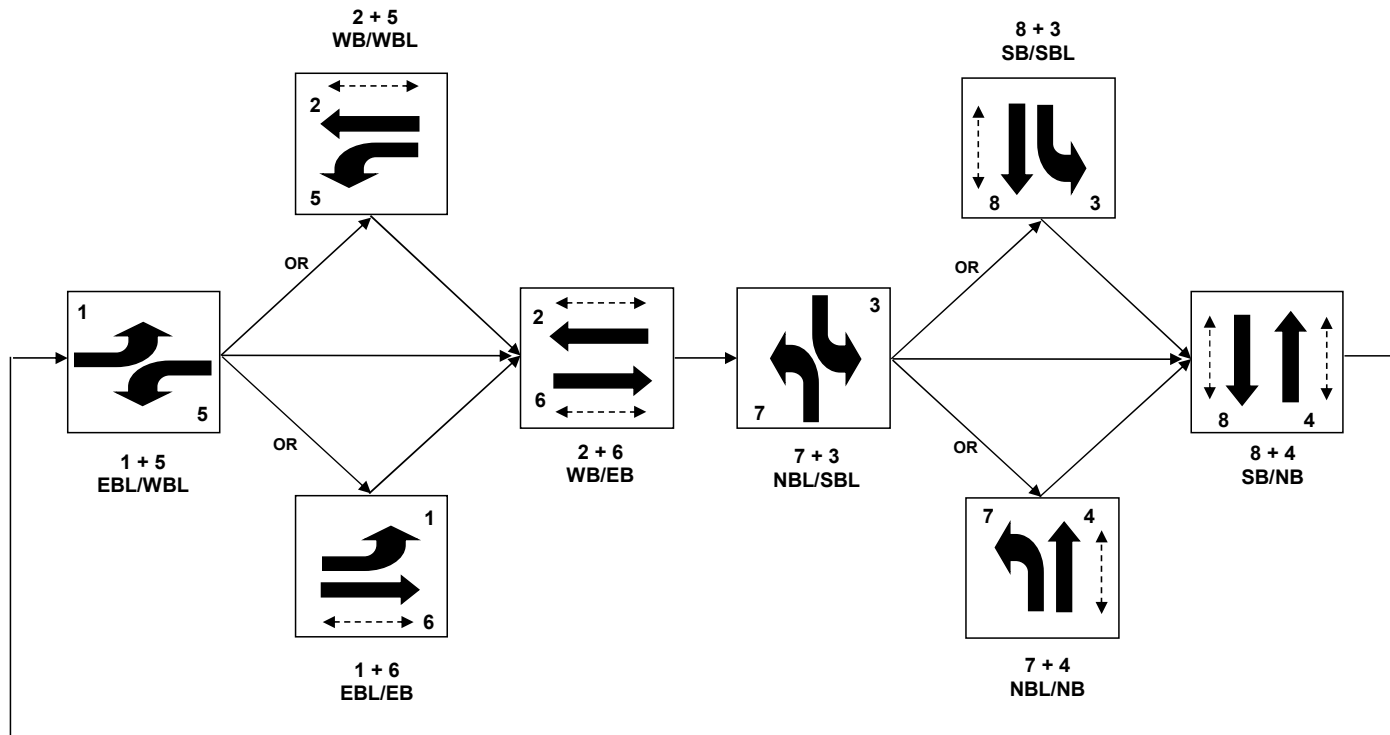
Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash					ON	ON
Override Higher Preempt					ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6	6	6		
Min Walk						
Ped Clear						
Track Green						
Min Dwell	8	8	8	8		
Max Presence	180	180	180	180		
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Sequence of Operation

Pines Boulevard (SR 820) and NW 184 Ave
Intersection Number 3429 (Pembroke Pines) Mod 8 and Higher



↑
↓
= Pedestrian Crossing Phase



BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3512	Initial Operation Date	01/30/02
Controller Type	2070 LN	System Number	3512
Modification Number	7	Modification Date	03/09/2021
Drawing/Project No		FPL Grid Number	85871487703
Intersection	PINES BOULEVARD (SR 820) and W 186 AVENUE		
Municipality	PEMBROKE PINES		

Controller Phase	1	2	3	4	5	6	7	8
Face Number	1	2		4	5	6		8
Direction	EBL	WB		NB	WBL	EB		SB
Initial Green(MIN)	4	12		6	4	12		6
Vehicle Ext.(GAP)	1.5	3.0		2.0	1.5	3.0		2.0
Maximum Green I	12	50		25	12	50		25
Maximum Green II								
Yellow Clearance	5.0	5.0		4.0	5.0	5.0		4.0
All Red Clearance	2.0	2.0		3.0	2.0	2.0		3.0
Phase Recall	OFF	MIN		OFF	OFF	MIN		OFF
Detector Delay				30-RT				30-RT
Walk		7		7		7		7
Pedestrian Clearance		25		38		23		42
Permissive	5-SECT				5-SECT			
Flash Operation		YELLOW		RED		YELLOW		RED

Attachment

NOTES:

1. ANTI-BACKDOWN EAST/WEST: PHASES 2+6 ON--->OMIT PHASES 1+5.
2. DUAL ENTRY NORTH/SOUTH.
3. MOD. 7 UPDATES WALK TIME.

Submitted By _____

Approved By _____

Station : 3512 - Pines Blvd & NW/SW 186 Ave (Standard File)

Phase	1 (EL)	2 (WT)	3	4 (NT)	5 (WL)	6 (ET)	7	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		25		38		23		42								
Min Green	4	12		6	4	12		6								
Gap Ext	1.5	3		2	1.5	3		2								
Max1	12	50		25	12	50		25								
Max2																
Yellow Clr	5	5	4	4	5	5	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2		3	2	2		3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON		ON	ON	ON		ON								
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash		ON	ON	ON	ON	ON
Override Higher Preempt		ON	ON	ON	ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration	6					
Min Green	6					
Min Walk	6					
Ped Clear						
Track Green						
Min Dwell	6					
Max Presence	180					
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	4					
Dwell Cyc Veh 2	8					
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Broward County

Timing Sheet

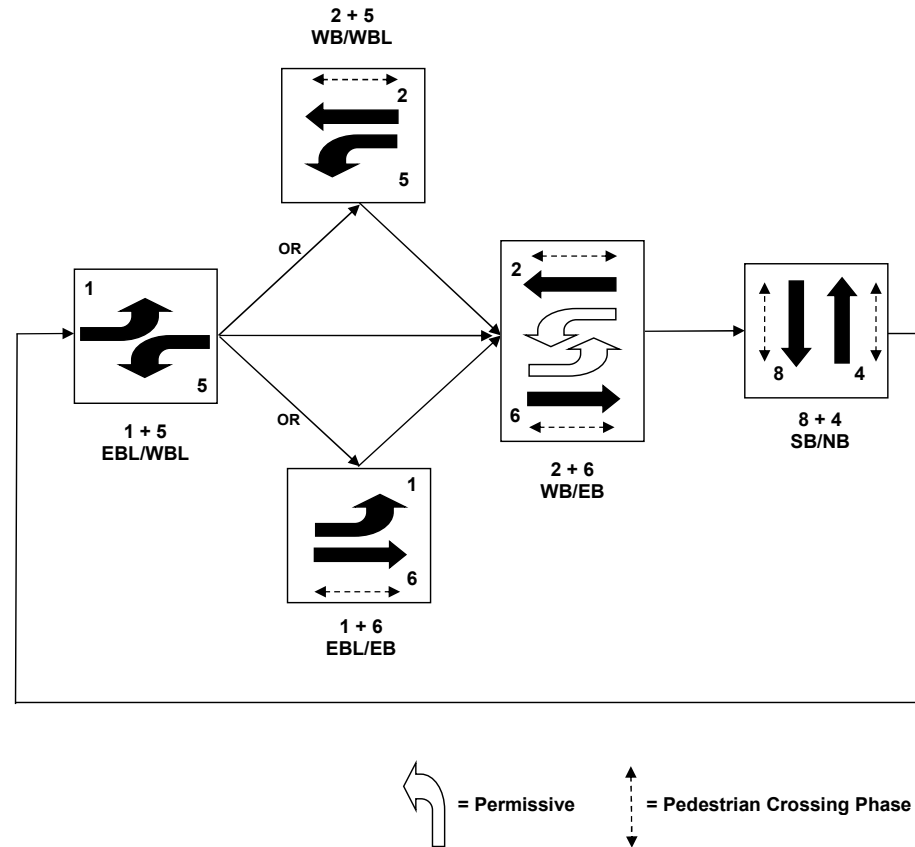
5/2/2022 11:53:01 AM

Station : 3512 - Pines Blvd & NW/SW 186 Ave (Standard File)

[illegible]

Sequence of Operation

Pines Boulevard (SR 820) and W 186 Avenue
Intersection Number 3512 (Pembroke Pines) Mod 6 and Higher





BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3430	Initial Operation Date	9/19/95
Controller Type	2070 LN	System Number	3430
Modification Number	9	Modification Date	01/26/2021
Drawing/Project No		FPL Grid Number	85871697007
Intersection	PINES BOULEVARD (SR 820) and NW 196 AVENUE		
Municipality	PEMBROKE PINES		

Controller Phase	1	2	3	4	5	6	7	8
Face Number	1	2	3	4	5	6	7	8
Direction	EBL	WB	SBL	NB	WBL	EB	NBL	SB
Initial Green(MIN)	5	10	5	6	5	10	5	6
Vehicle Ext.(GAP)	1.5	3.0	2.0	2.0	1.5	3.0	2.0	2.0
Maximum Green I	18	50	22	35	18	50	18	35
Maximum Green II								
Yellow Clearance	5.0	5.0	4.5	4.5	5.0	5.0	4.5	4.5
All Red Clearance	2.0	2.0	2.0	2.5	2.0	2.0	2.0	2.5
Phase Recall	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
Detector Delay				30-RT				30-RT
Walk		7		7		7		7
Pedestrian Clearance		30		36		30		36
Permissive	DUAL		DUAL		DUAL		DUAL	
Flash Operation	RED	RED	RED	RED	RED	RED	RED	RED

Attachment

NOTES:

1. DUAL ENTRY NORTH/SOUTH.
2. MOD. 9 UPDATED WALK TIMES.

Submitted By _____

Approved By _____

Station : 3430 - Pines Blvd & NW/SW 196 Ave (Standard File)

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		30		36		30		36								
Min Green	5	10	5	6	5	10	5	6								
Gap Ext	1.5	3	2	2	1.5	3	2	2								
Max1	18	50	22	35	18	50	18	35								
Max2																
Yellow Clr	5	5	4.5	4.5	5	5	4.5	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2.5	2	2	2	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce			10													
Cars Before Reduce																
Time To Reduce			5													
Reduce By																
Min Gap			2													
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call	ON		ON		ON		ON		ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service		ON														
Add Init Calc																

Preemption

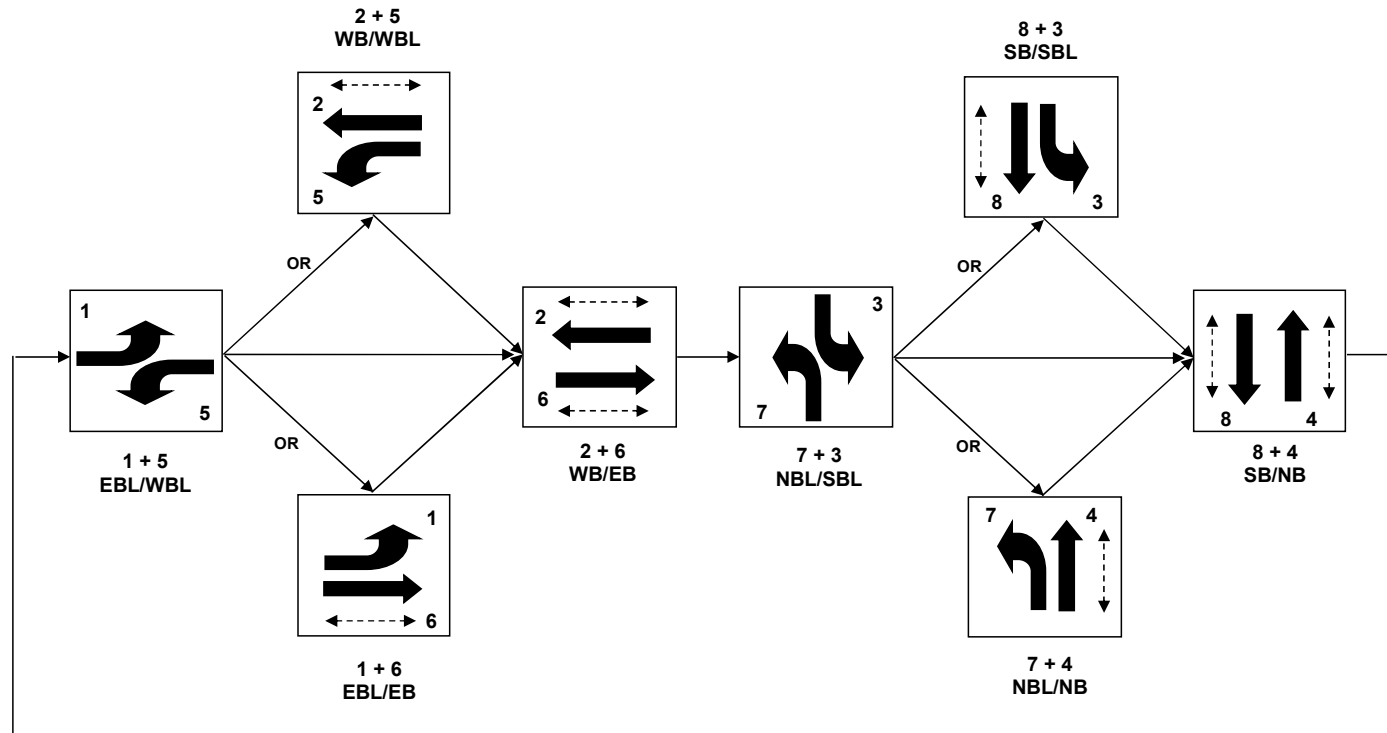
Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash			ON		ON	
Override Higher Preempt			ON		ON	
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6		6		6
Min Walk						
Ped Clear						
Track Green						
Min Dwell	15	15		15		15
Max Presence	180	180		180		180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	4	2		2		1
Dwell Cyc Veh 2		6		5		6
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Sequence of Operation

Pines Boulevard (SR 820) and NW 196 Avenue
Intersection Number 3430 (Pembroke Pines) Mod 8 and Higher



↑
↓
= Pedestrian Crossing Phase

Peak Season Conversion Factor

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 8630 WEST-W OF US441

WEEK	DATES	SF	MOCF: 0.97 PSCF
1	01/01/2019 - 01/05/2019	1.01	1.04
2	01/06/2019 - 01/12/2019	1.01	1.04
3	01/13/2019 - 01/19/2019	1.02	1.05
4	01/20/2019 - 01/26/2019	1.00	1.03
5	01/27/2019 - 02/02/2019	0.99	1.02
* 6	02/03/2019 - 02/09/2019	0.98	1.01
* 7	02/10/2019 - 02/16/2019	0.97	1.00
* 8	02/17/2019 - 02/23/2019	0.97	1.00
* 9	02/24/2019 - 03/02/2019	0.97	1.00
*10	03/03/2019 - 03/09/2019	0.97	1.00
*11	03/10/2019 - 03/16/2019	0.97	1.00
*12	03/17/2019 - 03/23/2019	0.97	1.00
*13	03/24/2019 - 03/30/2019	0.97	1.00
*14	03/31/2019 - 04/06/2019	0.97	1.00
*15	04/07/2019 - 04/13/2019	0.97	1.00
*16	04/14/2019 - 04/20/2019	0.97	1.00
*17	04/21/2019 - 04/27/2019	0.97	1.00
*18	04/28/2019 - 05/04/2019	0.98	1.01
19	05/05/2019 - 05/11/2019	0.99	1.02
20	05/12/2019 - 05/18/2019	1.00	1.03
21	05/19/2019 - 05/25/2019	1.01	1.04
22	05/26/2019 - 06/01/2019	1.02	1.05
23	06/02/2019 - 06/08/2019	1.02	1.05
24	06/09/2019 - 06/15/2019	1.03	1.06
25	06/16/2019 - 06/22/2019	1.04	1.07
26	06/23/2019 - 06/29/2019	1.04	1.07
27	06/30/2019 - 07/06/2019	1.05	1.08
28	07/07/2019 - 07/13/2019	1.05	1.08
29	07/14/2019 - 07/20/2019	1.06	1.09
30	07/21/2019 - 07/27/2019	1.05	1.08
31	07/28/2019 - 08/03/2019	1.04	1.07
32	08/04/2019 - 08/10/2019	1.02	1.05
33	08/11/2019 - 08/17/2019	1.01	1.04
34	08/18/2019 - 08/24/2019	1.01	1.04
35	08/25/2019 - 08/31/2019	1.02	1.05
36	09/01/2019 - 09/07/2019	1.02	1.05
37	09/08/2019 - 09/14/2019	1.03	1.06
38	09/15/2019 - 09/21/2019	1.03	1.06
39	09/22/2019 - 09/28/2019	1.02	1.05
40	09/29/2019 - 10/05/2019	1.01	1.04
41	10/06/2019 - 10/12/2019	1.00	1.03
42	10/13/2019 - 10/19/2019	0.98	1.01
43	10/20/2019 - 10/26/2019	0.99	1.02
44	10/27/2019 - 11/02/2019	0.99	1.02
45	11/03/2019 - 11/09/2019	0.99	1.02
46	11/10/2019 - 11/16/2019	0.99	1.02
47	11/17/2019 - 11/23/2019	1.00	1.03
48	11/24/2019 - 11/30/2019	1.00	1.03
49	12/01/2019 - 12/07/2019	1.00	1.03
50	12/08/2019 - 12/14/2019	1.00	1.03
51	12/15/2019 - 12/21/2019	1.01	1.04
52	12/22/2019 - 12/28/2019	1.01	1.04
53	12/29/2019 - 12/31/2019	1.02	1.05

* PEAK SEASON

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Appendix D

Background Area Growth Calculations

FDOT Historic Growth Trends

FDOT Growth Rate Summary

Station Number	Location	Historic Growth- Linear				Historic Growth- Exponential				Historic Growth- Decaying Exponential			
		5-year	R-squared	10-year	R-squared	5-year	R-squared	10-year	R-squared	5-year	R-squared	10-year	R-squared
860085	SR 820/Pines Boulevard, E of SW 196 Avenue	-0.19%	0.16%	0.96%	12.66%	-0.29%	0.38%	0.88%	11.58%	-0.19%	0.22%	0.85%	9.60%
860207	SR 820/Pines Boulevard, E of SW 184 Avenue	1.15%	27.74%	1.23%	54.45%	1.13%	26.94%	1.17%	53.96%	0.81%	15.07%	1.13%	43.96%
869486	SW 184 Avenue, S of Pines Boulevard	2.00%	96.98%	0.44%	22.02%	1.94%	96.64%	0.36%	21.62%	1.96%	99.00%	0.43%	18.45%
Total		0.99%	41.63%	0.88%	29.71%	0.93%	41.32%	0.80%	29.05%	0.86%	38.10%	0.80%	24.00%

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0085 - SR 820/PINES BLVD - 200' E OF SW 196 AVE

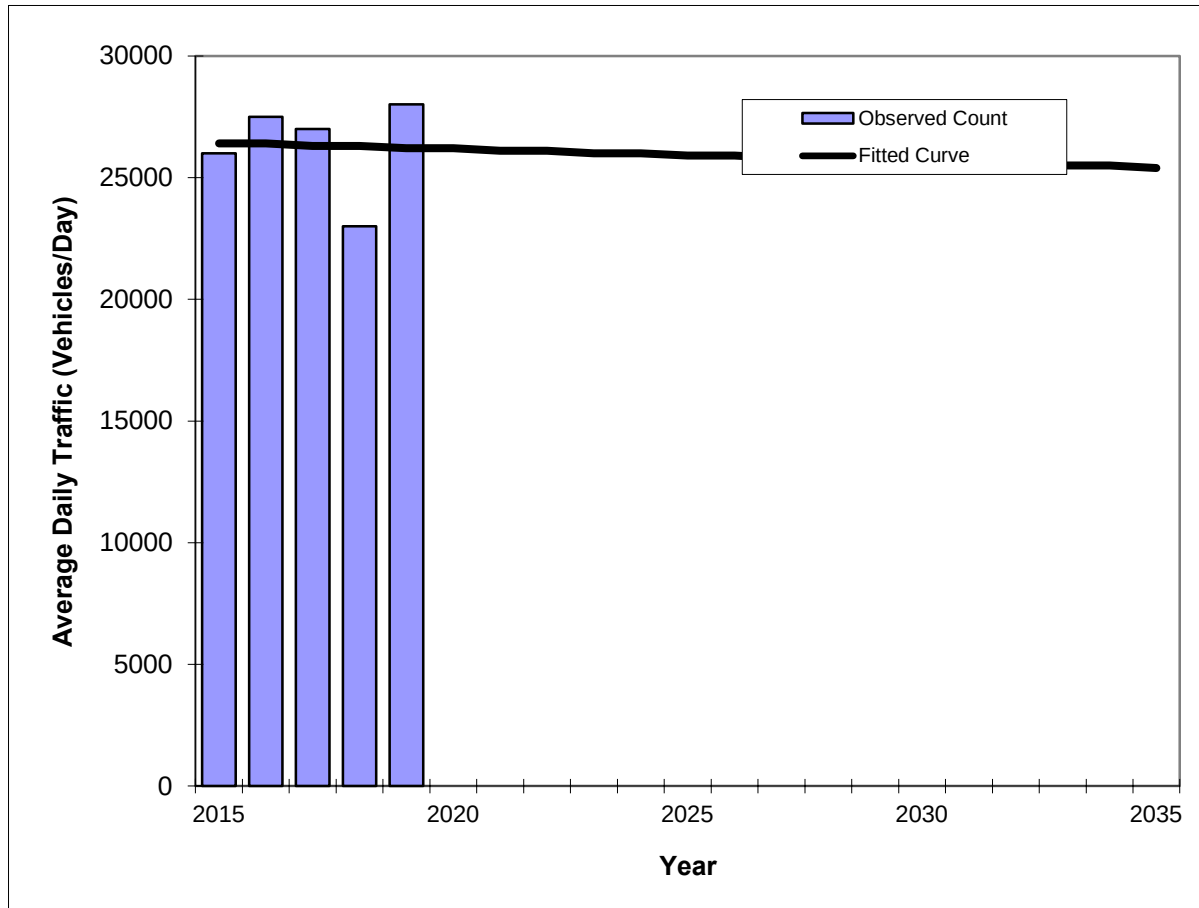
YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2020	26000 F	E	13000	W	13000	9.00	55.10	4.30
2019	28000 C	E	14000	W	14000	9.00	56.00	4.30
2018	23000 C	E	12000	W	11000	9.00	56.30	2.60
2017	27000 C	E	14000	W	13000	9.00	57.10	2.60
2016	27500 C	E	13500	W	14000	9.00	56.10	2.60
2015	26000 C	E	13000	W	13000	9.00	56.20	3.80
2014	24000 C	E	12500	W	11500	9.00	56.80	3.50
2013	22200 C	E	13000	W	9200	9.00	56.20	7.90
2012	27000 C	E	13500	W	13500	9.00	57.00	2.80
2011	24500 C	E	13500	W	11000	9.00	59.10	2.80
2010	24500 C	E	12500	W	12000	9.60	57.92	2.80
2009	26000 C	E	13000	W	13000	9.71	58.42	5.50
2008	26000 C	E	12000	W	14000	9.67	56.67	5.50
2007	25000 C	E	12500	W	12500	10.19	60.63	5.90
2006	23000 C	E	11500	W	11500	9.61	59.08	4.00
2005	23500 C	E	12000	W	11500	10.00	58.10	4.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends

