TRIP GENERATION ANALYSIS
3345 NORTH COURTENAY PARKWAY
MERRITT ISLAND, BREVARD COUNTY

Introduction

This analysis is prepared in support of a rezoning application to change the existing shopping center to specific use for services related to cruise parking and overnight parking. The site of the center is located in the southwest corner of SR 3 and Duval Street. **Figure 1** depicts the site location.

The existing shopping center consists of 27,500 square feet with 207 parking spaces. As a part of change in use, 30 additional parking spaces will be provided. In essence, the shopping center will become a park-and-ride lot with the patrons transported to cruise ships by buses. The lot will be secured and the existing/new uses at the shopping center will serve to provide services only for the patrons arriving to and departing from the cruise ships.

Trip Generation/Distribution

The trip generation of the existing use as well as the proposed was calculated with the use of data from the 10th Edition of the ITE Trip Generation Manual. The calculation is summarized in **Table 1** which shows that the existing use generates 2,499 daily driveway trips with 209 occurring during the P.M. peak hour. The proposed use is expected to generate 920 daily driveway trips with 130 P.M. peak hour trips. The ITE trip generation sheets are attached.

TPD No. 5316
Revised
March 30, 2020

3345 N. Courtenay Parkway
Project № 5316
Figure 1

Site Location Map

N
NTS

Table 1
Trip Generation Summary

ITE Code	Land Use	Size	Daily		P.M. Peak Hour			
			Rate	Trips	Rate	Enter	Exit	Total
Existing Use								
820	Shopping Center	27.5 KSF*	90.87	2,499	7.60	100	109	209
		Total Driveway Trips		2,499	--	100	109	209
Proposed Use								
090	Park-and-Ride with Bus Service	237 Spaces **	3.88	920	0.55	32	98	130
		Total Driveway Trips		**920**	**----**	**32**	**98**	**130**

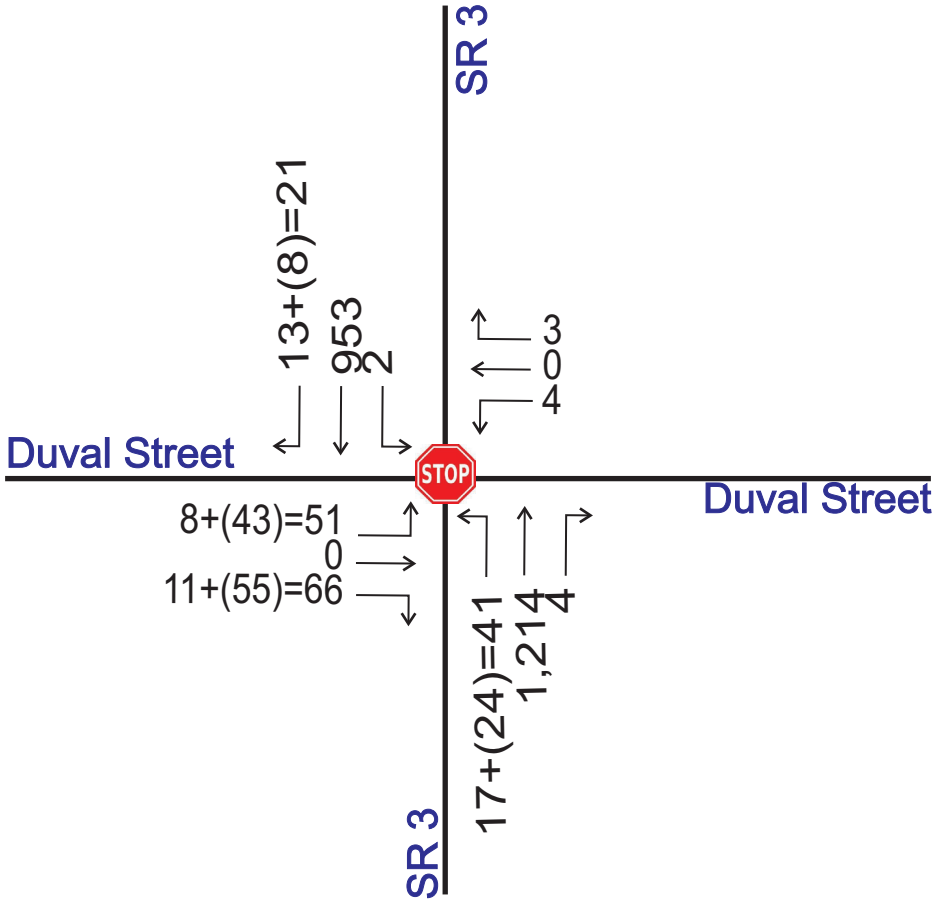
*KSF=1,000 Square feet
**Occupied Parking Spaces