SR 820/Pines Boulevard -- E of SW 196 Avenue

County:	Broward (86)
Station #:	86005
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	26000	26400
2016	27500	26400
2017	27000	26300
2018	23000	26300
2019	28000	26200

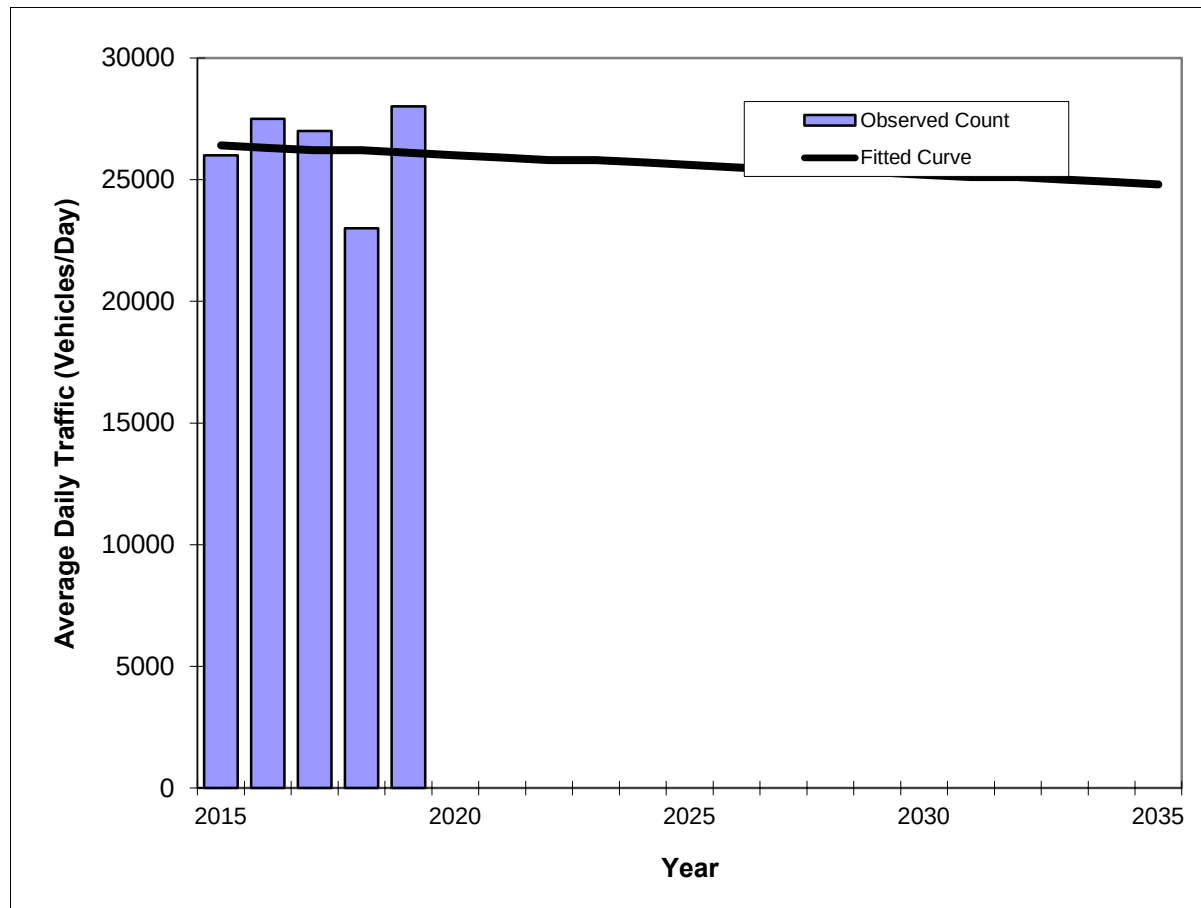
Trend R-squared:	0.16%
Trend Annual Historic Growth Rate:	-0.19%
Printed:	2-May-22
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 196 Avenue

County:	Broward (86)
Station #:	86005
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	26000	26400
2016	27500	26300
2017	27000	26200
2018	23000	26200
2019	28000	26100

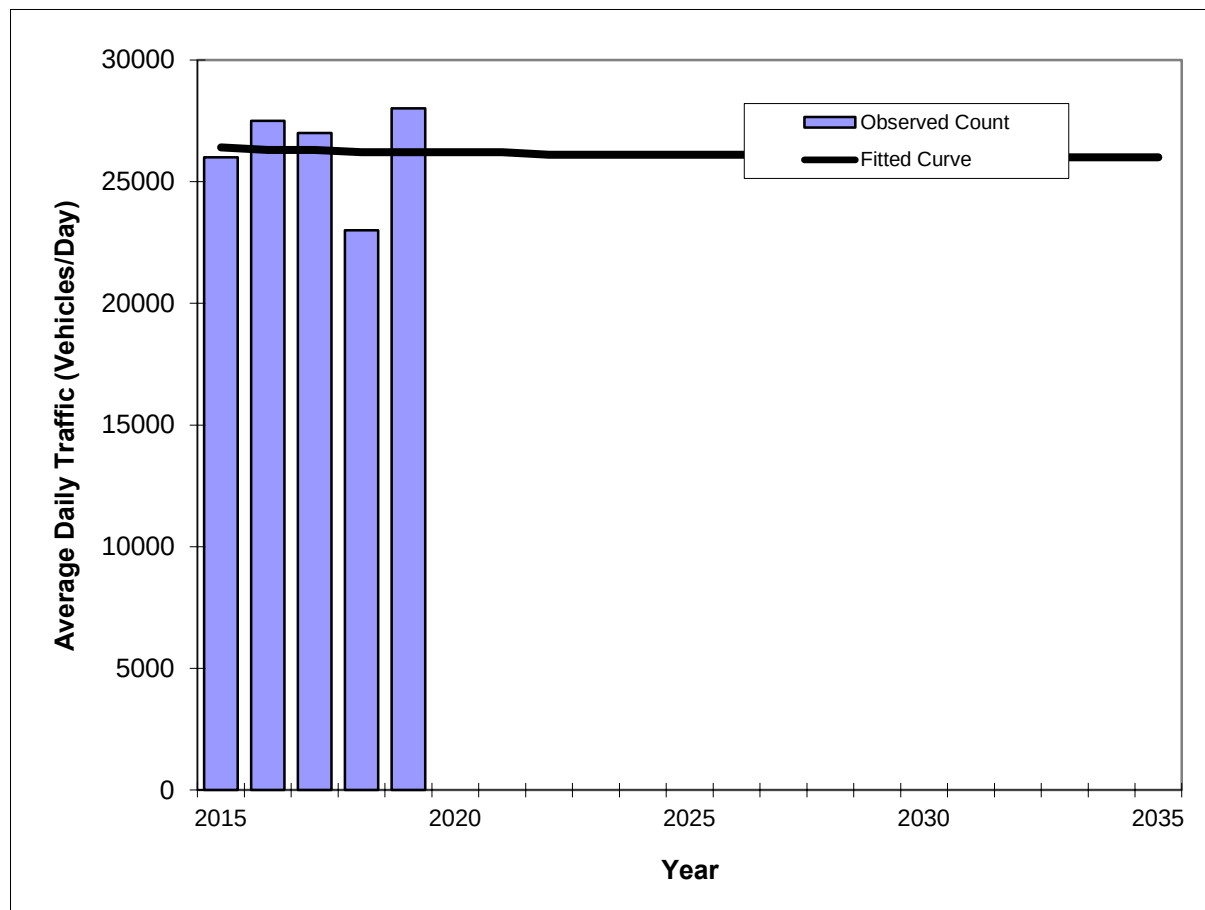
Trend R-squared:	0.38%
Compounded Annual Historic Growth Rate:	-0.29%
Printed:	2-May-22
Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 196 Avenue

County:	Broward (86)
Station #:	86005
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	26000	26400
2016	27500	26300
2017	27000	26300
2018	23000	26200
2019	28000	26200

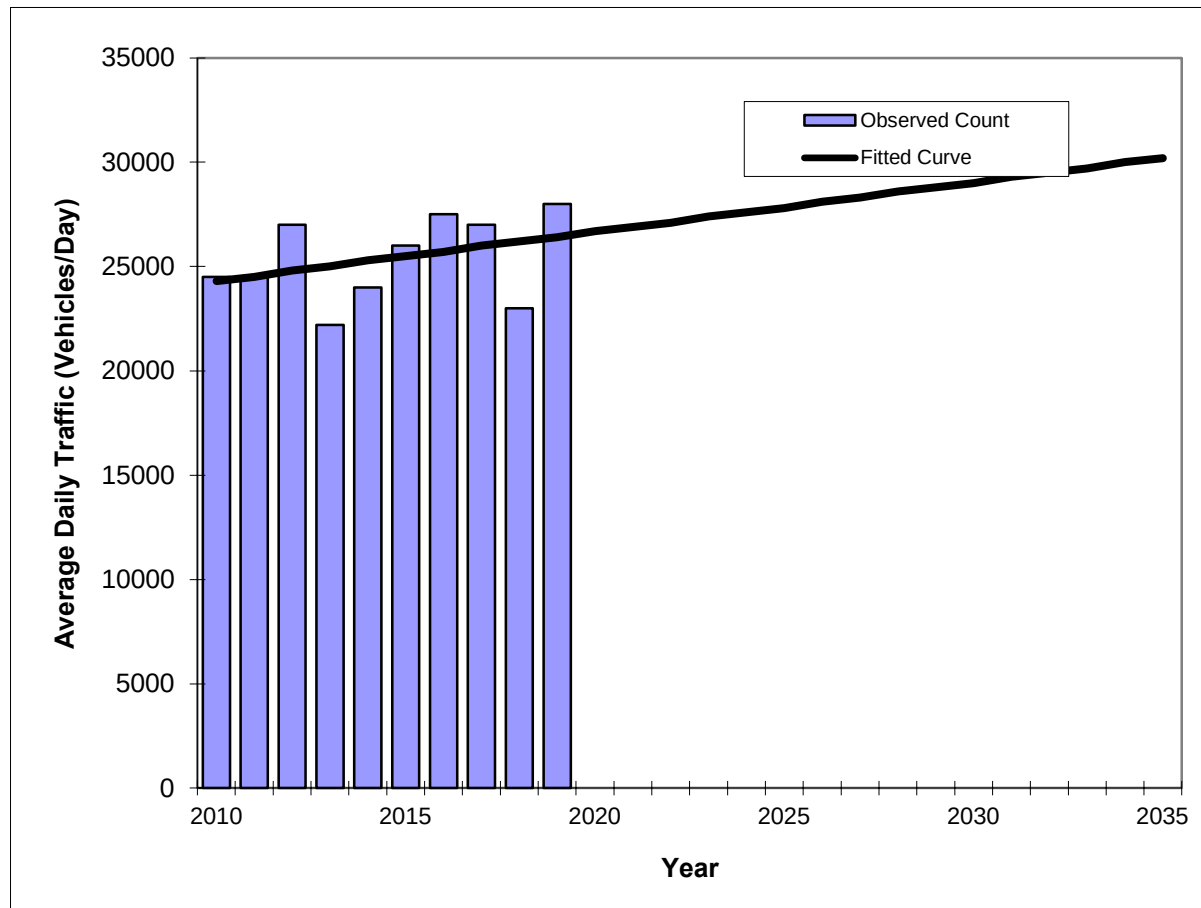
Trend R-squared:	0.22%
Compounded Annual Historic Growth Rate:	-0.19%
Printed:	2-May-22
Decaying Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 196 Avenue

County:	Broward (86)
Station #:	86005
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	24500	24300
2011	24500	24500
2012	27000	24800
2013	22200	25000
2014	24000	25300
2015	26000	25500
2016	27500	25700
2017	27000	26000
2018	23000	26200
2019	28000	26400

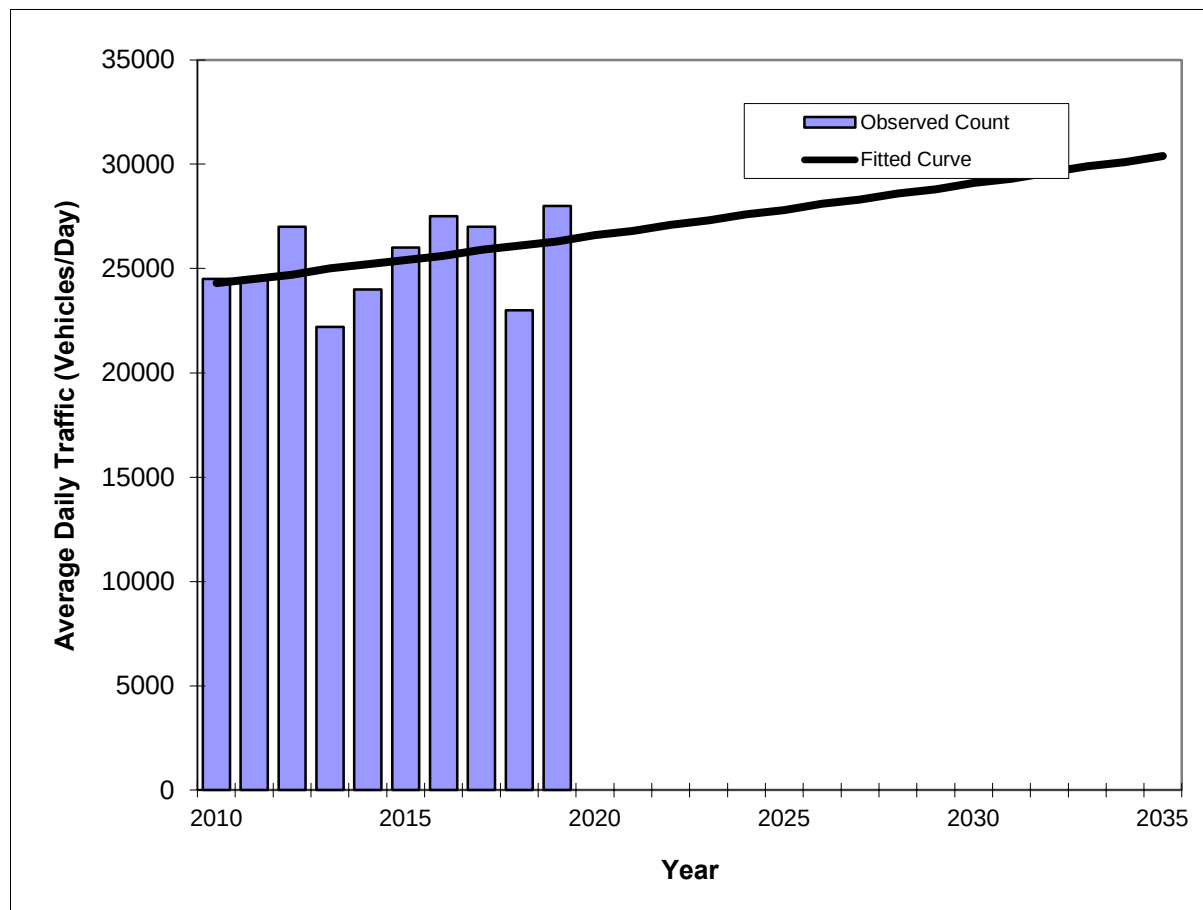
Trend R-squared:	12.66%
Trend Annual Historic Growth Rate:	0.96%
Printed:	2-May-22
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 196 Avenue

County:	Broward (86)
Station #:	86005
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	24500	24300
2011	24500	24500
2012	27000	24700
2013	22200	25000
2014	24000	25200
2015	26000	25400
2016	27500	25600
2017	27000	25900
2018	23000	26100
2019	28000	26300

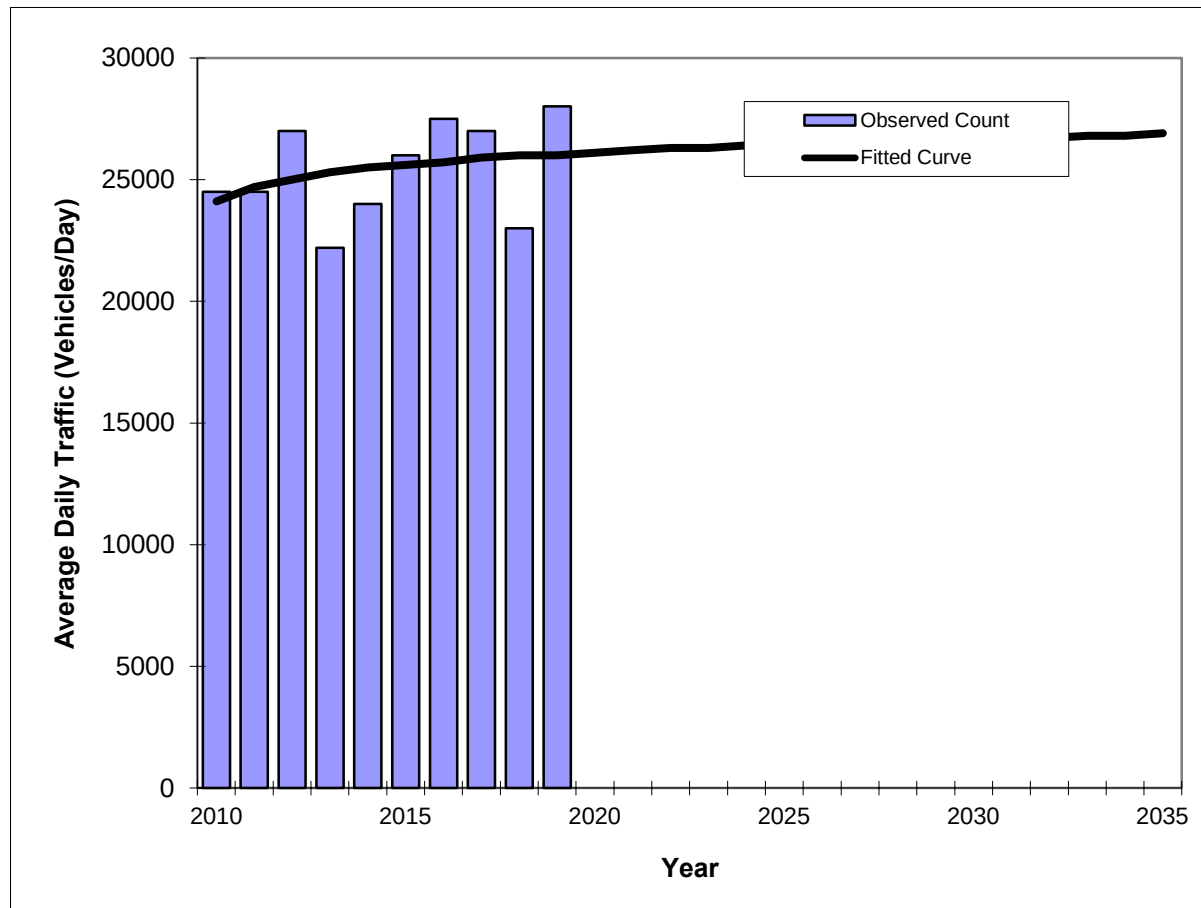
Trend R-squared:	11.58%
Compounded Annual Historic Growth Rate:	0.88%
Printed:	2-May-22
Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 196 Avenue

County:	Broward (86)
Station #:	86005
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	24500	24100
2011	24500	24700
2012	27000	25000
2013	22200	25300
2014	24000	25500
2015	26000	25600
2016	27500	25700
2017	27000	25900
2018	23000	26000
2019	28000	26000

Trend R-squared:	9.60%
Compounded Annual Historic Growth Rate:	0.85%
Printed:	2-May-22
Decaying Exponential Growth Option	

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0207 - SR 820 / PINES BLVD - E OF SW 184 AVE

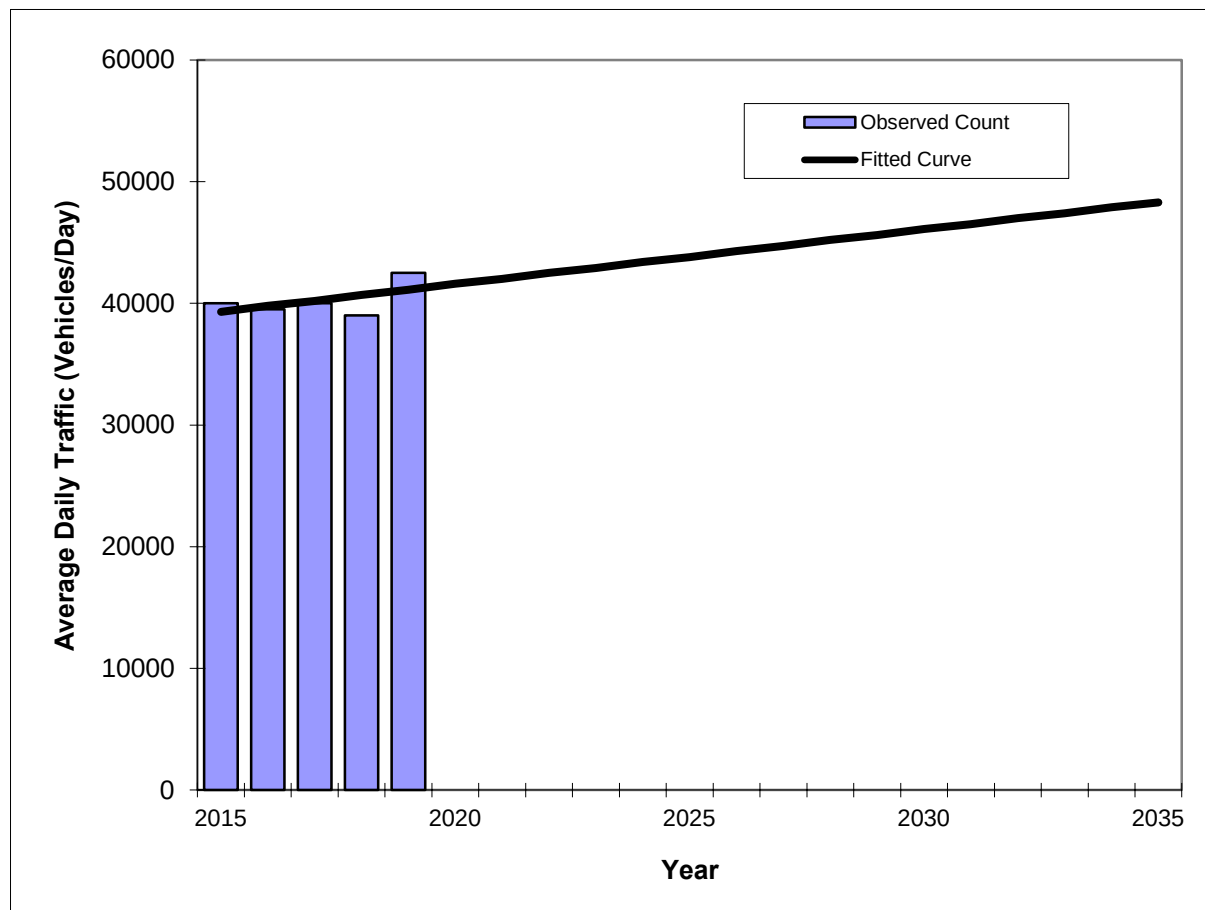
YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2020	40500 F	E	21000	W	19500	9.00	55.10	4.00
2019	42500 C	E	22000	W	20500	9.00	56.00	4.00
2018	39000 C	E	21000	W	18000	9.00	56.30	4.00
2017	40000 C	E	20000	W	20000	9.00	57.10	3.60
2016	39500 C	E	20000	W	19500	9.00	56.10	3.60
2015	40000 C	E	20000	W	20000	9.00	56.20	3.60
2014	40000 C	E	19500	W	20500	9.00	56.80	2.10
2013	36500 C	E	17500	W	19000	9.00	56.20	2.70
2012	39000 C	E	19500	W	19500	9.00	57.00	4.50
2011	36000 C	E	18500	W	17500	9.00	59.10	4.40
2010	38000 C	E	19500	W	18500	9.60	57.92	4.40
2009	39500 C	E	21000	W	18500	9.71	58.42	4.40
2008	39500 C	E	20000	W	19500	9.67	56.67	7.10
2007	33000 C	E	16500	W	16500	10.19	60.63	7.10
2006	34000 C	E	17500	W	16500	9.61	59.08	2.70
2005	33000 C	E	17000	W	16000	10.00	58.10	3.40

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
 *K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends

SR 820/Pines Boulevard -- E of SW 184 Avenue

County:	Broward (86)
Station #:	860207
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	40000	39300
2016	39500	39800
2017	40000	40200
2018	39000	40700
2019	42500	41100

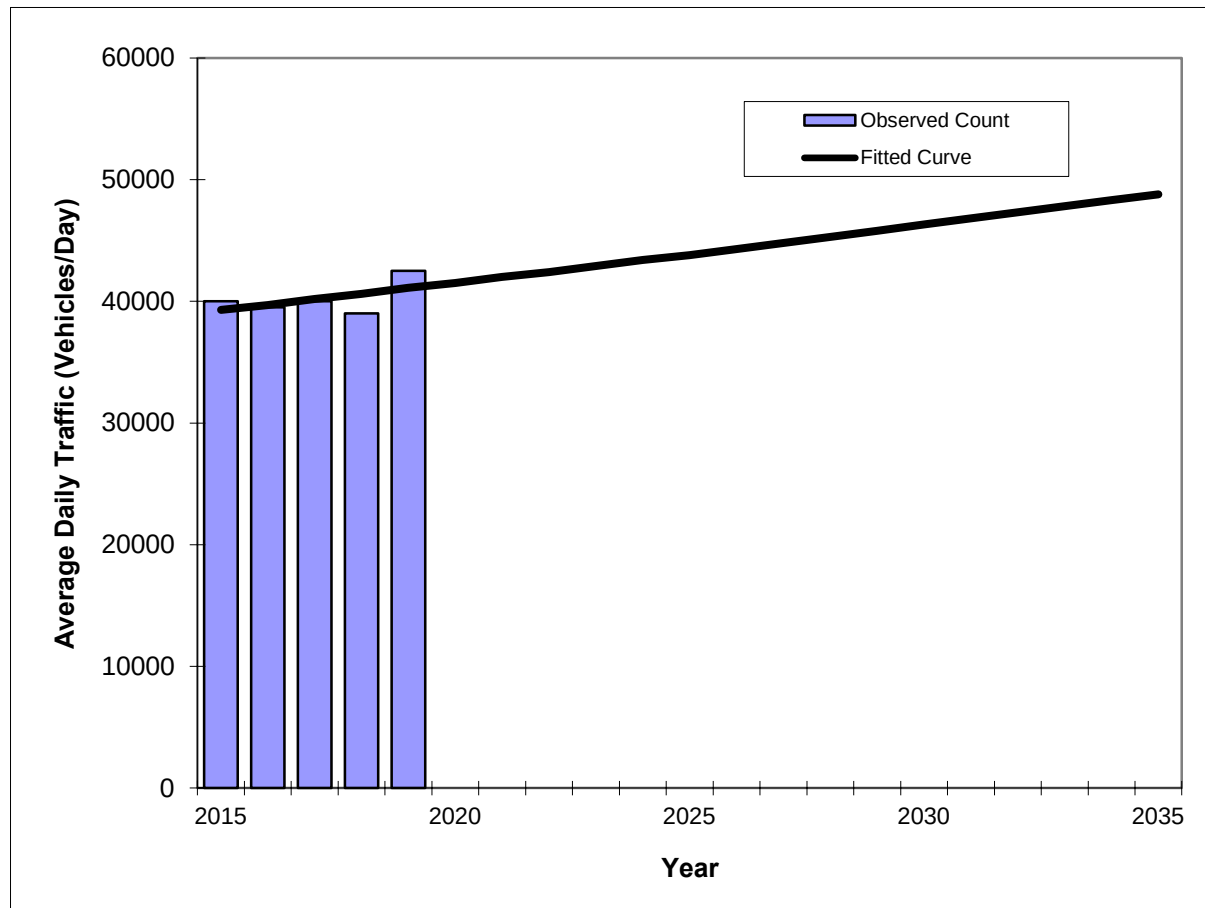
Trend R-squared:	27.74%
Trend Annual Historic Growth Rate:	1.15%
Printed:	2-May-22
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 184 Avenue

County:	Broward (86)
Station #:	860207
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	40000	39300
2016	39500	39700
2017	40000	40200
2018	39000	40600
2019	42500	41100

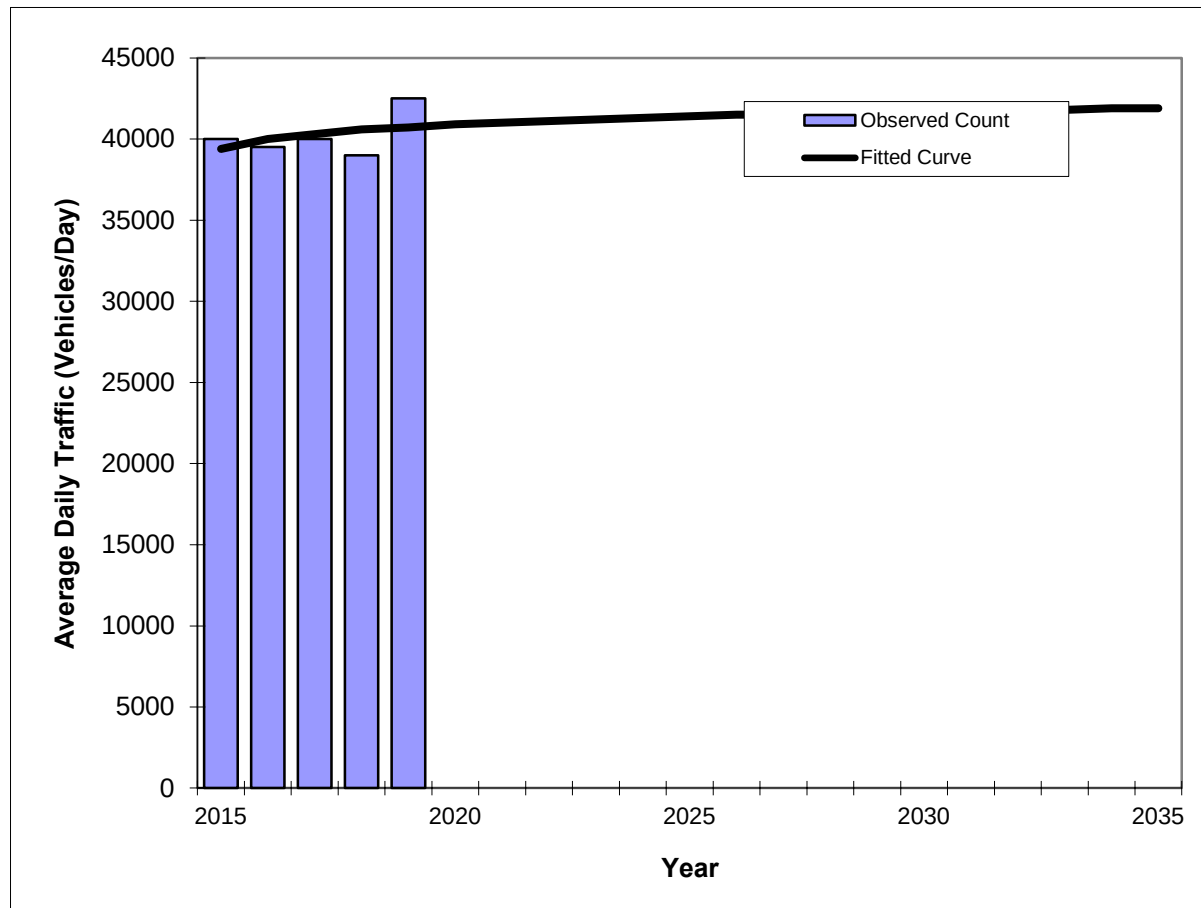
Trend R-squared:	26.94%
Compounded Annual Historic Growth Rate:	1.13%
Printed:	2-May-22
Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 184 Avenue

County:	Broward (86)
Station #:	860207
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	40000	39400
2016	39500	40000
2017	40000	40300
2018	39000	40600
2019	42500	40700

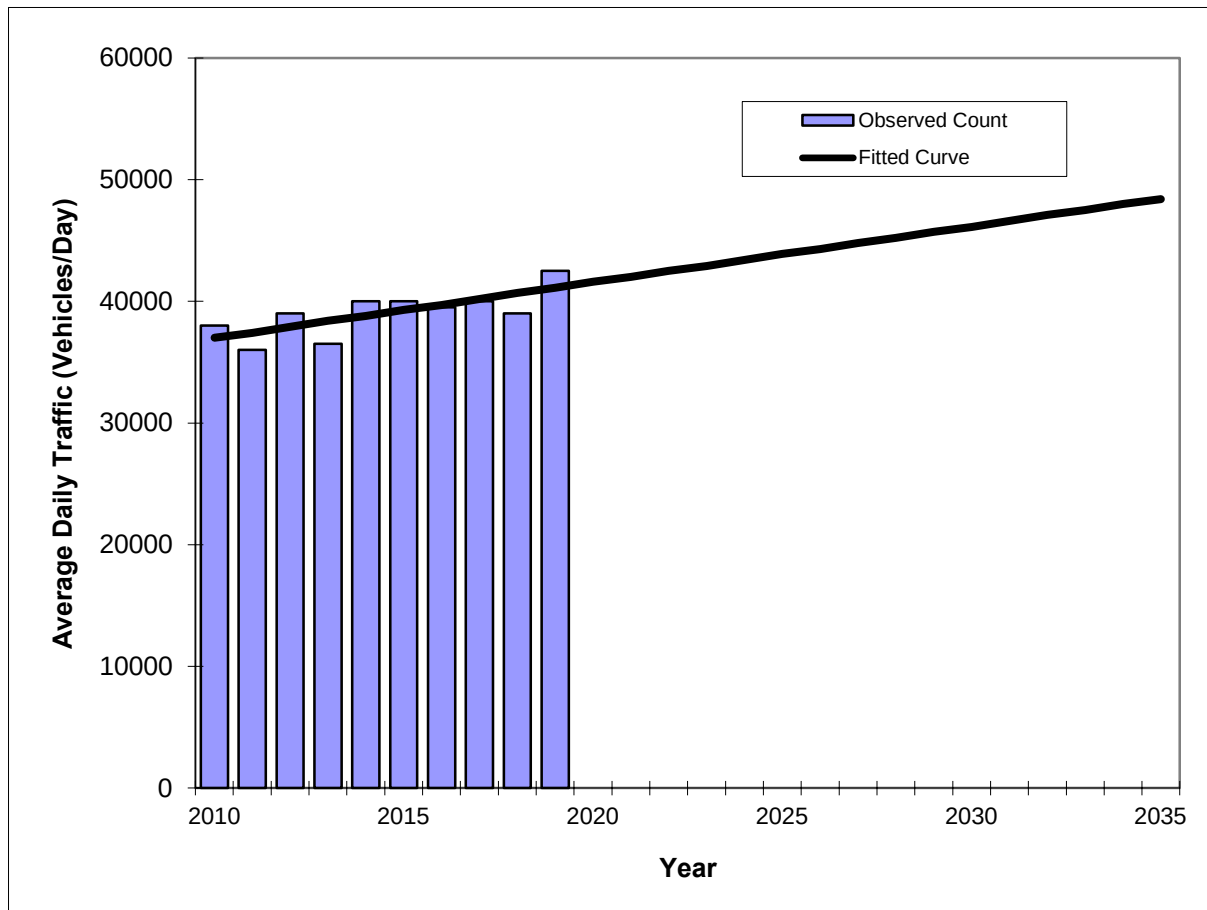
Trend R-squared:	15.07%
Compounded Annual Historic Growth Rate:	0.81%
Printed:	2-May-22
Decaying Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 184 Avenue

County:	Miami-Dade (87)
Station #:	860207
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	38000	37000
2011	36000	37400
2012	39000	37900
2013	36500	38400
2014	40000	38800
2015	40000	39300
2016	39500	39700
2017	40000	40200
2018	39000	40700
2019	42500	41100

Trend R-squared: 54.45%
Trend Annual Historic Growth Rate: 1.23%
Printed: 2-May-22

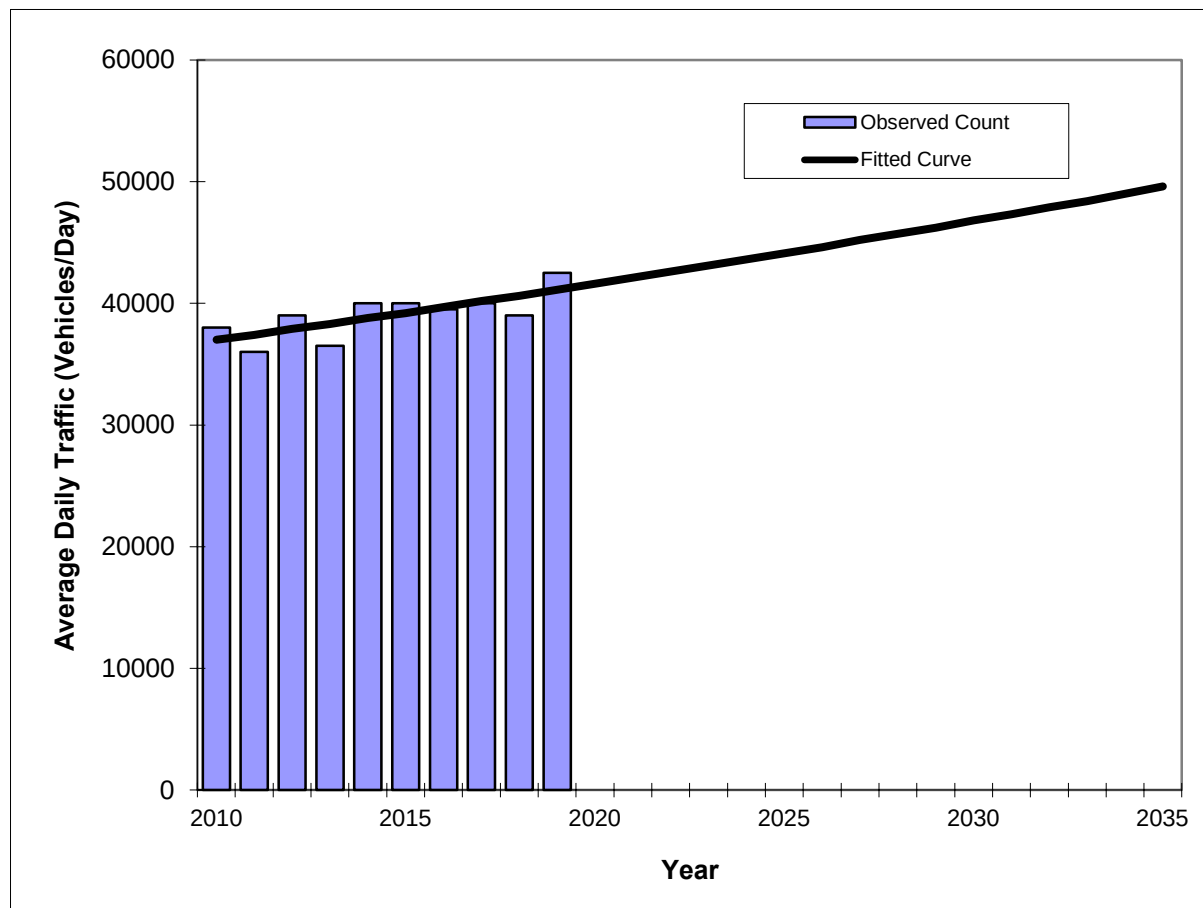
Straight Line Growth Option

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 184 Avenue

County:	Miami-Dade (87)
Station #:	860207
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	38000	37000
2011	36000	37400
2012	39000	37900
2013	36500	38300
2014	40000	38800
2015	40000	39200
2016	39500	39700
2017	40000	40200
2018	39000	40600
2019	42500	41100

Trend R-squared: 53.96%
 Compounded Annual Historic Growth Rate: 1.17%
 Printed: 2-May-22

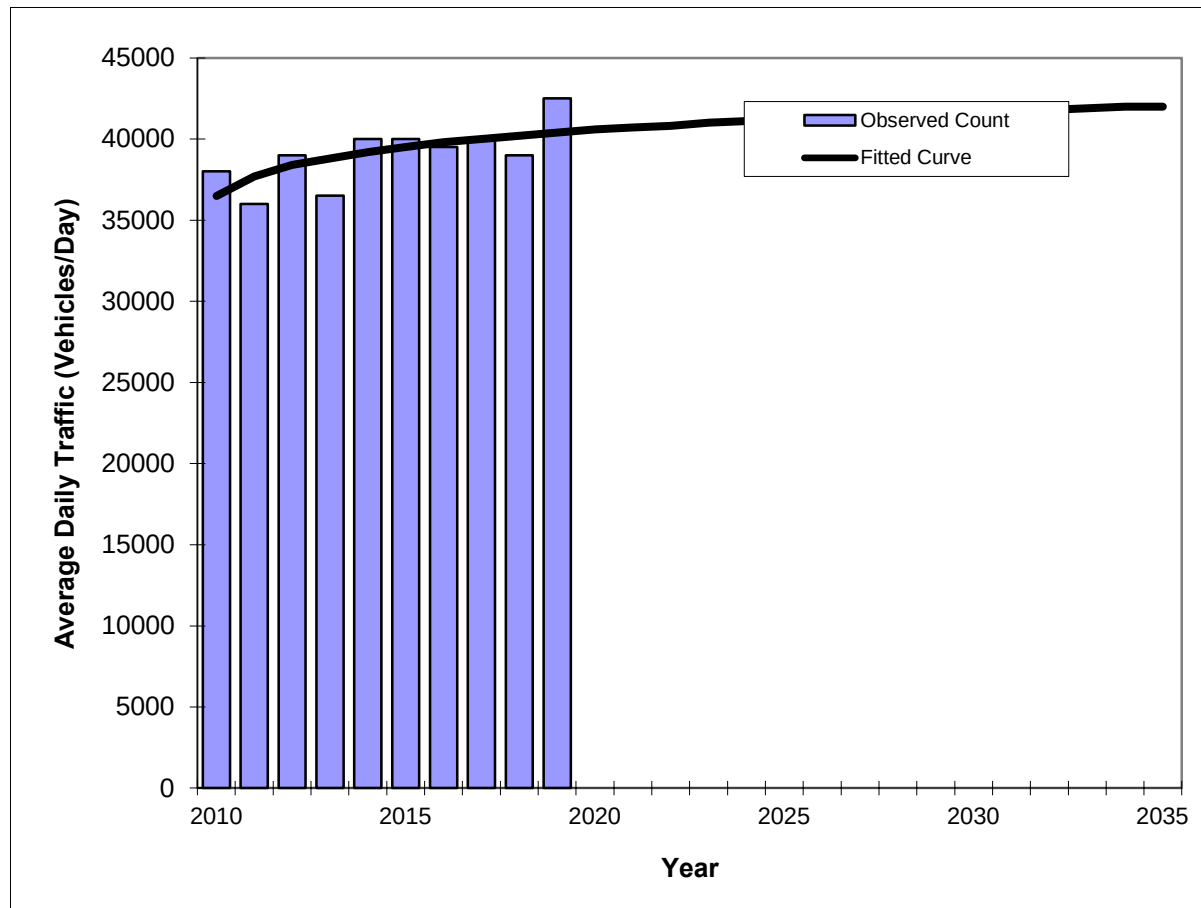
Exponential Growth Option

*Axle-Adjusted

Traffic Trends

SR 820/Pines Boulevard -- E of SW 184 Avenue

County:	Miami-Dade (87)
Station #:	860207
Highway:	SR 820/Pines Boulevard



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	38000	36500
2011	36000	37700
2012	39000	38400
2013	36500	38800
2014	40000	39200
2015	40000	39500
2016	39500	39800
2017	40000	40000
2018	39000	40200
2019	42500	40400

Trend R-squared:	43.96%
Compounded Annual Historic Growth Rate:	1.13%
Printed:	2-May-22
Decaying Exponential Growth Option	

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 9486 - SW 184 AVENUE, S OF PINES BLVD.