From above calculations, it can be seen that the existing shopping center generates far more driveway volumes than the proposed park-and-ride lot. It is proposed that the existing access configuration be maintained. Therefore, entering/existing queues would be reduced with the less intense use of the property. Additionally, no roadway/intersection improvements will be required due to less trips to be generated by the site

It is proposed that the existing shopping center at 3345 North Courtenay Parkway in Merritt Island, Brevard County be converted to a Park and Ride Lot. Whereas the existing buildings will be maintained for specific uses providing services to the patrons, the number of parking spaces will be increased from 207 to 237. Based upon ITE data, the proposed park and ride lot will generate a maximum of 920 daily trips and 130 P.M. peak hour trips. This will be less trips than the existing shopping center reducing the traffic impacts to the surrounding area.

Intersection Analysis

A P.M. peak hour analysis was conducted for the SR 3/Duval Street intersection. The P.M. peak hour volumes used in the analysis were developed from available FDOT traffic counts for SR 3. For Duval Street, existing development served by the intersection was used to estimate the turning movements as shown in **Figure 2**. Utilizing these turning movements and existing geometry, an intersection capacity analysis was conducted with HCS software. The results of the analysis are shown in the HCS printout included in the Attachment indicate satisfactory traffic operating conditions. Furthermore, the analysis shows a 95% queue length of 0.2 vehicles for the NB left turn lane on SR 3. With a speed of 50 mph on SR 3, a deceleration distance of 290 feet is required for the left turn lane. The existing length of the left turn lane is approximately 290 feet.



3345 N. Courtenay Parkway
Project № 5316
Figure 2

P.M. Peak Hour Traffic Volumes

Procedure for Taking in Customers

The following operational information is as provided by the Owner/Developer:

- The operational timeframe of the Go Port business model at this site will be allowing the cars to enter and exit the site between the hours of operation mostly from 6:30 AM and 12:30 PM, unless there are airline or cruise ship delays. (6 Hours of Operation time anticipated, except for staff).

- The maximum number of vehicles from patrons that will frequent the facility is 200, but these vehicles will enter the parking facility throughout the course of one week.

- The traffic will enter through the west entrance of Duval Street and continue to the parking without interruption. In addition, there will be attendants to assist and direct the cars to their parking spaces, if needed. After the cars park, then the passengers will walk into check in area. There is no queuing anticipated due to the limited numbers of cars entering per day.

- Please see attached the preferred plan with the directional arrows. The traffic will enter the site from the west entrance of off Duval Street and continue through the site with a right turn exit onto SR 3 and another exit via the easterly driveway along Duval Street.

- There is no additional signage added to the site with the exception of the Go Port Company Sign and arrows directing traffic as per the attached plan. This will ensure no congestion.

- All arriving patrons will already have reservations and parking passes upon arrival, and they will park their own cars in the available spots on the lot.

- The patrons will then be directed to the queuing area for transport to the port. The queuing area will be on the north corner of the plaza building. This will be a part of the informational package and also done through staff assistance.

- At the queuing area the patrons are given a number and as patrons numbers approach the amount that will fill a transport vehicle (25-33 maximum per vehicle), they will be loaded as people enter.

- When the patrons are back from their cruise, they will be dropped off at one location and walk to their cars and drive away.

- Gates will be closed at all entrances when patrons are not on site or not anticipated for arrival.

Cars In and Out (FOR ILLUSTRATION PURPOSES ONLY)

**Lot never has more than 200 cars on the lot at a time. **Lot open 6:30 AM – 12:00 PM (5.5 hours)

**50% coming from Titusville/Kennedy Space Center area and therefore would not be using the queuing lane.

Sunday 1-2 Ship Day:

Cars Arriving on the Lot – 15 cars per hour from ***9:00 AM – 12:00 PM*** (1 car every 4 minutes) – *45 total cars*

Monday 3 -4 Ship Day:

Cars Arriving on the Lot – 30 cars per hour from ***9:00 AM – 12:00 PM*** (1 car every 2 minutes) – *90 total cars*

Tuesday & Wednesday No Ships:

Cars Arriving on the Lot **– 0, no ships in Port**

Thursday 1-2 Ship Day (Note, there are 26 weeks a year that there is a ship on Thursdays):