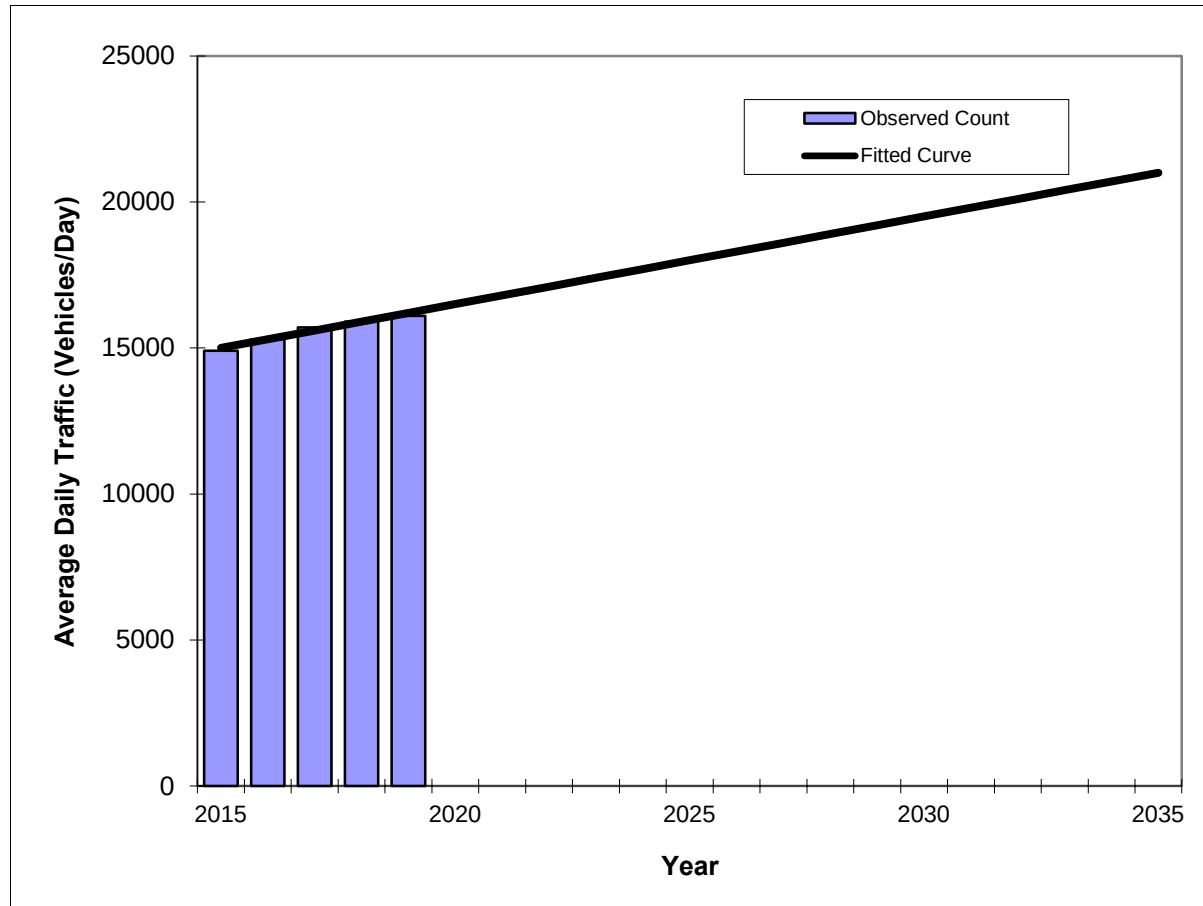
YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2020	13700 C	N	7500	S	6200	9.00	55.10	8.80
2019	16100 R	N	7900	S	8200	9.00	56.00	5.50
2018	15900 T	N	7800	S	8100	9.00	56.30	6.00
2017	15700 S	N	7700	S	8000	9.00	57.10	6.20
2016	15300 F	N	7500	S	7800	9.00	56.10	2.90
2015	14900 C	N	7300	S	7600	9.00	56.20	3.40
2014	16100 T	N	8200	S	7900	9.00	56.80	7.40
2013	15700 S	N	8000	S	7700	9.00	56.20	7.60
2012	15500 F	N	7900	S	7600	9.00	57.00	5.90
2011	15300 C	N	7800	S	7500	9.00	59.10	6.30
2010	15300 F	N	7600	S	7700	9.60	57.92	9.30
2009	14900 C	N	7400	S	7500	9.71	58.42	5.30
2008	13500 F		0		0	9.67	56.67	6.50
2007	13500 C	N	0	S	0	10.19	60.63	4.80
2006	15000 C	N	0	S	0	9.61	59.08	2.90
2005	16000 C	N		S		10.00	58.10	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends

SW 184 Avenue -- S of Pines Boulevard

County:	Broward (86)
Station #:	869486
Highway:	SW 184 Avenue



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	14900	15000
2016	15300	15300
2017	15700	15600
2018	15900	15900
2019	16100	16200

*Axle-Adjusted

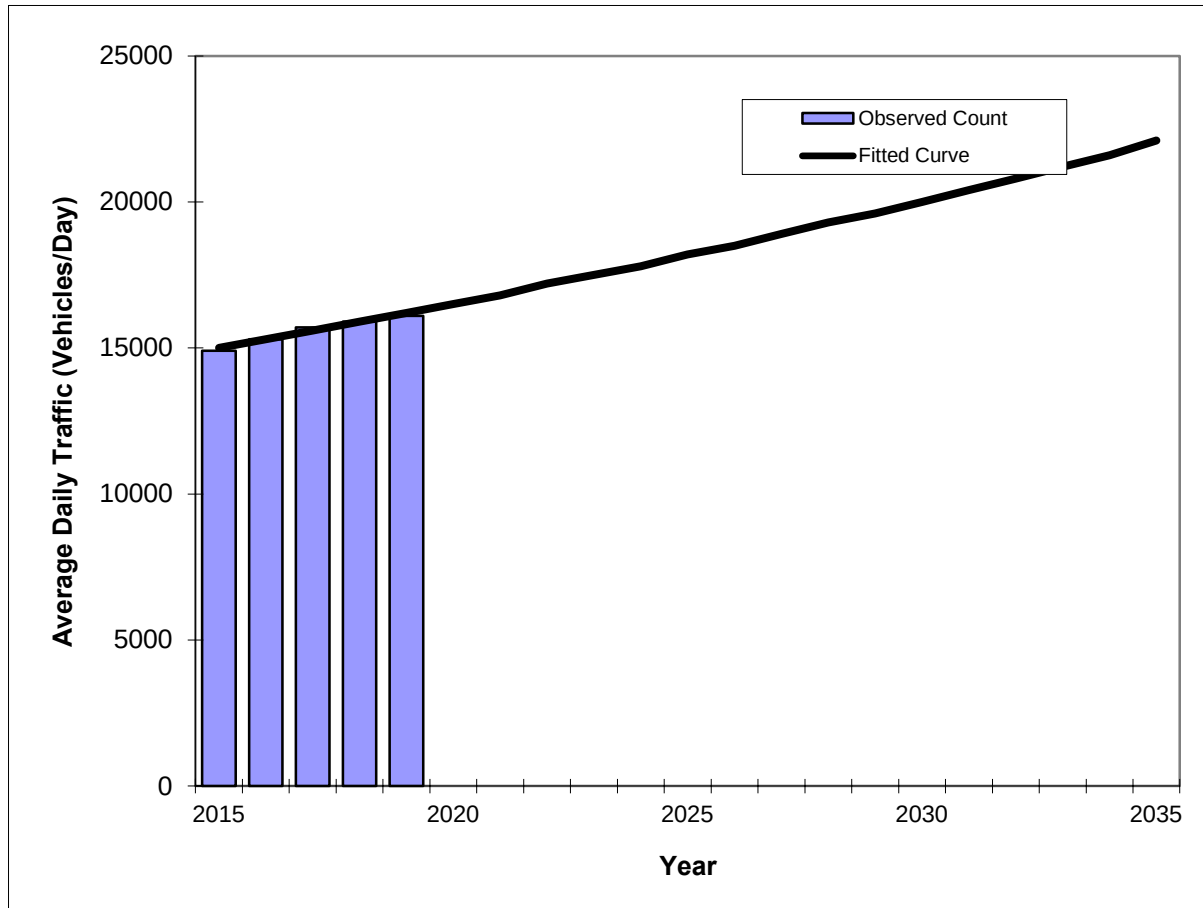
Trend R-squared:	96.98%
Trend Annual Historic Growth Rate:	2.00%
Printed:	2-May-22
Straight Line Growth Option	

Straight Line Growth Option

Traffic Trends

SW 184 Avenue -- S of Pines Boulevard

County:	Broward (86)
Station #:	869486
Highway:	SW 184 Avenue



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	14900	15000
2016	15300	15300
2017	15700	15600
2018	15900	15900
2019	16100	16200

Trend R-squared: 96.64%
 Compounded Annual Historic Growth Rate: 1.94%
 Printed: 2-May-22

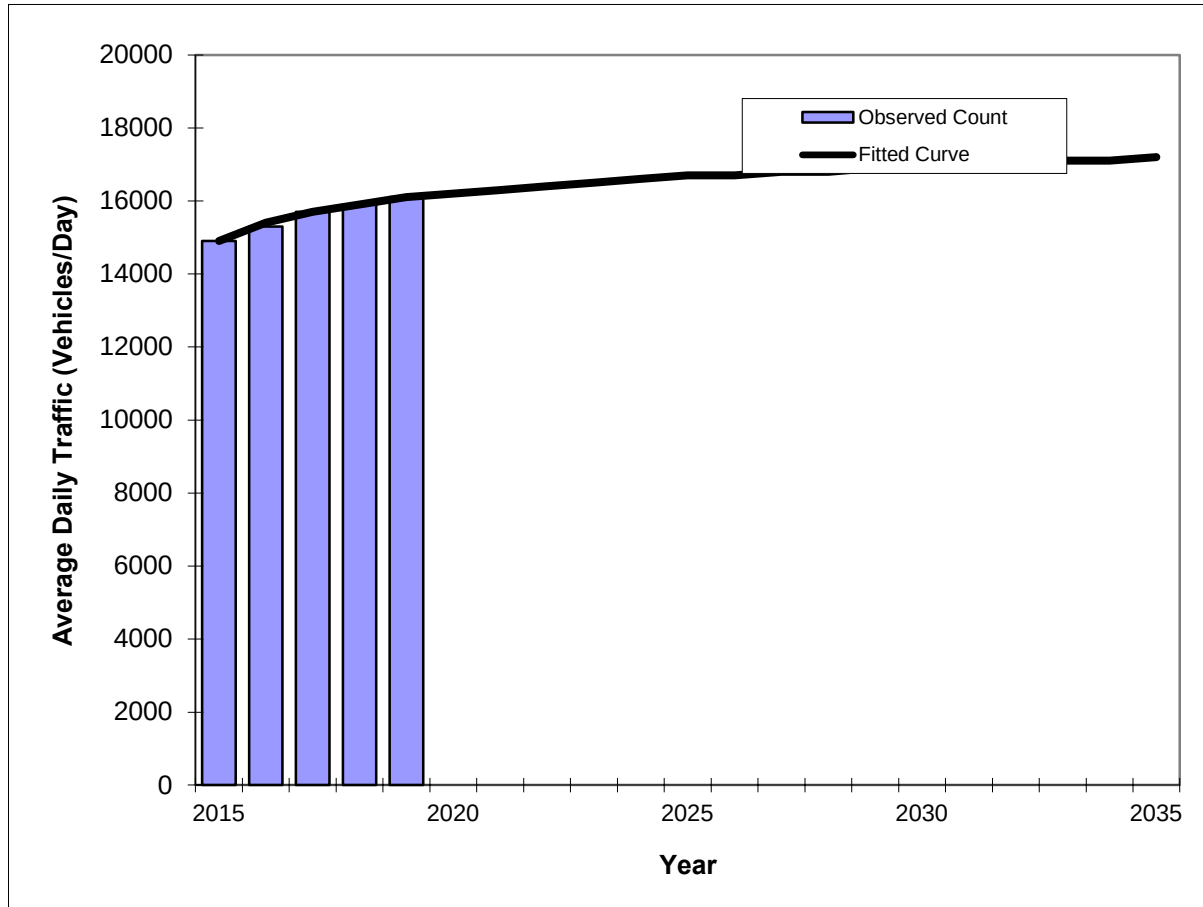
Exponential Growth Option

*Axle-Adjusted

Traffic Trends

SW 184 Avenue -- S of Pines Boulevard

County:	Broward (86)
Station #:	869486
Highway:	SW 184 Avenue



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	14900	14900
2016	15300	15400
2017	15700	15700
2018	15900	15900
2019	16100	16100

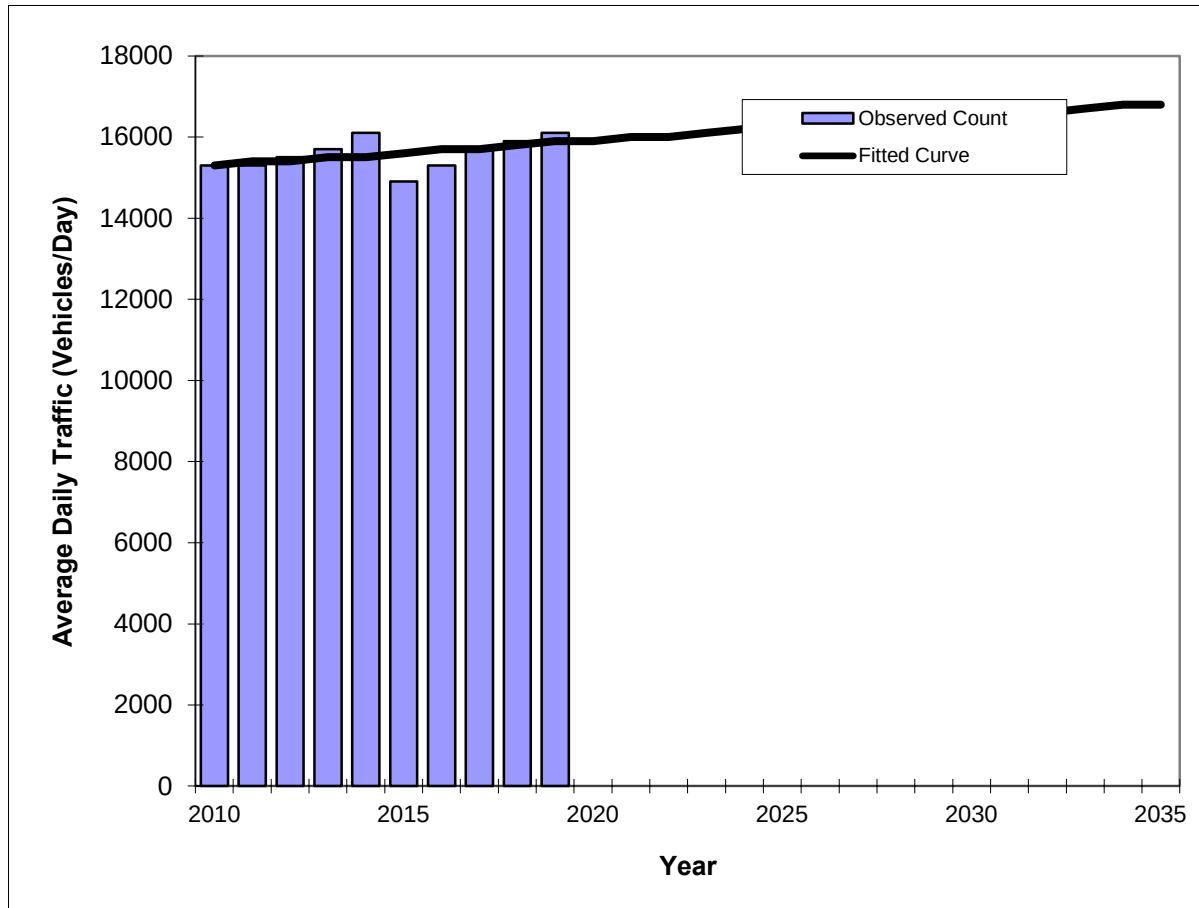
Trend R-squared:	99.00%
Compounded Annual Historic Growth Rate:	1.96%
Printed:	2-May-22
Decaying Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SW 184 Avenue -- S of Pines Boulevard

County:	Broward (86)
Station #:	869486
Highway:	SW 184 Avenue



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	15300	15300
2011	15300	15400
2012	15500	15400
2013	15700	15500
2014	16100	15500
2015	14900	15600
2016	15300	15700
2017	15700	15700
2018	15900	15800
2019	16100	15900

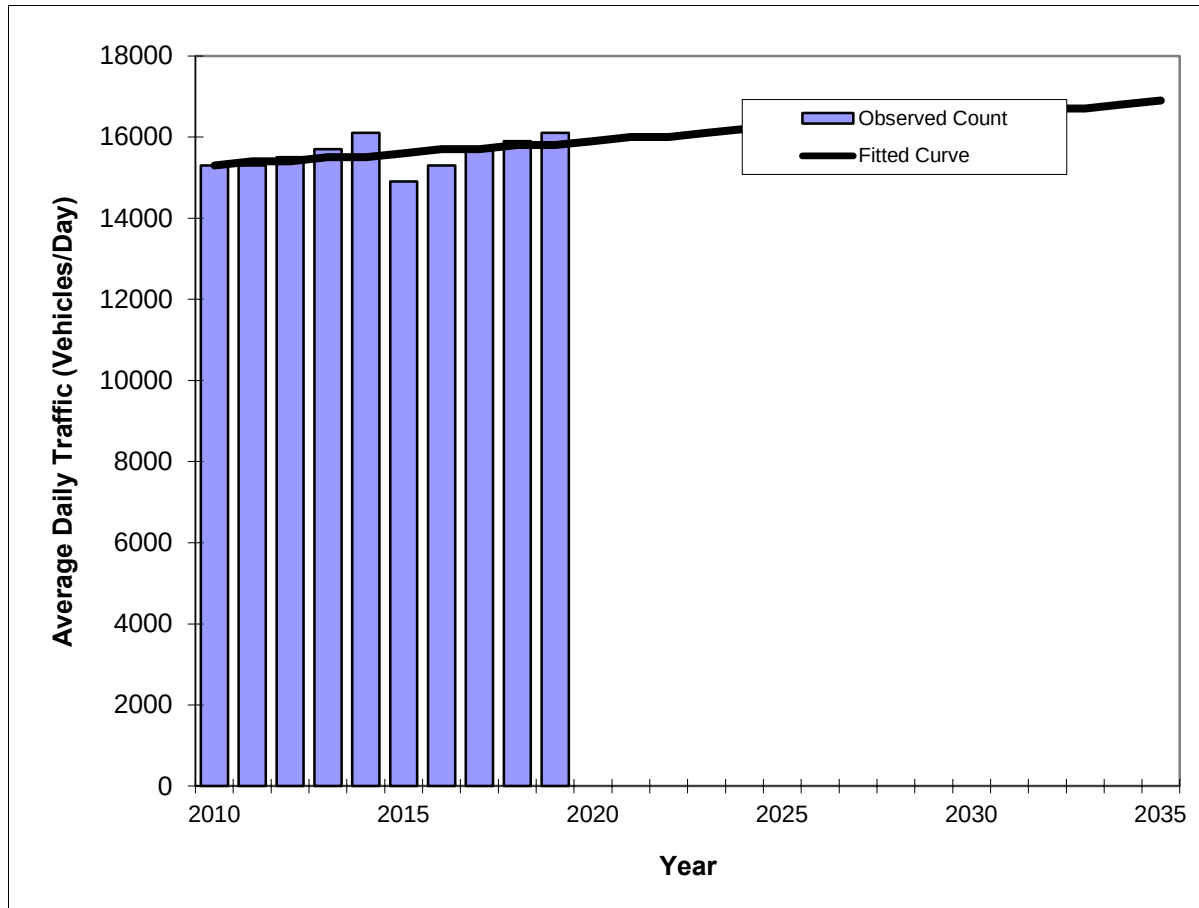
Trend R-squared:	22.02%
Trend Annual Historic Growth Rate:	0.44%
Printed:	2-May-22
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

SW 184 Avenue -- S of Pines Boulevard

County:	Broward (86)
Station #:	869486
Highway:	SW 184 Avenue



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	15300	15300
2011	15300	15400
2012	15500	15400
2013	15700	15500
2014	16100	15500
2015	14900	15600
2016	15300	15700
2017	15700	15700
2018	15900	15800
2019	16100	15800

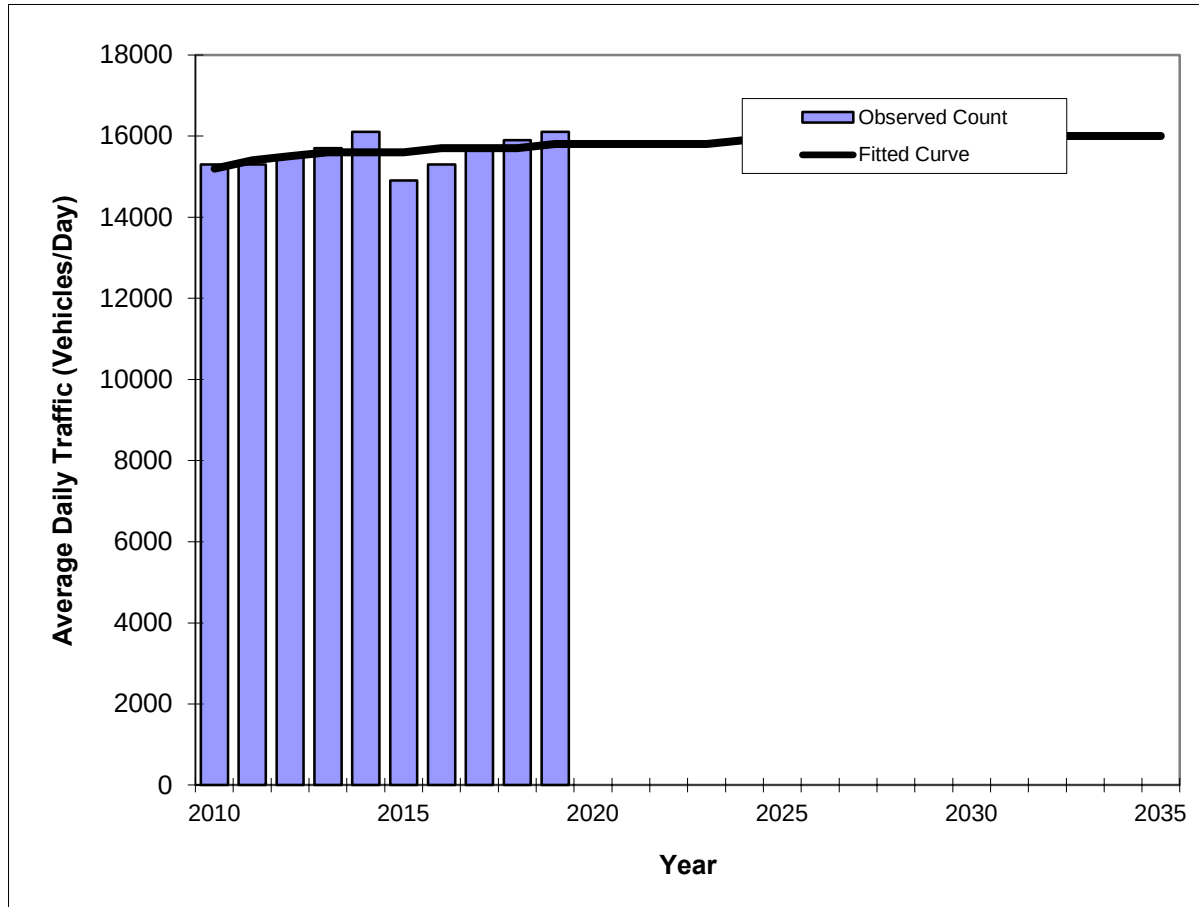
Trend R-squared:	21.62%
Compounded Annual Historic Growth Rate:	0.36%
Printed:	2-May-22
Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

SW 184 Avenue -- S of Pines Boulevard

County:	Broward (86)
Station #:	869486
Highway:	SW 184 Avenue



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2010	15300	15200
2011	15300	15400
2012	15500	15500
2013	15700	15600
2014	16100	15600
2015	14900	15600
2016	15300	15700
2017	15700	15700
2018	15900	15700
2019	16100	15800

Trend R-squared: 18.45%
 Compounded Annual Historic Growth Rate: 0.43%
 Printed: 2-May-22

Decaying Exponential Growth Option

*Axle-Adjusted

SERPM Analysis

SERPM Growth Rate Summary					
Street Name	2015	2045	Difference	Growth Rate	Annual Growth Rate
SR-820/Pines Boulevard	8,687	7,924	-763	-8.78%	-0.29%
	15,488	13,161	-2,327	-15.02%	-0.50%
	12,953	11,012	-1,941	-14.98%	-0.50%
	23,235	21,421	-1,814	-7.81%	-0.26%
	12,300	14,292	1,992	16.20%	0.54%
Pembroke Road	7,985	17,094	9,109	114.08%	3.80%
	15,596	24,082	8,486	54.41%	1.81%
US-27	22,950	33,085	10,135	44.16%	1.47%
	27,910	38,676	10,766	38.57%	1.29%
SW 196th Avenue	3,649	5,197	1,548	42.42%	1.41%
	1,483	2,065	582	39.24%	1.31%
	1,208	308	-900	-74.50%	-2.48%
SW 184th Avenue	4,280	1,161	-3,119	-72.87%	-2.43%
	11,251	8,280	-2,971	-26.41%	-0.88%
	14,027	13,155	-872	-6.22%	-0.21%
Total	183,002	210,913	27,911	15.25%	0.51%

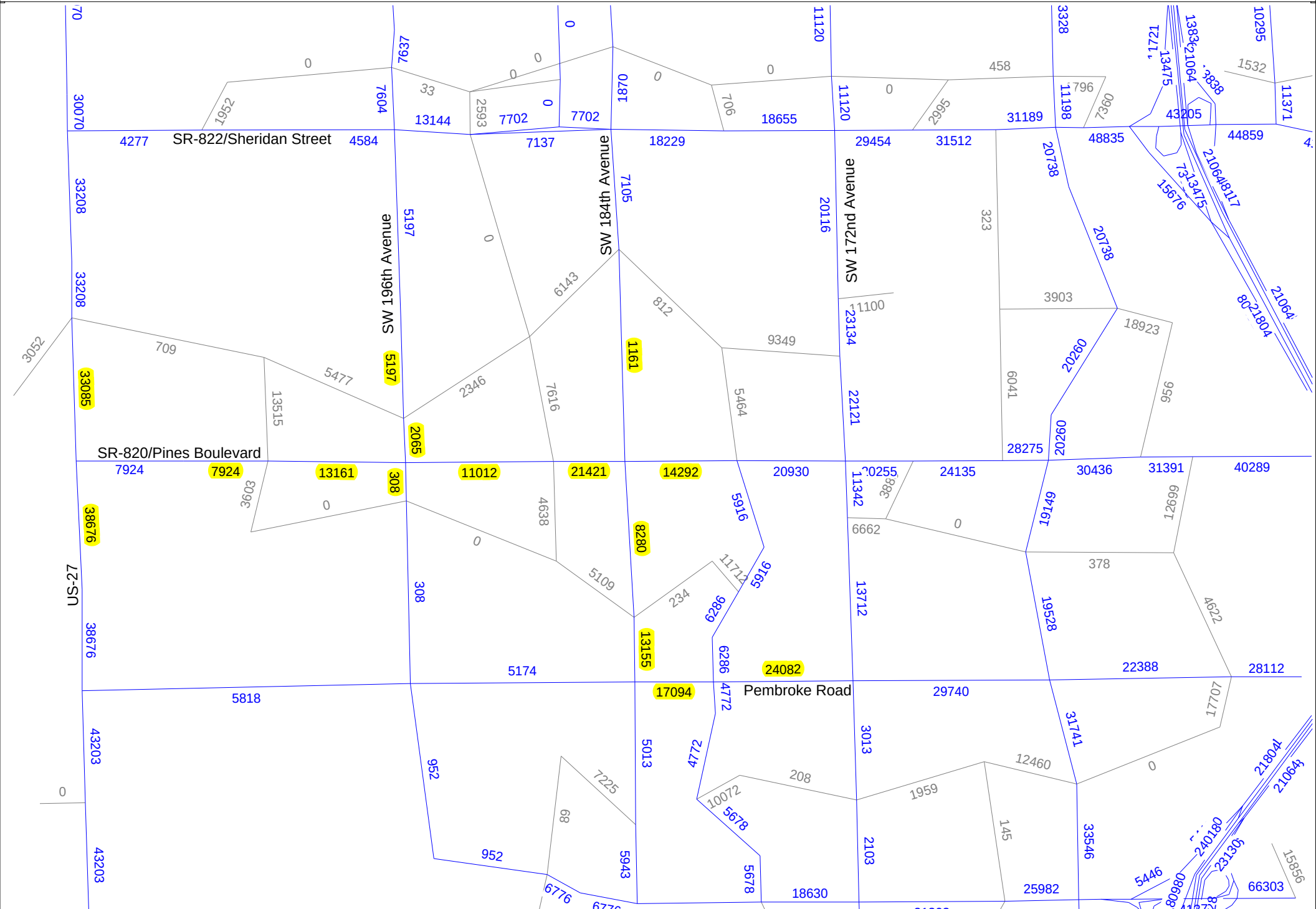
SERPM 8.521



Franklin Academy – Pembroke Pines Campus (K-8) Expansion

2045 Volumes

SERPM 8.521



Appendix E

Trip Generation Comparison

SCHOOL AM PEAK HOUR TRIP GENERATION COMPARISON

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS			Existing Trips (TMC)	Difference	
Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total			
					In	Out																					
1	Charter School (K-12)	11	538	1340	stu	51%	49%	567	545	1,112	0.0%	0	567	545	1,112	0.0%	0	567	545	1,112	0.0%	0	567	545	1,112	1,305	193
2	Charter Elementary School	11	536	1340	stu	53%	47%	640	567	1,207	0.0%	0	640	567	1,207	0.0%	0	640	567	1,207	0.0%	0	640	567	1,207		98
3	Private School (K-8)	11	530	1340	stu	56%	44%	686	539	1,225	0.0%	0	686	539	1,225	0.0%	0	686	539	1,225	0.0%	0	686	539	1,225		80
4																											
ITE Land Use Code					Rate or Equation																						
538					Y=0.83(X)																						
536					Y=0.9*(X)+0.69																						
530					LN(Y) = 0.95*LN(X)+0.27																						

SCHOOL PM PEAK HOUR TRIP GENERATION COMPARISON

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS			Existing Trips (TMC)	Difference
Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total		
					In	Out																				
1 Charter School (K-12)	11	538	1340	stu	50%	50%	500	500	1,000	0.0%	0	500	500	1,000	0.0%	0	500	500	1,000	0.0%	0	500	500	1,000	877	-123
2 Charter Elementary School	11	536	1340	stu	49%	51%	433	451	884	0.0%	0	433	451	884	0.0%	0	433	451	884	0.0%	0	433	451	884		-7
3 Private School (K-8)	11	530	1340	stu	47%	53%	373	420	793	0.0%	0	373	420	793	0.0%	0	373	420	793	0.0%	0	373	420	793		84
4																										
ITE Land Use Code					Rate or Equation																					
538					Y=0.92*(X)+232.86																					
536					LN(Y) = 0.92*LN(X)+0.16																					
530					LN(Y) = 0.98*LN(X)+0.38																					

Appendix F

Volume Development Worksheets

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: SR 820/Pines Boulevard at SW 184 Avenue
COUNT DATE: April 12, 2022
AM PEAK HOUR FACTOR: 0.88
PM PEAK HOUR FACTOR: 0.93

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			136	1,735	194		168	1,456	200		240	222	177		290	203	139		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AM EXISTING CONDITIONS			136	1,735	194		168	1,456	200		240	222	177		290	203	139		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			176	1,325	216		282	1,256	238		288	216	222		286	238	125		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
PM EXISTING CONDITIONS			176	1,325	216		282	1,256	238		288	216	222		286	238	125		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
AM BACKGROUND TRAFFIC GROWTH			3	35	4		3	29	4		5	4	4		6	4	3		
AM NON-PROJECT TRAFFIC			139	1,770	198		171	1,485	204		245	226	181		296	207	142		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
PM BACKGROUND TRAFFIC GROWTH			4	26	4		6	25	5		6	4	4		6	5	2		
PM NON-PROJECT TRAFFIC			180	1,351	220		288	1,281	243		294	220	226		292	243	127		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering									62.0%									
	Exiting				89.0%														
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering									62.0%									
	Exiting				89.0%														
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New				166					131									
AM TOTAL PROJECT TRAFFIC					0	166	0		0	131	0		0	0	0		0	0	0
AM TOTAL TRAFFIC			139	1,936	198		171	1,616	204		245	226	181		296	207	142		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New				111					88									
PM TOTAL PROJECT TRAFFIC					0	111	0		0	88	0		0	0	0		0	0	0
PM TOTAL TRAFFIC			180	1,462	220		288	1,369	243		294	220	226		292	243	127		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: SR 820/Pines Boulevard at SW 186 Avenue
COUNT DATE: April 12, 2022
AM PEAK HOUR FACTOR: 0.82
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			103	1,869	14			59	1,665	95		22	5	110		167	5	127	
Peak Season Correction Factor			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AM EXISTING CONDITIONS			103	1,869	14			59	1,665	95		22	5	110		167	5	127	
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			97	1,668	15			121	1,413	157		11	6	58		103	6	52	
Peak Season Correction Factor			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PM EXISTING CONDITIONS			97	1,668	15			121	1,413	157		11	6	58		103	6	52	
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
AM BACKGROUND TRAFFIC GROWTH			2	37	0		1	33	2		0	0	2		3	0	3		
AM NON-PROJECT TRAFFIC			105	1,906	14		60	1,698	97		22	5	112		170	5	130		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
PM BACKGROUND TRAFFIC GROWTH			2	33	0		2	28	3		0	0	1		2	0	1		
PM NON-PROJECT TRAFFIC			99	1,701	15		123	1,441	160		11	6	59		105	6	53		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering								62.0%										
	Exiting		11.0%	89.0%															
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering								62.0%										
	Exiting		11.0%	89.0%															
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New		21	166					131										
AM TOTAL PROJECT TRAFFIC				21	166	0		0	131	0		0	0	0		0	0	0	
AM TOTAL TRAFFIC			126	2,072	14		60	1,829	97		22	5	112		170	5	130		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New		14	111					88										
PM TOTAL PROJECT TRAFFIC				14	111	0		0	88	0		0	0	0		0	0	0	
PM TOTAL TRAFFIC			113	1,812	15		123	1,529	160		11	6	59		105	6	53		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: SR 820/Pines Boulevard at Site East Driveway
COUNT DATE: April 12, 2022
AM PEAK HOUR FACTOR: 0.81
PM PEAK HOUR FACTOR: 0.91

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			0	1,325	41		0	2,003	0		0	0	525		0	0	0		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AM EXISTING CONDITIONS			0	1,325	41		0	2,003	0		0	0	525		0	0	0		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			0	1,519	18		0	1,493	0		0	0	257		0	0	0		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
PM EXISTING CONDITIONS			0	1,519	18		0	1,493	0		0	0	257		0	0	0		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
AM BACKGROUND TRAFFIC GROWTH			0	26	1		0	40	0		0	0	10		0	0	0		
AM NON-PROJECT TRAFFIC			0	1,351	42		0	2,043	0		0	0	535		0	0	0		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
PM BACKGROUND TRAFFIC GROWTH			0	30	0		0	30	0		0	0	5		0	0	0		
PM NON-PROJECT TRAFFIC			0	1,549	18		0	1,523	0		0	0	262		0	0	0		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering				3.0%				62.0%										
	Exiting								11.0%					100.0%					
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering				3.0%				62.0%										
	Exiting								11.0%					100.0%					
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New				6				152					187					
AM TOTAL PROJECT TRAFFIC					0	0	6		0	152	0		0	0	187		0	0	0
AM TOTAL TRAFFIC			0	1,351	48		0	2,195	0		0	0	722		0	0	0		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New				4				102					125					
PM TOTAL PROJECT TRAFFIC					0	0	4		0	102	0		0	0	125		0	0	0
PM TOTAL TRAFFIC			0	1,549	22		0	1,625	0		0	0	387		0	0	0		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: SR 820/Pines Boulevard at Site West/SmartStop Storage Driveway
COUNT DATE: April 12, 2022
AM PEAK HOUR FACTOR: 0.86
PM PEAK HOUR FACTOR: 0.88

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			0	1,559	166		296	1,554	0		0	0	0		0	0	0		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AM EXISTING CONDITIONS			0	1,559	166		296	1,554	0		0	0	0		0	0	0		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			0	1,526	69		128	1,361	0		0	0	2		0	0	0		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
PM EXISTING CONDITIONS			0	1,526	69		128	1,361	0		0	0	2		0	0	0		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
AM BACKGROUND TRAFFIC GROWTH			0	31	3		6	31	0		0	0	0		0	0	0		
AM NON-PROJECT TRAFFIC			0	1,590	169		302	1,585	0		0	0	0		0	0	0		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
PM BACKGROUND TRAFFIC GROWTH			0	30	1		3	27	0		0	0	0		0	0	0		
PM NON-PROJECT TRAFFIC			0	1,556	70		131	1,388	0		0	0	2		0	0	0		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering			3.0%	35.0%			62.0%											
	Exiting							11.0%											
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Valet Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering			3.0%	35.0%			62.0%											
	Exiting							11.0%											
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New			6	74			131	21										
AM TOTAL PROJECT TRAFFIC				0	6	74		131	21	0		0	0	0		0	0	0	
AM TOTAL TRAFFIC			0	1,596	243		433	1,606	0		0	0	0		0	0	0		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New			4	50			88	14										
PM TOTAL PROJECT TRAFFIC				0	4	50		88	14	0		0	0	0		0	0	0	
PM TOTAL TRAFFIC			0	1,560	120		219	1,402	0		0	0	2		0	0	0		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: SR 820/Pines Boulevard at SW 196 Avenue
COUNT DATE: April 12, 2022
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.85

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			207	1,224	501		150	1,087	182		311	153	186		287	193	206		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AM EXISTING CONDITIONS			207	1,224	501		150	1,087	182		311	153	186		287	193	206		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			188	1,090	422		108	989	195		137	74	90		254	164	108		
Peak Season Correction Factor			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
PM EXISTING CONDITIONS			188	1,090	422		108	989	195		137	74	90		254	164	108		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
AM BACKGROUND TRAFFIC GROWTH			4	24	10		3	22	4		6	3	4		6	4	4		
AM NON-PROJECT TRAFFIC			211	1,248	511		153	1,109	186		317	156	190		293	197	210		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Yearly Growth Rate		0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%		
PM BACKGROUND TRAFFIC GROWTH			4	22	8		2	20	4		3	1	2		5	3	2		
PM NON-PROJECT TRAFFIC			192	1,112	430		110	1,009	199		140	75	92		259	167	110		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																		
	Exiting																		
Distribution	Entering																		
	Exiting																		
Net New	Entering			38.0%															
	Exiting							11.0%											
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																		
	Exiting																		
Distribution	Entering																		
	Exiting																		
Net New	Entering			38.0%															
	Exiting							11.0%											
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New			80					21										
AM TOTAL PROJECT TRAFFIC			0	80	0		0	21	0		0	0	0		0	0	0		
AM TOTAL TRAFFIC			211	1,328	511		153	1,130	186		317	156	190		293	197	210		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																			
Project Trips	Pass - By																		
	Valet																		
	Net New			54					14										
PM TOTAL PROJECT TRAFFIC			0	54	0		0	14	0		0	0	0		0	0	0		
PM TOTAL TRAFFIC			192	1,166	430		110	1,023	199		140	75	92		259	167	110		

Appendix G

Intersection Capacity Analysis Worksheets

Existing A.M.

Timings

1: SW 184 Avenue & Pines Boulevard

Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 		 	 	
Traffic Volume (vph)	136	1735	194	168	1456	200	240	222	177	290	203	139
Future Volume (vph)	136	1735	194	168	1456	200	240	222	177	290	203	139
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	43.0	43.0	12.0	43.0	43.0	11.5	46.5	46.5	11.5	48.5	48.5
Total Split (s)	21.0	81.0	81.0	20.0	80.0	80.0	48.0	53.0	53.0	26.0	31.0	31.0
Total Split (%)	11.7%	45.0%	45.0%	11.1%	44.4%	44.4%	26.7%	29.4%	29.4%	14.4%	17.2%	17.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 13 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Splits and Phases: 1: SW 184 Avenue & Pines Boulevard

			
Ø1	Ø2 (R)	Ø3	Ø4
21 s	80 s	26 s	53 s
			
Ø5	Ø6 (R)	Ø7	Ø8
20 s	81 s	48 s	31 s

HCM 6th Signalized Intersection Summary

1: SW 184 Avenue & Pines Boulevard

Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	1735	194	168	1456	200	240	222	177	290	203	139
Future Volume (veh/h)	136	1735	194	168	1456	200	240	222	177	290	203	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	155	1972	220	191	1655	227	273	252	201	330	231	158
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	2688	824	227	2740	840	314	517	226	365	570	254
Arrive On Green	0.07	0.71	0.71	0.09	0.72	0.72	0.09	0.15	0.15	0.11	0.16	0.16
Sat Flow, veh/h	3428	5066	1552	3428	5066	1552	3428	3526	1542	3428	3526	1572
Grp Volume(v), veh/h	155	1972	220	191	1655	227	273	252	201	330	231	158
Grp Sat Flow(s),veh/h/ln	1714	1689	1552	1714	1689	1552	1714	1763	1542	1714	1763	1572
Q Serve(g_s), s	8.0	42.7	9.2	9.9	29.2	9.2	14.1	11.8	23.0	17.1	10.6	16.9
Cycle Q Clear(g_c), s	8.0	42.7	9.2	9.9	29.2	9.2	14.1	11.8	23.0	17.1	10.6	16.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	2688	824	227	2740	840	314	517	226	365	570	254
V/C Ratio(X)	0.81	0.73	0.27	0.84	0.60	0.27	0.87	0.49	0.89	0.90	0.41	0.62
Avail Cap(c_a), veh/h	267	2688	824	248	2740	840	790	911	398	371	570	254
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.3	18.7	13.8	81.2	15.7	12.9	80.7	70.6	75.3	79.5	67.7	70.3
Incr Delay (d2), s/veh	5.8	1.2	0.5	19.3	1.0	0.8	2.9	0.3	5.1	23.9	0.2	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	15.1	3.2	4.9	10.2	3.2	6.4	5.4	9.5	8.8	4.8	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.1	20.0	14.3	100.5	16.7	13.7	83.6	70.8	80.5	103.4	67.9	73.8
LnGrp LOS	F	B	B	F	B	B	F	E	F	F	E	E
Approach Vol, veh/h		2347			2073			726			719	
Approach Delay, s/veh		23.9			24.1			78.3			85.5	
Approach LOS		C			C			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.1	104.4	25.7	32.9	18.9	102.5	23.0	35.6				
Change Period (Y+Rc), s	7.0	7.0	6.5	6.5	7.0	7.0	6.5	6.5				
Max Green Setting (Gmax), s	14.0	73.0	19.5	46.5	13.0	74.0	41.5	24.5				
Max Q Clear Time (g_c+l1), s	10.0	31.2	19.1	25.0	11.9	44.7	16.1	18.9				
Green Ext Time (p_c), s	0.1	6.4	0.0	1.4	0.0	8.2	0.3	0.7				

Intersection Summary

HCM 6th Ctrl Delay 38.3
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

2: SW 186 Avenue & Pines Boulevard

Existing Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  			  						
Traffic Volume (vph)	103	1869	14	59	1665	95	22	5	110	167	5
Future Volume (vph)	103	1869	14	59	1665	95	22	5	110	167	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	2			4			8
Permitted Phases	6		6	2		2	4		4	8	
Detector Phase	1	6	6	5	2	2	4	4	4	8	8
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	37.0	37.0	11.0	39.0	39.0	52.0	52.0	52.0	56.0	56.0
Total Split (s)	26.0	112.0	112.0	16.0	102.0	102.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	14.4%	62.2%	62.2%	8.9%	56.7%	56.7%	28.9%	28.9%	28.9%	28.9%	28.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 35 (19%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 2: SW 186 Avenue & Pines Boulevard

			
Ø1	Ø2 (R)		Ø4
26 s	102 s		52 s
			
Ø5	Ø6 (R)		Ø8
16 s	112 s		52 s

HCM 6th Signalized Intersection Summary

2: SW 186 Avenue & Pines Boulevard

Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	103	1869	14	59	1665	95	22	5	110	167	5	127
Future Volume (veh/h)	103	1869	14	59	1665	95	22	5	110	167	5	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	126	2279	14	72	2030	116	27	6	134	204	6	155
Peak Hour Factor	0.82	0.82	1.00	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	187	3073	949	150	3006	916	210	43	393	220	15	375
Arrive On Green	0.05	0.81	0.81	0.04	0.79	0.79	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1767	5066	1564	1767	5066	1544	694	173	1571	1238	58	1502
Grp Volume(v), veh/h	126	2279	14	72	2030	116	33	0	134	204	0	161
Grp Sat Flow(s),veh/h/ln	1767	1689	1564	1767	1689	1544	867	0	1571	1238	0	1560
Q Serve(g_s), s	5.1	38.9	0.3	2.9	32.6	3.2	3.3	0.0	12.6	26.2	0.0	15.5
Cycle Q Clear(g_c), s	5.1	38.9	0.3	2.9	32.6	3.2	18.8	0.0	12.6	45.0	0.0	15.5
Prop In Lane	1.00		1.00	1.00		1.00	0.82		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	187	3073	949	150	3006	916	253	0	393	220	0	390
V/C Ratio(X)	0.67	0.74	0.01	0.48	0.68	0.13	0.13	0.00	0.34	0.93	0.00	0.41
Avail Cap(c_a), veh/h	303	3073	949	191	3006	916	253	0	393	220	0	390
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	10.6	6.9	20.1	11.1	8.0	62.0	0.0	55.3	78.4	0.0	56.5
Incr Delay (d2), s/veh	1.6	1.7	0.0	0.7	1.0	0.2	0.1	0.0	0.2	40.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	11.5	0.1	1.2	9.9	1.1	1.3	0.0	5.1	12.1	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	12.3	6.9	20.7	12.1	8.3	62.1	0.0	55.5	118.8	0.0	56.7
LnGrp LOS	C	B	A	C	B	A	E	A	E	F	A	E
Approach Vol, veh/h		2419			2218			167			365	
Approach Delay, s/veh		12.8			12.2			56.8			91.4	
Approach LOS		B			B			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	113.8		52.0	11.8	116.2		52.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	19.0	95.0		45.0	9.0	105.0		45.0				
Max Q Clear Time (g_c+l1), s	7.1	34.6		20.8	4.9	40.9		47.0				
Green Ext Time (p_c), s	0.1	31.5		0.3	0.0	38.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay 19.5
 HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC

3: East Driveway & Pines Boulevard

Existing Conditions

Intersection

Int Delay, s/veh 2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑↑		↑
Traffic Vol, veh/h	1325	41	0	2003	0	525
Future Vol, veh/h	1325	41	0	2003	0	525
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1636	51	0	2473	0	648

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	966	-	-	-
HCM Lane V/C Ratio	0.671	-	-	-
HCM Control Delay (s)	16	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	5.4	-	-	-

HCM 6th TWSC

4: West/SmartStop Driveway & Pines Boulevard

Existing Conditions

Intersection

Int Delay, s/veh 73.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		↑
Traffic Vol, veh/h	1559	166	296	1554	0	0
Future Vol, veh/h	1559	166	296	1554	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1813	193	344	1807	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2006
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.36
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.13
Pot Cap-1 Maneuver	-	-	~ 123
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ 123
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	141.9	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	~ 123	-
HCM Lane V/C Ratio	-	-	-	2.798	-
HCM Control Delay (s)	0	-	-	\$ 886.7	-
HCM Lane LOS	A	-	-	F	-
HCM 95th %tile Q(veh)	-	-	-	31.7	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings

5: SW 196 Avenue & Pines Boulevard

Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 	 	
Traffic Volume (vph)	207	1224	501	150	1087	182	311	153	186	287	193	206
Future Volume (vph)	207	1224	501	150	1087	182	311	153	186	287	193	206
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	44.0	44.0	12.0	44.0	44.0	11.5	50.0	50.0	11.5	50.0	50.0
Total Split (s)	25.0	77.0	77.0	25.0	77.0	77.0	37.0	43.0	43.0	35.0	41.0	41.0
Total Split (%)	13.9%	42.8%	42.8%	13.9%	42.8%	42.8%	20.6%	23.9%	23.9%	19.4%	22.8%	22.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 120 (67%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 5: SW 196 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	77 s	35 s	43 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
25 s	77 s	37 s	41 s

HCM 6th Signalized Intersection Summary

5: SW 196 Avenue & Pines Boulevard

Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 		
Traffic Volume (veh/h)	207	1224	501	150	1087	182	311	153	186	287	193	206
Future Volume (veh/h)	207	1224	501	150	1087	182	311	153	186	287	193	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	230	1360	557	167	1208	202	346	170	207	319	214	229
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	267	2596	805	205	1743	767	389	598	262	361	300	253
Arrive On Green	0.10	0.68	0.68	0.08	0.66	0.49	0.11	0.17	0.17	0.11	0.16	0.16
Sat Flow, veh/h	3428	5066	1571	3428	3526	1551	3428	3526	1546	3428	1856	1567
Grp Volume(v), veh/h	230	1360	557	167	1208	202	346	170	207	319	214	229
Grp Sat Flow(s),veh/h/ln	1714	1689	1571	1714	1763	1551	1714	1763	1546	1714	1856	1567
Q Serve(g_s), s	11.9	23.9	38.5	8.6	38.8	13.6	17.9	7.6	23.1	16.5	19.7	25.8
Cycle Q Clear(g_c), s	11.9	23.9	38.5	8.6	38.8	13.6	17.9	7.6	23.1	16.5	19.7	25.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	2596	805	205	1743	767	389	598	262	361	300	253
V/C Ratio(X)	0.86	0.52	0.69	0.82	0.69	0.26	0.89	0.28	0.79	0.88	0.71	0.91
Avail Cap(c_a), veh/h	343	2596	805	343	1743	767	581	705	309	543	350	296
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.7	17.8	20.1	81.9	22.2	26.5	78.7	65.2	71.7	79.4	71.5	74.1
Incr Delay (d2), s/veh	13.7	0.8	4.9	3.0	2.3	0.8	8.2	0.1	9.2	7.9	4.1	25.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	8.7	13.8	3.9	15.3	5.4	8.4	3.5	9.9	7.8	9.8	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.4	18.5	24.9	84.9	24.5	27.3	86.8	65.3	80.9	87.3	75.6	99.1
LnGrp LOS	F	B	C	F	C	C	F	E	F	F	E	F
Approach Vol, veh/h		2147			1577			723			762	
Approach Delay, s/veh		28.2			31.3			80.1			87.6	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	96.0	25.5	37.5	17.7	99.3	26.9	36.1				
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	7.0				
Max Green Setting (Gmax), s	18.0	70.0	28.5	36.0	18.0	70.0	30.5	34.0				
Max Q Clear Time (g_c+l1), s	13.9	40.8	18.5	25.1	10.6	40.5	19.9	27.8				
Green Ext Time (p_c), s	0.1	11.9	0.5	0.8	0.1	15.6	0.5	0.7				

Intersection Summary

HCM 6th Ctrl Delay 45.0
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Future Background A.M.

Timings

1: SW 184 Avenue & Pines Boulevard

Future Background Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 		 	 	
Traffic Volume (vph)	139	1770	198	171	1485	204	245	226	181	296	207	142
Future Volume (vph)	139	1770	198	171	1485	204	245	226	181	296	207	142
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	43.0	43.0	12.0	43.0	43.0	11.5	46.5	46.5	11.5	48.5	48.5
Total Split (s)	21.0	81.0	81.0	20.0	80.0	80.0	48.0	53.0	53.0	26.0	31.0	31.0
Total Split (%)	11.7%	45.0%	45.0%	11.1%	44.4%	44.4%	26.7%	29.4%	29.4%	14.4%	17.2%	17.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 13 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Splits and Phases: 1: SW 184 Avenue & Pines Boulevard

			
Ø1	Ø2 (R)	Ø3	Ø4
21 s	80 s	26 s	53 s
			
Ø5	Ø6 (R)	Ø7	Ø8
20 s	81 s	48 s	31 s

HCM 6th Signalized Intersection Summary

1: SW 184 Avenue & Pines Boulevard

Future Background Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	1770	198	171	1485	204	245	226	181	296	207	142
Future Volume (veh/h)	139	1770	198	171	1485	204	245	226	181	296	207	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	158	2011	225	194	1688	232	278	257	206	336	235	161
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	195	2659	815	230	2711	831	319	529	231	370	582	260
Arrive On Green	0.08	0.70	0.70	0.09	0.71	0.71	0.09	0.15	0.15	0.11	0.17	0.17
Sat Flow, veh/h	3428	5066	1552	3428	5066	1552	3428	3526	1542	3428	3526	1572
Grp Volume(v), veh/h	158	2011	225	194	1688	232	278	257	206	336	235	161
Grp Sat Flow(s),veh/h/ln	1714	1689	1552	1714	1689	1552	1714	1763	1542	1714	1763	1572
Q Serve(g_s), s	8.2	45.7	9.8	10.0	31.1	9.7	14.4	12.0	23.6	17.4	10.7	17.1
Cycle Q Clear(g_c), s	8.2	45.7	9.8	10.0	31.1	9.7	14.4	12.0	23.6	17.4	10.7	17.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	2659	815	230	2711	831	319	529	231	370	582	260
V/C Ratio(X)	0.81	0.76	0.28	0.84	0.62	0.28	0.87	0.49	0.89	0.91	0.40	0.62
Avail Cap(c_a), veh/h	267	2659	815	248	2711	831	790	911	398	371	582	260
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.66	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.2	19.8	14.4	81.1	16.5	13.5	80.6	70.1	75.0	79.4	67.2	69.9
Incr Delay (d2), s/veh	6.1	1.4	0.6	20.0	1.1	0.8	2.9	0.3	6.3	24.6	0.2	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	16.3	3.4	5.0	10.9	3.4	6.6	5.5	9.8	9.0	4.9	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.4	21.2	14.9	101.0	17.6	14.3	83.5	70.4	81.3	104.0	67.4	73.2
LnGrp LOS	F	C	B	F	B	B	F	E	F	F	E	E
Approach Vol, veh/h		2394			2114			741			732	
Approach Delay, s/veh		25.0			24.9			78.3			85.5	
Approach LOS		C			C			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	103.3	25.9	33.5	19.1	101.5	23.2	36.2				
Change Period (Y+Rc), s	7.0	7.0	6.5	6.5	7.0	7.0	6.5	6.5				
Max Green Setting (Gmax), s	14.0	73.0	19.5	46.5	13.0	74.0	41.5	24.5				
Max Q Clear Time (g_c+l1), s	10.2	33.1	19.4	25.6	12.0	47.7	16.4	19.1				
Green Ext Time (p_c), s	0.1	6.6	0.0	1.4	0.0	8.2	0.3	0.6				

Intersection Summary

HCM 6th Ctrl Delay 39.0
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

2: SW 186 Avenue & Pines Boulevard

Future Background Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  			  						
Traffic Volume (vph)	105	1906	14	60	1698	97	22	5	112	170	5
Future Volume (vph)	105	1906	14	60	1698	97	22	5	112	170	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	2			4			8
Permitted Phases	6		6	2		2	4		4	8	
Detector Phase	1	6	6	5	2	2	4	4	4	8	8
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	37.0	37.0	11.0	39.0	39.0	52.0	52.0	52.0	56.0	56.0
Total Split (s)	26.0	112.0	112.0	16.0	102.0	102.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	14.4%	62.2%	62.2%	8.9%	56.7%	56.7%	28.9%	28.9%	28.9%	28.9%	28.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 35 (19%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 2: SW 186 Avenue & Pines Boulevard

			
Ø1	Ø2 (R)		Ø4
26 s	102 s		52 s
			
Ø5	Ø6 (R)		Ø8
16 s	112 s		52 s

HCM 6th Signalized Intersection Summary

2: SW 186 Avenue & Pines Boulevard

Future Background Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	105	1906	14	60	1698	97	22	5	112	170	5	130
Future Volume (veh/h)	105	1906	14	60	1698	97	22	5	112	170	5	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	128	2324	14	73	2071	118	27	6	137	207	6	159
Peak Hour Factor	0.82	0.82	1.00	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	183	3072	948	146	3003	916	207	42	393	216	14	376
Arrive On Green	0.05	0.81	0.81	0.04	0.79	0.79	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1767	5066	1564	1767	5066	1544	682	170	1571	1235	57	1503
Grp Volume(v), veh/h	128	2324	14	73	2071	118	33	0	137	207	0	165
Grp Sat Flow(s),veh/h/ln	1767	1689	1564	1767	1689	1544	852	0	1571	1235	0	1560
Q Serve(g_s), s	5.2	41.0	0.3	3.0	34.1	3.2	3.3	0.0	12.9	25.7	0.0	16.0
Cycle Q Clear(g_c), s	5.2	41.0	0.3	3.0	34.1	3.2	19.3	0.0	12.9	45.0	0.0	16.0
Prop In Lane	1.00		1.00	1.00		1.00	0.82		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	183	3072	948	146	3003	916	249	0	393	216	0	390
V/C Ratio(X)	0.70	0.76	0.01	0.50	0.69	0.13	0.13	0.00	0.35	0.96	0.00	0.42
Avail Cap(c_a), veh/h	298	3072	948	186	3003	916	249	0	393	216	0	390
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.8	10.8	6.9	21.2	11.4	8.1	62.3	0.0	55.5	79.0	0.0	56.6
Incr Delay (d2), s/veh	1.8	1.8	0.0	0.8	1.0	0.2	0.1	0.0	0.2	48.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	12.1	0.1	1.2	10.5	1.2	1.3	0.0	5.2	12.7	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	12.6	6.9	22.0	12.4	8.3	62.4	0.0	55.7	127.4	0.0	56.9
LnGrp LOS	C	B	A	C	B	A	E	A	E	F	A	E
Approach Vol, veh/h		2466			2262			170			372	
Approach Delay, s/veh		13.3			12.5			57.0			96.1	
Approach LOS		B			B			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.3	113.7		52.0	11.8	116.2		52.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	19.0	95.0		45.0	9.0	105.0		45.0				
Max Q Clear Time (g_c+I1), s	7.2	36.1		21.3	5.0	43.0		47.0				
Green Ext Time (p_c), s	0.1	32.2		0.3	0.0	38.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC

3: East Driveway & Pines Boulevard

Future Background Conditions

Intersection

Int Delay, s/veh 2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑↑		↑
Traffic Vol, veh/h	1351	42	0	2043	0	535
Future Vol, veh/h	1351	42	0	2043	0	535
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1668	52	0	2522	0	660

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	954	-	-	-
HCM Lane V/C Ratio	0.692	-	-	-
HCM Control Delay (s)	16.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	5.8	-	-	-

HCM 6th TWSC

4: West/SmartStop Driveway & Pines Boulevard

Future Background Conditions

Intersection

Int Delay, s/veh 81.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		↑
Traffic Vol, veh/h	1590	169	302	1585	0	0
Future Vol, veh/h	1590	169	302	1585	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1849	197	351	1843	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0 2046	0 - 925
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	5.36	- 3.7
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.13	- 2
Pot Cap-1 Maneuver	-	~ 117	0 890
Stage 1	-	-	0 -
Stage 2	-	-	0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	~ 117	- 890
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	156.9	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	- ~ 117	-	-
HCM Lane V/C Ratio	-	-	- 3.001	-	-
HCM Control Delay (s)	0	-	\$ 980.4	-	-
HCM Lane LOS	A	-	- F	-	-
HCM 95th %tile Q(veh)	-	-	- 33.2	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings

5: SW 196 Avenue & Pines Boulevard

Future Background Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 		
Traffic Volume (vph)	211	1248	511	153	1109	186	317	156	190	293	197	210
Future Volume (vph)	211	1248	511	153	1109	186	317	156	190	293	197	210
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	44.0	44.0	12.0	44.0	44.0	11.5	50.0	50.0	11.5	50.0	50.0
Total Split (s)	25.0	77.0	77.0	25.0	77.0	77.0	37.0	43.0	43.0	35.0	41.0	41.0
Total Split (%)	13.9%	42.8%	42.8%	13.9%	42.8%	42.8%	20.6%	23.9%	23.9%	19.4%	22.8%	22.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 120 (67%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 5: SW 196 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	77 s	35 s	43 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
25 s	77 s	37 s	41 s

HCM 6th Signalized Intersection Summary

5: SW 196 Avenue & Pines Boulevard

Future Background Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 	 	
Traffic Volume (veh/h)	211	1248	511	153	1109	186	317	156	190	293	197	210
Future Volume (veh/h)	211	1248	511	153	1109	186	317	156	190	293	197	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	234	1387	568	170	1232	207	352	173	211	326	219	233
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	271	2572	797	208	1725	759	395	605	265	368	304	257
Arrive On Green	0.10	0.68	0.68	0.08	0.65	0.49	0.12	0.17	0.17	0.11	0.16	0.16
Sat Flow, veh/h	3428	5066	1571	3428	3526	1551	3428	3526	1546	3428	1856	1567
Grp Volume(v), veh/h	234	1387	568	170	1232	207	352	173	211	326	219	233
Grp Sat Flow(s),veh/h/ln	1714	1689	1571	1714	1763	1551	1714	1763	1546	1714	1856	1567
Q Serve(g_s), s	12.1	25.2	40.7	8.8	41.0	14.2	18.2	7.7	23.6	16.9	20.1	26.3
Cycle Q Clear(g_c), s	12.1	25.2	40.7	8.8	41.0	14.2	18.2	7.7	23.6	16.9	20.1	26.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	2572	797	208	1725	759	395	605	265	368	304	257
V/C Ratio(X)	0.86	0.54	0.71	0.82	0.71	0.27	0.89	0.29	0.80	0.88	0.72	0.91
Avail Cap(c_a), veh/h	343	2572	797	343	1725	759	581	705	309	543	350	296
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.6	18.5	21.0	81.8	23.2	27.1	78.5	65.0	71.5	79.2	71.4	73.9
Incr Delay (d2), s/veh	14.3	0.8	5.4	3.0	2.6	0.9	8.7	0.1	9.9	8.5	4.6	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	9.2	14.7	3.9	16.3	5.6	8.6	3.5	10.1	8.0	10.1	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.9	19.3	26.4	84.8	25.8	28.0	87.2	65.1	81.4	87.8	75.9	99.9
LnGrp LOS	F	B	C	F	C	C	F	E	F	F	E	F
Approach Vol, veh/h		2189			1609			736			778	
Approach Delay, s/veh		29.1			32.3			80.3			88.1	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.2	95.1	25.8	37.9	17.9	98.4	27.2	36.5				
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	7.0				
Max Green Setting (Gmax), s	18.0	70.0	28.5	36.0	18.0	70.0	30.5	34.0				
Max Q Clear Time (g_c+l1), s	14.1	43.0	18.9	25.6	10.8	42.7	20.2	28.3				
Green Ext Time (p_c), s	0.1	11.8	0.5	0.8	0.1	15.3	0.5	0.7				

Intersection Summary

HCM 6th Ctrl Delay 45.8
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Future Total A.M.

Timings

1: SW 184 Avenue & Pines Boulevard

Future Total Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	1936	198	171	1616	204	245	226	181	296	207	142
Future Volume (vph)	139	1936	198	171	1616	204	245	226	181	296	207	142
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	43.0	43.0	12.0	43.0	43.0	11.5	46.5	46.5	11.5	48.5	48.5
Total Split (s)	21.0	81.0	81.0	20.0	80.0	80.0	48.0	53.0	53.0	26.0	31.0	31.0
Total Split (%)	11.7%	45.0%	45.0%	11.1%	44.4%	44.4%	26.7%	29.4%	29.4%	14.4%	17.2%	17.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 13 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Splits and Phases: 1: SW 184 Avenue & Pines Boulevard

								
Ø1	Ø2 (R)		Ø3	Ø4				
21 s	80 s		26 s	53 s				
								
Ø5	Ø6 (R)		Ø7	Ø8				
20 s	81 s		48 s	31 s				

HCM 6th Signalized Intersection Summary

1: SW 184 Avenue & Pines Boulevard

Future Total Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 		 	 	
Traffic Volume (veh/h)	139	1936	198	171	1616	204	245	226	181	296	207	142
Future Volume (veh/h)	139	1936	198	171	1616	204	245	226	181	296	207	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	158	2200	225	194	1836	232	278	257	206	336	235	161
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	195	2659	815	230	2711	831	319	529	231	370	582	260
Arrive On Green	0.08	0.70	0.70	0.09	0.71	0.71	0.09	0.15	0.15	0.11	0.17	0.17
Sat Flow, veh/h	3428	5066	1552	3428	5066	1552	3428	3526	1542	3428	3526	1572
Grp Volume(v), veh/h	158	2200	225	194	1836	232	278	257	206	336	235	161
Grp Sat Flow(s),veh/h/ln	1714	1689	1552	1714	1689	1552	1714	1763	1542	1714	1763	1572
Q Serve(g_s), s	8.2	55.9	9.8	10.0	36.3	9.7	14.4	12.0	23.6	17.4	10.7	17.1
Cycle Q Clear(g_c), s	8.2	55.9	9.8	10.0	36.3	9.7	14.4	12.0	23.6	17.4	10.7	17.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	2659	815	230	2711	831	319	529	231	370	582	260
V/C Ratio(X)	0.81	0.83	0.28	0.84	0.68	0.28	0.87	0.49	0.89	0.91	0.40	0.62
Avail Cap(c_a), veh/h	267	2659	815	248	2711	831	790	911	398	371	582	260
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.2	21.3	14.4	81.1	17.3	13.5	80.6	70.1	75.0	79.4	67.2	69.9
Incr Delay (d2), s/veh	5.5	1.9	0.5	20.0	1.4	0.8	2.9	0.3	6.3	24.6	0.2	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	20.0	3.4	5.0	12.8	3.4	6.6	5.5	9.8	9.0	4.9	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.7	23.2	14.9	101.0	18.7	14.3	83.5	70.4	81.3	104.0	67.4	73.2
LnGrp LOS	F	C	B	F	B	B	F	E	F	F	E	E
Approach Vol, veh/h		2583			2262			741			732	
Approach Delay, s/veh		26.4			25.3			78.3			85.5	
Approach LOS		C			C			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	103.3	25.9	33.5	19.1	101.5	23.2	36.2				
Change Period (Y+Rc), s	7.0	7.0	6.5	6.5	7.0	7.0	6.5	6.5				
Max Green Setting (Gmax), s	14.0	73.0	19.5	46.5	13.0	74.0	41.5	24.5				
Max Q Clear Time (g_c+l1), s	10.2	38.3	19.4	25.6	12.0	57.9	16.4	19.1				
Green Ext Time (p_c), s	0.1	7.4	0.0	1.4	0.0	7.8	0.3	0.6				

Intersection Summary

HCM 6th Ctrl Delay 39.0
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

2: SW 186 Avenue & Pines Boulevard

Future Total Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  			  						
Traffic Volume (vph)	126	2072	14	60	1829	97	22	5	112	170	5
Future Volume (vph)	126	2072	14	60	1829	97	22	5	112	170	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	2			4			8
Permitted Phases	6		6	2		2	4		4	8	
Detector Phase	1	6	6	5	2	2	4	4	4	8	8
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	37.0	37.0	11.0	39.0	39.0	52.0	52.0	52.0	56.0	56.0
Total Split (s)	26.0	112.0	112.0	16.0	102.0	102.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	14.4%	62.2%	62.2%	8.9%	56.7%	56.7%	28.9%	28.9%	28.9%	28.9%	28.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 35 (19%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 2: SW 186 Avenue & Pines Boulevard

								
Ø1	Ø2 (R)					Ø4		
26 s	102 s					52 s		
								
Ø5	Ø6 (R)					Ø8		
16 s	112 s					52 s		

HCM 6th Signalized Intersection Summary

2: SW 186 Avenue & Pines Boulevard

Future Total Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	126	2072	14	60	1829	97	22	5	112	170	5	130
Future Volume (veh/h)	126	2072	14	60	1829	97	22	5	112	170	5	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	154	2527	14	73	2230	118	27	6	137	207	6	159
Peak Hour Factor	0.82	0.82	1.00	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	177	3070	948	128	2969	905	207	42	393	216	14	376
Arrive On Green	0.06	0.81	0.81	0.04	0.78	0.78	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1767	5066	1564	1767	5066	1544	682	170	1571	1235	57	1503
Grp Volume(v), veh/h	154	2527	14	73	2230	118	33	0	137	207	0	165
Grp Sat Flow(s),veh/h/ln	1767	1689	1564	1767	1689	1544	852	0	1571	1235	0	1560
Q Serve(g_s), s	6.4	51.7	0.3	3.0	42.1	3.4	3.3	0.0	12.9	25.7	0.0	16.0
Cycle Q Clear(g_c), s	6.4	51.7	0.3	3.0	42.1	3.4	19.3	0.0	12.9	45.0	0.0	16.0
Prop In Lane	1.00		1.00	1.00		1.00	0.82		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	177	3070	948	128	2969	905	249	0	393	216	0	390
V/C Ratio(X)	0.87	0.82	0.01	0.57	0.75	0.13	0.13	0.00	0.35	0.96	0.00	0.42
Avail Cap(c_a), veh/h	280	3070	948	168	2969	905	249	0	393	216	0	390
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.5	11.9	6.9	28.9	12.8	8.6	62.3	0.0	55.5	79.0	0.0	56.6
Incr Delay (d2), s/veh	10.2	2.6	0.0	1.1	1.3	0.2	0.1	0.0	0.2	48.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	15.4	0.1	1.8	13.2	1.2	1.3	0.0	5.2	12.7	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	14.5	6.9	30.0	14.1	8.8	62.4	0.0	55.7	127.4	0.0	56.9
LnGrp LOS	D	B	A	C	B	A	E	A	E	F	A	E
Approach Vol, veh/h		2695			2421			170			372	
Approach Delay, s/veh		16.1			14.4			57.0			96.1	
Approach LOS		B			B			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	112.5		52.0	11.9	116.1		52.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	19.0	95.0		45.0	9.0	105.0		45.0				
Max Q Clear Time (g_c+l1), s	8.4	44.1		21.3	5.0	53.7		47.0				
Green Ext Time (p_c), s	0.1	33.1		0.3	0.0	38.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC

3: East Driveway & Pines Boulevard

Future Total Conditions

Intersection

Int Delay, s/veh 6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑↑		↑
Traffic Vol, veh/h	1351	48	0	2195	0	722
Future Vol, veh/h	1351	48	0	2195	0	722
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1668	59	0	2710	0	891

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	36.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	954	-	-	-
HCM Lane V/C Ratio	0.934	-	-	-
HCM Control Delay (s)	36.5	-	-	-
HCM Lane LOS	E	-	-	-
HCM 95th %tile Q(veh)	14.8	-	-	-

HCM 6th TWSC

4: West/SmartStop Driveway & Pines Boulevard

Future Total Conditions

Intersection

Int Delay, s/veh 199.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		↑
Traffic Vol, veh/h	1596	243	433	1606	0	0
Future Vol, veh/h	1596	243	433	1606	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1856	283	503	1867	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2139
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.36
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.13
Pot Cap-1 Maneuver	-	-	~ 105
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ 105
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	\$ 380	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	~ 105	-
HCM Lane V/C Ratio	-	-	-	4.795	-
HCM Control Delay (s)	0	-	\$ 1789.4	-	-
HCM Lane LOS	A	-	-	F	-
HCM 95th %tile Q(veh)	-	-	-	53.4	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings

5: SW 196 Avenue & Pines Boulevard

Future Total Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 	 	
Traffic Volume (vph)	211	1328	511	153	1130	186	317	156	190	293	197	210
Future Volume (vph)	211	1328	511	153	1130	186	317	156	190	293	197	210
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	44.0	44.0	12.0	44.0	44.0	11.5	50.0	50.0	11.5	50.0	50.0
Total Split (s)	25.0	77.0	77.0	25.0	77.0	77.0	37.0	43.0	43.0	35.0	41.0	41.0
Total Split (%)	13.9%	42.8%	42.8%	13.9%	42.8%	42.8%	20.6%	23.9%	23.9%	19.4%	22.8%	22.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 120 (67%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 5: SW 196 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	77 s	35 s	43 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
25 s	77 s	37 s	41 s

HCM 6th Signalized Intersection Summary

5: SW 196 Avenue & Pines Boulevard

Future Total Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	1328	511	153	1130	186	317	156	190	293	197	210
Future Volume (veh/h)	211	1328	511	153	1130	186	317	156	190	293	197	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	234	1476	568	170	1256	207	352	173	211	326	219	233
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	271	2572	797	208	1725	759	395	605	265	368	304	257
Arrive On Green	0.10	0.68	0.68	0.08	0.65	0.49	0.12	0.17	0.17	0.11	0.16	0.16
Sat Flow, veh/h	3428	5066	1571	3428	3526	1551	3428	3526	1546	3428	1856	1567
Grp Volume(v), veh/h	234	1476	568	170	1256	207	352	173	211	326	219	233
Grp Sat Flow(s),veh/h/ln	1714	1689	1571	1714	1763	1551	1714	1763	1546	1714	1856	1567
Q Serve(g_s), s	12.1	27.8	40.7	8.8	42.6	14.2	18.2	7.7	23.6	16.9	20.1	26.3
Cycle Q Clear(g_c), s	12.1	27.8	40.7	8.8	42.6	14.2	18.2	7.7	23.6	16.9	20.1	26.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	2572	797	208	1725	759	395	605	265	368	304	257
V/C Ratio(X)	0.86	0.57	0.71	0.82	0.73	0.27	0.89	0.29	0.80	0.88	0.72	0.91
Avail Cap(c_a), veh/h	343	2572	797	343	1725	759	581	705	309	543	350	296
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.6	18.9	21.0	81.8	23.5	27.1	78.5	65.0	71.5	79.2	71.4	73.9
Incr Delay (d2), s/veh	14.3	0.9	5.4	3.0	2.7	0.9	8.7	0.1	9.9	8.5	4.6	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	10.2	14.7	3.9	16.9	5.6	8.6	3.5	10.1	8.0	10.1	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.9	19.8	26.4	84.8	26.2	28.0	87.2	65.1	81.4	87.8	75.9	99.9
LnGrp LOS	F	B	C	F	C	C	F	E	F	F	E	F
Approach Vol, veh/h		2278			1633			736			778	
Approach Delay, s/veh		29.1			32.5			80.3			88.1	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.2	95.1	25.8	37.9	17.9	98.4	27.2	36.5				
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	7.0				
Max Green Setting (Gmax), s	18.0	70.0	28.5	36.0	18.0	70.0	30.5	34.0				
Max Q Clear Time (g_c+l1), s	14.1	44.6	18.9	25.6	10.8	42.7	20.2	28.3				
Green Ext Time (p_c), s	0.1	11.7	0.5	0.8	0.1	16.2	0.5	0.7				

Intersection Summary

HCM 6th Ctrl Delay 45.5
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Existing P.M.

Timings

1: SW 184 Avenue & Pines Boulevard

Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 		 	 	
Traffic Volume (vph)	176	1325	216	282	1256	238	288	216	222	286	238	125
Future Volume (vph)	176	1325	216	282	1256	238	288	216	222	286	238	125
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	43.0	43.0	12.0	43.0	43.0	11.5	46.5	46.5	11.5	48.5	48.5
Total Split (s)	24.0	60.0	60.0	27.0	63.0	63.0	41.0	38.0	38.0	35.0	32.0	32.0
Total Split (%)	15.0%	37.5%	37.5%	16.9%	39.4%	39.4%	25.6%	23.8%	23.8%	21.9%	20.0%	20.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 151 (94%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Splits and Phases: 1: SW 184 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	63 s	35 s	38 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
27 s	60 s	41 s	32 s

HCM 6th Signalized Intersection Summary

1: SW 184 Avenue & Pines Boulevard

Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	1325	216	282	1256	238	288	216	222	286	238	125
Future Volume (veh/h)	176	1325	216	282	1256	238	288	216	222	286	238	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	189	1425	232	303	1351	256	310	232	239	308	256	134
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	231	2329	713	344	2496	774	356	593	264	353	590	263
Arrive On Green	0.09	0.61	0.61	0.13	0.66	0.66	0.10	0.17	0.17	0.10	0.17	0.17
Sat Flow, veh/h	3428	5066	1551	3428	5066	1571	3428	3526	1570	3428	3526	1570
Grp Volume(v), veh/h	189	1425	232	303	1351	256	310	232	239	308	256	134
Grp Sat Flow(s),veh/h/ln	1714	1689	1551	1714	1689	1571	1714	1763	1570	1714	1763	1570
Q Serve(g_s), s	8.7	27.9	11.6	13.9	22.8	11.5	14.3	9.4	23.9	14.2	10.4	12.4
Cycle Q Clear(g_c), s	8.7	27.9	11.6	13.9	22.8	11.5	14.3	9.4	23.9	14.2	10.4	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	2329	713	344	2496	774	356	593	264	353	590	263
V/C Ratio(X)	0.82	0.61	0.33	0.88	0.54	0.33	0.87	0.39	0.91	0.87	0.43	0.51
Avail Cap(c_a), veh/h	364	2329	713	429	2496	774	739	694	309	611	590	263
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	22.2	19.0	68.4	17.9	16.0	70.6	59.3	65.3	70.7	59.8	60.7
Incr Delay (d2), s/veh	3.2	1.0	1.0	14.1	0.8	1.1	2.6	0.2	24.3	2.9	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	10.4	4.1	6.6	8.2	4.1	6.4	4.2	11.4	6.4	4.7	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	23.2	20.1	82.5	18.8	17.1	73.2	59.4	89.6	73.6	60.0	61.4
LnGrp LOS	E	C	C	F	B	B	E	E	F	E	E	E
Approach Vol, veh/h		1846			1910			781			698	
Approach Delay, s/veh		28.1			28.6			74.2			66.3	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.8	85.8	23.0	33.4	23.1	80.6	23.1	33.3				
Change Period (Y+Rc), s	7.0	7.0	6.5	6.5	7.0	7.0	6.5	6.5				
Max Green Setting (Gmax), s	17.0	56.0	28.5	31.5	20.0	53.0	34.5	25.5				
Max Q Clear Time (g_c+I1), s	10.7	24.8	16.2	25.9	15.9	29.9	16.3	14.4				
Green Ext Time (p_c), s	0.1	4.6	0.3	0.8	0.2	4.8	0.4	1.0				

Intersection Summary

HCM 6th Ctrl Delay 40.3
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

2: SW 186 Avenue & Pines Boulevard

Existing Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  			  						
Traffic Volume (vph)	97	1668	15	121	1413	157	11	6	58	103	6
Future Volume (vph)	97	1668	15	121	1413	157	11	6	58	103	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	2			4			8
Permitted Phases	6		6	2		2	4		4	8	
Detector Phase	1	6	6	5	2	2	4	4	4	8	8
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	37.0	37.0	11.0	39.0	39.0	52.0	52.0	52.0	56.0	56.0
Total Split (s)	16.0	82.0	82.0	25.0	91.0	91.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	10.0%	51.3%	51.3%	15.6%	56.9%	56.9%	33.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 3 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 2: SW 186 Avenue & Pines Boulevard

					
Ø1	Ø2 (R)			Ø4	
16 s	91 s			53 s	
					
Ø5	Ø6 (R)			Ø8	
25 s	82 s			53 s	

HCM 6th Signalized Intersection Summary

2: SW 186 Avenue & Pines Boulevard

Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	97	1668	15	121	1413	157	11	6	58	103	6	52
Future Volume (veh/h)	97	1668	15	121	1413	157	11	6	58	103	6	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	1813	16	132	1536	171	12	7	63	112	7	57
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	285	3499	1085	268	3525	1093	137	72	224	183	25	203
Arrive On Green	0.04	0.92	0.92	0.05	0.93	0.93	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1767	5066	1571	1767	5066	1571	702	504	1569	1318	175	1422
Grp Volume(v), veh/h	105	1813	16	132	1536	171	19	0	63	112	0	64
Grp Sat Flow(s),veh/h/ln	1767	1689	1571	1767	1689	1571	1207	0	1569	1318	0	1596
Q Serve(g_s), s	2.9	8.9	0.1	3.6	6.1	1.5	0.4	0.0	5.7	13.3	0.0	5.7
Cycle Q Clear(g_c), s	2.9	8.9	0.1	3.6	6.1	1.5	6.1	0.0	5.7	19.3	0.0	5.7
Prop In Lane	1.00		1.00	1.00		1.00	0.63		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	285	3499	1085	268	3525	1093	209	0	224	183	0	228
V/C Ratio(X)	0.37	0.52	0.01	0.49	0.44	0.16	0.09	0.00	0.28	0.61	0.00	0.28
Avail Cap(c_a), veh/h	331	3499	1085	404	3525	1093	423	0	451	374	0	459
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.7	2.4	2.0	6.9	2.0	1.9	60.2	0.0	61.3	70.0	0.0	61.3
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.4	0.3	0.3	0.1	0.0	0.3	1.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.1	0.1	1.3	1.5	0.5	0.7	0.0	2.3	4.6	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	2.9	2.0	7.4	2.4	2.1	60.2	0.0	61.5	71.3	0.0	61.5
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1934			1839			82			176	
Approach Delay, s/veh		3.1			2.7			61.2			67.7	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	118.3		29.8	12.7	117.5		29.8				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	9.0	84.0		46.0	18.0	75.0		46.0				
Max Q Clear Time (g_c+l1), s	4.9	8.1		8.1	5.6	10.9		21.3				
Green Ext Time (p_c), s	0.0	20.8		0.2	0.1	25.4		0.4				

Intersection Summary

HCM 6th Ctrl Delay	6.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC

3: East Driveway & Pines Boulevard

Existing Conditions

Intersection

Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑	↑		↑↑↑↑		↑
Traffic Vol, veh/h	1519	18	0	1493	0	257
Future Vol, veh/h	1519	18	0	1493	0	257
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1669	20	0	1641	0	282

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 835
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 3.7
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 2
Pot Cap-1 Maneuver	-	-	0 - 0 954
Stage 1	-	-	0 - 0
Stage 2	-	-	0 - 0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 954
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	954	-	-	-
HCM Lane V/C Ratio	0.296	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	1.2	-	-	-

HCM 6th TWSC

4: West/SmartStop Driveway & Pines Boulevard

Existing Conditions

Intersection

Int Delay, s/veh 4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		↑
Traffic Vol, veh/h	1526	69	128	1361	0	2
Future Vol, veh/h	1526	69	128	1361	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1734	78	145	1547	0	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1812
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.36
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.13
Pot Cap-1 Maneuver	-	-	154
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	154
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	10	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	930	-	-	154	-
HCM Lane V/C Ratio	0.002	-	-	0.945	-
HCM Control Delay (s)	8.9	-	-	116.3	-
HCM Lane LOS	A	-	-	F	-
HCM 95th %tile Q(veh)	0	-	-	6.9	-

Timings

5: SW 196 Avenue & Pines Boulevard

Existing Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	1090	422	108	989	195	137	74	90	254	164	108
Future Volume (vph)	188	1090	422	108	989	195	137	74	90	254	164	108
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	44.0	44.0	12.0	44.0	44.0	11.5	50.0	50.0	11.5	50.0	50.0
Total Split (s)	40.0	54.0	54.0	40.0	54.0	54.0	28.0	36.0	36.0	30.0	38.0	38.0
Total Split (%)	25.0%	33.8%	33.8%	25.0%	33.8%	33.8%	17.5%	22.5%	22.5%	18.8%	23.8%	23.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 83 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 5: SW 196 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
40 s	54 s	30 s	36 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
40 s	54 s	28 s	38 s

HCM 6th Signalized Intersection Summary

5: SW 196 Avenue & Pines Boulevard

Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 	 	
Traffic Volume (veh/h)	188	1090	422	108	989	195	137	74	90	254	164	108
Future Volume (veh/h)	188	1090	422	108	989	195	137	74	90	254	164	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	221	1282	496	127	1164	229	161	87	106	299	193	127
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	265	2998	931	170	1989	887	206	303	135	345	235	196
Arrive On Green	0.10	0.79	0.79	0.07	0.75	0.56	0.06	0.09	0.09	0.10	0.13	0.13
Sat Flow, veh/h	3428	5066	1572	3428	3526	1572	3428	3526	1567	3428	1856	1547
Grp Volume(v), veh/h	221	1282	496	127	1164	229	161	87	106	299	193	127
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1763	1572	1714	1763	1567	1714	1856	1547
Q Serve(g_s), s	10.1	13.0	18.5	5.8	23.5	11.9	7.4	3.7	10.6	13.7	16.2	12.5
Cycle Q Clear(g_c), s	10.1	13.0	18.5	5.8	23.5	11.9	7.4	3.7	10.6	13.7	16.2	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	2998	931	170	1989	887	206	303	135	345	235	196
V/C Ratio(X)	0.83	0.43	0.53	0.75	0.59	0.26	0.78	0.29	0.79	0.87	0.82	0.65
Avail Cap(c_a), veh/h	707	2998	931	707	1989	887	461	639	284	504	360	300
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.8	8.3	8.9	73.7	11.6	17.8	74.2	68.5	71.7	70.9	68.1	66.5
Incr Delay (d2), s/veh	2.6	0.4	2.2	2.5	1.3	0.7	2.4	0.2	3.8	7.6	4.9	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.0	5.3	2.6	7.9	4.6	3.4	1.7	4.4	6.4	8.1	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.4	8.8	11.1	76.2	12.9	18.5	76.6	68.7	75.5	78.4	73.0	67.8
LnGrp LOS	E	A	B	E	B	B	E	E	E	E	E	E
Approach Vol, veh/h		1999			1520			354			619	
Approach Delay, s/veh		16.5			19.0			74.3			74.6	
Approach LOS		B			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	97.3	22.6	20.8	14.9	101.7	16.1	27.3				
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	7.0				
Max Green Setting (Gmax), s	33.0	47.0	23.5	29.0	33.0	47.0	21.5	31.0				
Max Q Clear Time (g_c+l1), s	12.1	25.5	15.7	12.6	7.8	20.5	9.4	18.2				
Green Ext Time (p_c), s	0.3	10.0	0.4	0.4	0.1	13.5	0.2	0.8				

Intersection Summary

HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Future Background P.M.

Timings

1: SW 184 Avenue & Pines Boulevard

Future Background Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1351	220	288	1281	243	294	220	226	292	243	127
Future Volume (vph)	180	1351	220	288	1281	243	294	220	226	292	243	127
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	43.0	43.0	12.0	43.0	43.0	11.5	46.5	46.5	11.5	48.5	48.5
Total Split (s)	24.0	60.0	60.0	27.0	63.0	63.0	41.0	38.0	38.0	35.0	32.0	32.0
Total Split (%)	15.0%	37.5%	37.5%	16.9%	39.4%	39.4%	25.6%	23.8%	23.8%	21.9%	20.0%	20.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 151 (94%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Splits and Phases: 1: SW 184 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	63 s	35 s	38 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
27 s	60 s	41 s	32 s

HCM 6th Signalized Intersection Summary

1: SW 184 Avenue & Pines Boulevard

Future Background Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1351	220	288	1281	243	294	220	226	292	243	127
Future Volume (veh/h)	180	1351	220	288	1281	243	294	220	226	292	243	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	194	1453	237	310	1377	261	316	237	243	314	261	137
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	236	2298	704	351	2468	765	362	601	267	359	598	266
Arrive On Green	0.09	0.60	0.60	0.14	0.65	0.65	0.11	0.17	0.17	0.10	0.17	0.17
Sat Flow, veh/h	3428	5066	1551	3428	5066	1571	3428	3526	1570	3428	3526	1570
Grp Volume(v), veh/h	194	1453	237	310	1377	261	316	237	243	314	261	137
Grp Sat Flow(s),veh/h/ln	1714	1689	1551	1714	1689	1571	1714	1763	1570	1714	1763	1570
Q Serve(g_s), s	8.9	29.4	12.2	14.2	24.0	12.0	14.5	9.6	24.3	14.4	10.6	12.7
Cycle Q Clear(g_c), s	8.9	29.4	12.2	14.2	24.0	12.0	14.5	9.6	24.3	14.4	10.6	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	2298	704	351	2468	765	362	601	267	359	598	266
V/C Ratio(X)	0.82	0.63	0.34	0.88	0.56	0.34	0.87	0.39	0.91	0.87	0.44	0.51
Avail Cap(c_a), veh/h	364	2298	704	429	2468	765	739	694	309	611	598	266
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.7	23.2	19.7	68.2	18.7	16.6	70.5	59.0	65.1	70.6	59.6	60.4
Incr Delay (d2), s/veh	3.9	1.1	1.1	14.9	0.9	1.2	2.6	0.2	25.2	3.5	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	11.0	4.3	6.8	8.7	4.3	6.5	4.3	11.6	6.5	4.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.6	24.3	20.8	83.0	19.6	17.8	73.1	59.2	90.3	74.0	59.8	61.2
LnGrp LOS	E	C	C	F	B	B	E	E	F	E	E	E
Approach Vol, veh/h		1884			1948			796			712	
Approach Delay, s/veh		29.1			29.4			74.2			66.3	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	85.0	23.3	33.8	23.4	79.6	23.4	33.6				
Change Period (Y+Rc), s	7.0	7.0	6.5	6.5	7.0	7.0	6.5	6.5				
Max Green Setting (Gmax), s	17.0	56.0	28.5	31.5	20.0	53.0	34.5	25.5				
Max Q Clear Time (g_c+I1), s	10.9	26.0	16.4	26.3	16.2	31.4	16.5	14.7				
Green Ext Time (p_c), s	0.1	4.8	0.3	0.7	0.2	4.9	0.4	1.0				

Intersection Summary

HCM 6th Ctrl Delay 40.9
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

2: SW 186 Avenue & Pines Boulevard

Future Background Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  			  						
Traffic Volume (vph)	99	1701	15	123	1441	160	11	6	59	105	6
Future Volume (vph)	99	1701	15	123	1441	160	11	6	59	105	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	2			4			8
Permitted Phases	6		6	2		2	4		4	8	
Detector Phase	1	6	6	5	2	2	4	4	4	8	8
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	37.0	37.0	11.0	39.0	39.0	52.0	52.0	52.0	56.0	56.0
Total Split (s)	16.0	82.0	82.0	25.0	91.0	91.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	10.0%	51.3%	51.3%	15.6%	56.9%	56.9%	33.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 3 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 2: SW 186 Avenue & Pines Boulevard

					
Ø1	Ø2 (R)			Ø4	
16 s	91 s			53 s	
					
Ø5	Ø6 (R)			Ø8	
25 s	82 s			53 s	

HCM 6th Signalized Intersection Summary

2: SW 186 Avenue & Pines Boulevard

Future Background Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	99	1701	15	123	1441	160	11	6	59	105	6	53
Future Volume (veh/h)	99	1701	15	123	1441	160	11	6	59	105	6	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	108	1849	16	134	1566	174	12	7	64	114	7	58
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	279	3486	1081	261	3511	1089	138	73	227	185	25	206
Arrive On Green	0.04	0.92	0.92	0.05	0.92	0.92	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1767	5066	1571	1767	5066	1571	702	503	1569	1317	172	1424
Grp Volume(v), veh/h	108	1849	16	134	1566	174	19	0	64	114	0	65
Grp Sat Flow(s),veh/h/ln	1767	1689	1571	1767	1689	1571	1205	0	1569	1317	0	1596
Q Serve(g_s), s	3.0	9.6	0.1	3.7	6.6	1.6	0.4	0.0	5.8	13.6	0.0	5.8
Cycle Q Clear(g_c), s	3.0	9.6	0.1	3.7	6.6	1.6	6.1	0.0	5.8	19.7	0.0	5.8
Prop In Lane	1.00		1.00	1.00		1.00	0.63		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	279	3486	1081	261	3511	1089	211	0	227	185	0	231
V/C Ratio(X)	0.39	0.53	0.01	0.51	0.45	0.16	0.09	0.00	0.28	0.62	0.00	0.28
Avail Cap(c_a), veh/h	324	3486	1081	397	3511	1089	422	0	451	373	0	459
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.8	2.5	2.1	7.2	2.2	2.0	59.9	0.0	61.0	69.9	0.0	61.0
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.5	0.3	0.3	0.1	0.0	0.2	1.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.2	0.1	1.4	1.7	0.6	0.7	0.0	2.4	4.7	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	3.1	2.1	7.6	2.5	2.2	60.0	0.0	61.3	71.2	0.0	61.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1973			1874			83			179	
Approach Delay, s/veh		3.3			2.8			61.0			67.6	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.9	117.9		30.1	12.7	117.1		30.1				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	9.0	84.0		46.0	18.0	75.0		46.0				
Max Q Clear Time (g_c+l1), s	5.0	8.6		8.1	5.7	11.6		21.7				
Green Ext Time (p_c), s	0.0	21.6		0.2	0.1	26.3		0.4				

Intersection Summary

HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC

3: East Driveway & Pines Boulevard

Future Background Conditions

Intersection

Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑	↑		↑↑↑↑		↑
Traffic Vol, veh/h	1549	18	0	1523	0	262
Future Vol, veh/h	1549	18	0	1523	0	262
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1702	20	0	1674	0	288

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	-	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	942	-	-	-
HCM Lane V/C Ratio	0.306	-	-	-
HCM Control Delay (s)	10.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	1.3	-	-	-

HCM 6th TWSC

4: West/SmartStop Driveway & Pines Boulevard

Future Background Conditions

Intersection

Int Delay, s/veh 5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		↑
Traffic Vol, veh/h	1556	70	131	1388	0	2
Future Vol, veh/h	1556	70	131	1388	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1768	80	149	1577	0	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0 1848	0 - 884
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	5.36	- 3.7
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.13	- 2
Pot Cap-1 Maneuver	-	~ 148	0 918
Stage 1	-	-	0 -
Stage 2	-	-	0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	~ 148	- 918
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	11.7	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	918	-	- ~ 148	-	-
HCM Lane V/C Ratio	0.002	-	- 1.006	-	-
HCM Control Delay (s)	8.9	-	- 135.6	-	-
HCM Lane LOS	A	-	- F	-	-
HCM 95th %tile Q(veh)	0	-	- 7.5	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings

5: SW 196 Avenue & Pines Boulevard

Future Background Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	1112	430	110	1009	199	140	75	92	259	167	110
Future Volume (vph)	192	1112	430	110	1009	199	140	75	92	259	167	110
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	44.0	44.0	12.0	44.0	44.0	11.5	50.0	50.0	11.5	50.0	50.0
Total Split (s)	40.0	54.0	54.0	40.0	54.0	54.0	28.0	36.0	36.0	30.0	38.0	38.0
Total Split (%)	25.0%	33.8%	33.8%	25.0%	33.8%	33.8%	17.5%	22.5%	22.5%	18.8%	23.8%	23.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 83 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 5: SW 196 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
40 s	54 s	30 s	36 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
40 s	54 s	28 s	38 s

HCM 6th Signalized Intersection Summary

5: SW 196 Avenue & Pines Boulevard

Future Background Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	1112	430	110	1009	199	140	75	92	259	167	110
Future Volume (veh/h)	192	1112	430	110	1009	199	140	75	92	259	167	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	226	1308	506	129	1187	234	165	88	108	305	196	129
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	270	2980	925	172	1973	880	210	307	137	351	238	199
Arrive On Green	0.10	0.78	0.78	0.07	0.74	0.56	0.06	0.09	0.09	0.10	0.13	0.13
Sat Flow, veh/h	3428	5066	1572	3428	3526	1572	3428	3526	1567	3428	1856	1547
Grp Volume(v), veh/h	226	1308	506	129	1187	234	165	88	108	305	196	129
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1763	1572	1714	1763	1567	1714	1856	1547
Q Serve(g_s), s	10.3	13.7	19.6	5.9	24.9	12.3	7.6	3.7	10.8	14.0	16.5	12.7
Cycle Q Clear(g_c), s	10.3	13.7	19.6	5.9	24.9	12.3	7.6	3.7	10.8	14.0	16.5	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	2980	925	172	1973	880	210	307	137	351	238	199
V/C Ratio(X)	0.84	0.44	0.55	0.75	0.60	0.27	0.79	0.29	0.79	0.87	0.82	0.65
Avail Cap(c_a), veh/h	707	2980	925	707	1973	880	461	639	284	504	360	300
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.6	8.7	9.3	73.7	12.2	18.2	74.1	68.4	71.6	70.7	68.0	66.3
Incr Delay (d2), s/veh	2.6	0.5	2.3	2.5	1.4	0.7	2.5	0.2	3.8	8.1	5.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.2	5.8	2.6	8.5	4.8	3.4	1.7	4.5	6.6	8.2	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	9.1	11.6	76.1	13.6	19.0	76.5	68.6	75.4	78.9	73.3	67.6
LnGrp LOS	E	A	B	E	B	B	E	E	E	E	E	E
Approach Vol, veh/h		2040			1550			361			630	
Approach Delay, s/veh		16.8			19.6			74.2			74.9	
Approach LOS		B			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.6	96.5	22.9	21.0	15.0	101.1	16.3	27.5				
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	7.0				
Max Green Setting (Gmax), s	33.0	47.0	23.5	29.0	33.0	47.0	21.5	31.0				
Max Q Clear Time (g_c+l1), s	12.3	26.9	16.0	12.8	7.9	21.6	9.6	18.5				
Green Ext Time (p_c), s	0.3	9.8	0.4	0.4	0.1	13.5	0.2	0.8				

Intersection Summary

HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Future Total P.M.

Timings

1: SW 184 Avenue & Pines Boulevard

Future Total Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1462	220	288	1369	243	294	220	226	292	243	127
Future Volume (vph)	180	1462	220	288	1369	243	294	220	226	292	243	127
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	43.0	43.0	12.0	43.0	43.0	11.5	46.5	46.5	11.5	48.5	48.5
Total Split (s)	24.0	60.0	60.0	27.0	63.0	63.0	41.0	38.0	38.0	35.0	32.0	32.0
Total Split (%)	15.0%	37.5%	37.5%	16.9%	39.4%	39.4%	25.6%	23.8%	23.8%	21.9%	20.0%	20.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 151 (94%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 135

Control Type: Actuated-Coordinated

Splits and Phases: 1: SW 184 Avenue & Pines Boulevard

			
Ø1	Ø2 (R)	Ø3	Ø4
24 s	63 s	35 s	38 s
			
Ø5	Ø6 (R)	Ø7	Ø8
27 s	60 s	41 s	32 s

HCM 6th Signalized Intersection Summary

1: SW 184 Avenue & Pines Boulevard

Future Total Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1462	220	288	1369	243	294	220	226	292	243	127
Future Volume (veh/h)	180	1462	220	288	1369	243	294	220	226	292	243	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	194	1572	237	310	1472	261	316	237	243	314	261	137
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	236	2298	704	351	2468	765	362	601	267	359	598	266
Arrive On Green	0.09	0.60	0.60	0.14	0.65	0.65	0.11	0.17	0.17	0.10	0.17	0.17
Sat Flow, veh/h	3428	5066	1551	3428	5066	1571	3428	3526	1570	3428	3526	1570
Grp Volume(v), veh/h	194	1572	237	310	1472	261	316	237	243	314	261	137
Grp Sat Flow(s),veh/h/ln	1714	1689	1551	1714	1689	1571	1714	1763	1570	1714	1763	1570
Q Serve(g_s), s	8.9	33.5	12.2	14.2	26.7	12.0	14.5	9.6	24.3	14.4	10.6	12.7
Cycle Q Clear(g_c), s	8.9	33.5	12.2	14.2	26.7	12.0	14.5	9.6	24.3	14.4	10.6	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	2298	704	351	2468	765	362	601	267	359	598	266
V/C Ratio(X)	0.82	0.68	0.34	0.88	0.60	0.34	0.87	0.39	0.91	0.87	0.44	0.51
Avail Cap(c_a), veh/h	364	2298	704	429	2468	765	739	694	309	611	598	266
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.7	24.0	19.7	68.2	19.1	16.6	70.5	59.0	65.1	70.6	59.6	60.4
Incr Delay (d2), s/veh	3.8	1.3	1.0	14.9	1.1	1.2	2.6	0.2	25.2	3.5	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	12.6	4.3	6.8	9.7	4.3	6.5	4.3	11.6	6.5	4.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	25.3	20.8	83.0	20.2	17.8	73.1	59.2	90.3	74.0	59.8	61.2
LnGrp LOS	E	C	C	F	C	B	E	E	F	E	E	E
Approach Vol, veh/h		2003			2043			796			712	
Approach Delay, s/veh		29.6			29.4			74.2			66.3	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	85.0	23.3	33.8	23.4	79.6	23.4	33.6				
Change Period (Y+Rc), s	7.0	7.0	6.5	6.5	7.0	7.0	6.5	6.5				
Max Green Setting (Gmax), s	17.0	56.0	28.5	31.5	20.0	53.0	34.5	25.5				
Max Q Clear Time (g_c+l1), s	10.9	28.7	16.4	26.3	16.2	35.5	16.5	14.7				
Green Ext Time (p_c), s	0.1	5.2	0.3	0.7	0.2	5.2	0.4	1.0				

Intersection Summary

HCM 6th Ctrl Delay 40.7
 HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

2: SW 186 Avenue & Pines Boulevard

Future Total Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  			  						
Traffic Volume (vph)	113	1812	15	123	1529	160	11	6	59	105	6
Future Volume (vph)	113	1812	15	123	1529	160	11	6	59	105	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	2			4			8
Permitted Phases	6		6	2		2	4		4	8	
Detector Phase	1	6	6	5	2	2	4	4	4	8	8
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	37.0	37.0	11.0	39.0	39.0	52.0	52.0	52.0	56.0	56.0
Total Split (s)	16.0	82.0	82.0	25.0	91.0	91.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	10.0%	51.3%	51.3%	15.6%	56.9%	56.9%	33.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 3 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated

Splits and Phases: 2: SW 186 Avenue & Pines Boulevard

					
Ø1	Ø2 (R)			Ø4	
16 s	91 s			53 s	
					
Ø5	Ø6 (R)			Ø8	
25 s	82 s			53 s	

HCM 6th Signalized Intersection Summary

2: SW 186 Avenue & Pines Boulevard

Future Total Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	113	1812	15	123	1529	160	11	6	59	105	6	53
Future Volume (veh/h)	113	1812	15	123	1529	160	11	6	59	105	6	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	123	1970	16	134	1662	174	12	7	64	114	7	58
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	266	3486	1081	243	3497	1085	138	73	227	185	25	206
Arrive On Green	0.04	0.92	0.92	0.05	0.92	0.92	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1767	5066	1571	1767	5066	1571	702	503	1569	1317	172	1424
Grp Volume(v), veh/h	123	1970	16	134	1662	174	19	0	64	114	0	65
Grp Sat Flow(s),veh/h/ln	1767	1689	1571	1767	1689	1571	1205	0	1569	1317	0	1596
Q Serve(g_s), s	3.4	10.9	0.1	3.7	7.6	1.7	0.4	0.0	5.8	13.6	0.0	5.8
Cycle Q Clear(g_c), s	3.4	10.9	0.1	3.7	7.6	1.7	6.1	0.0	5.8	19.7	0.0	5.8
Prop In Lane	1.00		1.00	1.00		1.00	0.63		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	266	3486	1081	243	3497	1085	211	0	227	185	0	231
V/C Ratio(X)	0.46	0.57	0.01	0.55	0.48	0.16	0.09	0.00	0.28	0.62	0.00	0.28
Avail Cap(c_a), veh/h	305	3486	1081	378	3497	1085	422	0	451	373	0	459
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	2.6	2.1	7.5	2.3	2.1	59.9	0.0	61.0	69.9	0.0	61.0
Incr Delay (d2), s/veh	0.5	0.7	0.0	0.6	0.4	0.2	0.1	0.0	0.2	1.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.4	0.1	1.4	1.9	0.6	0.7	0.0	2.4	4.7	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	3.2	2.1	8.1	2.7	2.3	60.0	0.0	61.3	71.2	0.0	61.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		2109			1970			83			179	
Approach Delay, s/veh		3.5			3.0			61.0			67.6	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.4	117.5		30.1	12.7	117.1		30.1				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	9.0	84.0		46.0	18.0	75.0		46.0				
Max Q Clear Time (g_c+l1), s	5.4	9.6		8.1	5.7	12.9		21.7				
Green Ext Time (p_c), s	0.0	24.1		0.2	0.1	29.2		0.4				

Intersection Summary

HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC

3: East Driveway & Pines Boulevard

Future Total Conditions

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑	↑		↑↑↑↑		↑
Traffic Vol, veh/h	1549	22	0	1625	0	387
Future Vol, veh/h	1549	22	0	1625	0	387
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1702	24	0	1786	0	425

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 851
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 3.7
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 2
Pot Cap-1 Maneuver	-	-	0 - 0 942
Stage 1	-	-	0 - 0
Stage 2	-	-	0 - 0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 942
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	942	-	-	-
HCM Lane V/C Ratio	0.451	-	-	-
HCM Control Delay (s)	11.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	2.4	-	-	-

HCM 6th TWSC

4: West/SmartStop Driveway & Pines Boulevard

Future Total Conditions

Intersection

Int Delay, s/veh 29.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		↑
Traffic Vol, veh/h	1560	120	219	1402	0	2
Future Vol, veh/h	1560	120	219	1402	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1773	136	249	1593	0	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1909
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.36
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.13
Pot Cap-1 Maneuver	-	-	~ 137
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ 137
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	60.8	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	916	-	-	~ 137	-
HCM Lane V/C Ratio	0.002	-	-	1.817	-
HCM Control Delay (s)	8.9	-	-	\$ 450	-
HCM Lane LOS	A	-	-	F	-
HCM 95th %tile Q(veh)	0	-	-	18.9	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings

5: SW 196 Avenue & Pines Boulevard

Future Total Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 		
Traffic Volume (vph)	192	1166	430	110	1023	199	140	75	92	259	167	110
Future Volume (vph)	192	1166	430	110	1023	199	140	75	92	259	167	110
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	12.0	44.0	44.0	12.0	44.0	44.0	11.5	50.0	50.0	11.5	50.0	50.0
Total Split (s)	40.0	54.0	54.0	40.0	54.0	54.0	28.0	36.0	36.0	30.0	38.0	38.0
Total Split (%)	25.0%	33.8%	33.8%	25.0%	33.8%	33.8%	17.5%	22.5%	22.5%	18.8%	23.8%	23.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 83 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 5: SW 196 Avenue & Pines Boulevard

 Ø1	 Ø2 (R)	 Ø3	 Ø4
40 s	54 s	30 s	36 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
40 s	54 s	28 s	38 s

HCM 6th Signalized Intersection Summary

5: SW 196 Avenue & Pines Boulevard

Future Total Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	 		 	 		 	 	
Traffic Volume (veh/h)	192	1166	430	110	1023	199	140	75	92	259	167	110
Future Volume (veh/h)	192	1166	430	110	1023	199	140	75	92	259	167	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	226	1372	506	129	1204	234	165	88	108	305	196	129
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	270	2980	925	172	1973	880	210	307	137	351	238	199
Arrive On Green	0.10	0.78	0.78	0.07	0.74	0.56	0.06	0.09	0.09	0.10	0.13	0.13
Sat Flow, veh/h	3428	5066	1572	3428	3526	1572	3428	3526	1567	3428	1856	1547
Grp Volume(v), veh/h	226	1372	506	129	1204	234	165	88	108	305	196	129
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1763	1572	1714	1763	1567	1714	1856	1547
Q Serve(g_s), s	10.3	14.7	19.6	5.9	25.6	12.3	7.6	3.7	10.8	14.0	16.5	12.7
Cycle Q Clear(g_c), s	10.3	14.7	19.6	5.9	25.6	12.3	7.6	3.7	10.8	14.0	16.5	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	2980	925	172	1973	880	210	307	137	351	238	199
V/C Ratio(X)	0.84	0.46	0.55	0.75	0.61	0.27	0.79	0.29	0.79	0.87	0.82	0.65
Avail Cap(c_a), veh/h	707	2980	925	707	1973	880	461	639	284	504	360	300
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.6	8.8	9.3	73.7	12.3	18.2	74.1	68.4	71.6	70.7	68.0	66.3
Incr Delay (d2), s/veh	2.6	0.5	2.3	2.5	1.4	0.7	2.5	0.2	3.8	8.1	5.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.5	5.8	2.6	8.7	4.8	3.4	1.7	4.5	6.6	8.2	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	9.3	11.6	76.1	13.7	19.0	76.5	68.6	75.4	78.9	73.3	67.6
LnGrp LOS	E	A	B	E	B	B	E	E	E	E	E	E
Approach Vol, veh/h		2104			1567			361			630	
Approach Delay, s/veh		16.7			19.6			74.2			74.9	
Approach LOS		B			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.6	96.5	22.9	21.0	15.0	101.1	16.3	27.5				
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	7.0				
Max Green Setting (Gmax), s	33.0	47.0	23.5	29.0	33.0	47.0	21.5	31.0				
Max Q Clear Time (g_c+l1), s	12.3	27.6	16.0	12.8	7.9	21.6	9.6	18.5				
Green Ext Time (p_c), s	0.3	9.8	0.4	0.4	0.1	14.2	0.2	0.8				

Intersection Summary

HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Appendix H

Vehicle Accumulation Analysis Data

Snapshot Queue Study

Location: Franklin Academy - Charter school, 18800 Pines Blvd
City: Pembroke Pines, FL

Date: 4/12/2022
Day: Tuesday

TIME	Drive Thru Queue Length (Number of Vehicles)					Notes
	ER to Entrance	WL to Entrance	Queue from Parking to Entrance	Mid Parking Lane	Total	
6:45 AM	14	12	0	0	26	
6:50 AM	0	5	30	0	35	
6:55 AM	0	2	14	0	16	
7:00 AM	0	2	11	0	13	
7:05 AM	0	4	13	0	17	
7:10 AM	2	3	30	0	35	
7:15 AM	6	6	24	0	36	
7:20 AM	10	20	26	0	56	
7:25 AM	26	13	28	0	67	
7:30 AM	24	15	18	0	57	
7:35 AM	0	1	23	0	24	
7:40 AM	0	0	10	0	10	
7:45 AM	0	0	2	0	2	
7:50 AM	3	1	0	0	4	
7:55 AM	6	3	2	0	11	
8:00 AM	7	15	1	0	23	
8:05 AM	0	15	8	0	23	
8:10 AM	0	0	12	0	12	
8:15 AM	3	0	5	0	8	
8:20 AM	0	0	13	0	13	
8:25 AM	0	0	18	0	18	
8:30 AM	0	1	0	0	1	
8:35 AM	0	0	1	0	1	
8:40 AM	0	0	0	0	0	
8:45 AM	0	0	0	0	0	
1:45 PM	21	8	0	0	29	
1:50 PM	29	10	0	0	39	
1:55 PM	34	11	0	0	45	
2:00 PM	0	12	0	0	12	
2:05 PM	12	16	23	0	51	
2:10 PM	18	16	73	0	107	
2:15 PM	0	17	0	9	26	
2:20 PM	13	17	45	16	91	
2:25 PM	0	17	55	16	88	
2:30 PM	0	17	54	16	87	
2:35 PM	1	11	37	15	64	
2:40 PM	1	0	23	16	40	
2:45 PM	0	0	48	8	56	
2:50 PM	1	3	16	9	29	
2:55 PM	8	6	8	0	22	
3:00 PM	16	14	0	0	30	
3:05 PM	16	14	0	0	30	
3:10 PM	16	15	0	0	31	
3:15 PM	1	0	15	0	16	
3:20 PM	0	0	67	16	83	
3:25 PM	2	3	50	16	71	
3:30 PM	0	0	63	12	75	
3:35 PM	0	1	58	16	75	
3:40 PM	0	0	42	12	54	
3:45 PM	0	0	8	14	22	
Totals	290	326	974	191	1781	