Cars Arriving on the Lot – 15 cars per hour from ***9:00 AM – 12:00 PM*** (1 car every 4 minutes) - *45 total cars*

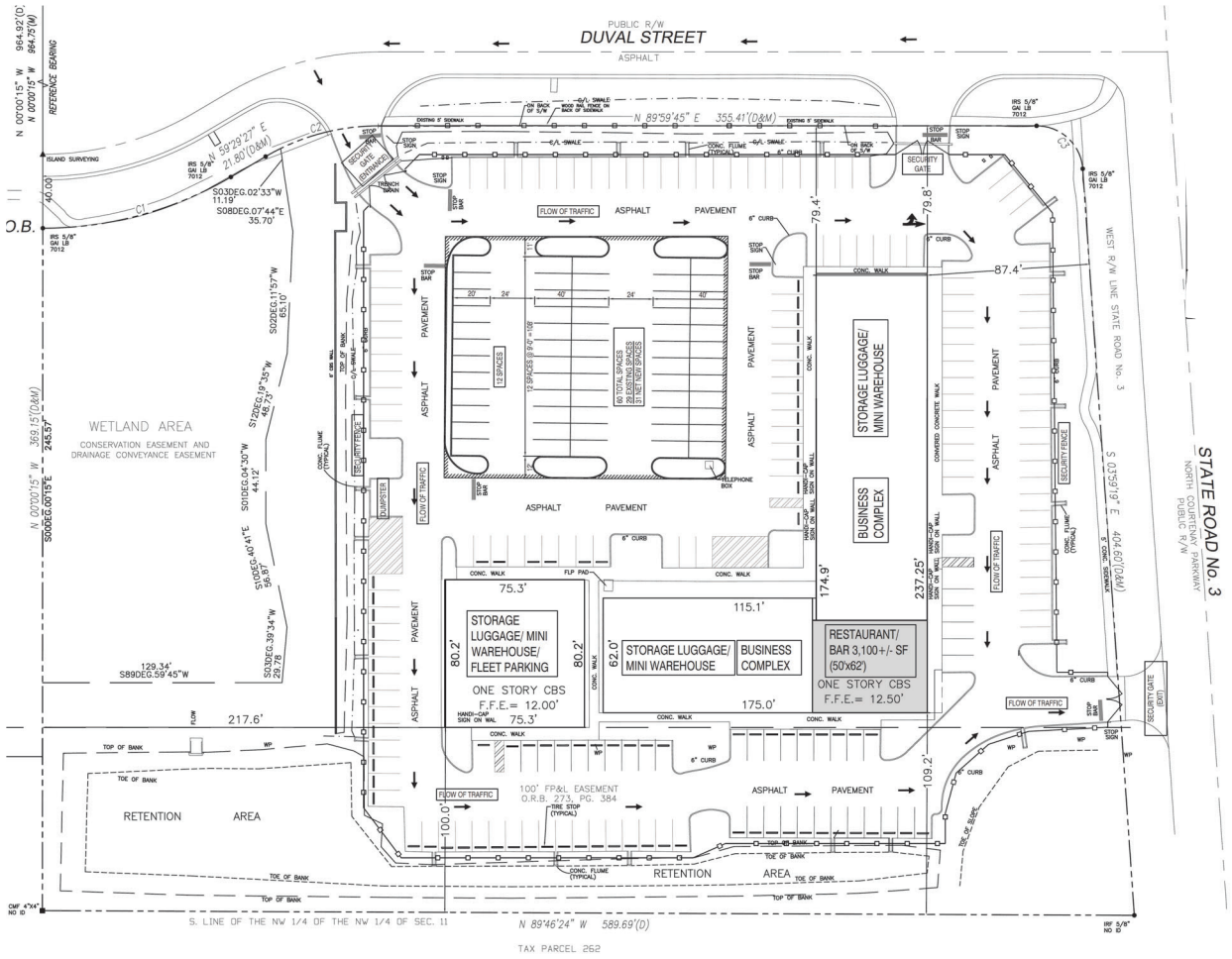
Friday 3 Ship Day:

Cars Arriving on the Lot – 30 cars per hour from ***9:00 AM – 12:00 PM*** (1 car every 2 minutes) - *90 total cars*

Saturday 4-5 Ship Day:

Cars Arriving on the Lot – 40 cars per hour from ***9:00 AM – 12:00 PM*** (1 car every 1.5 minutes) – *120 total cars*

ATTACHMENTS



3345 N. Courtenay Parkway
Project № 5316

Site Plan

NTS

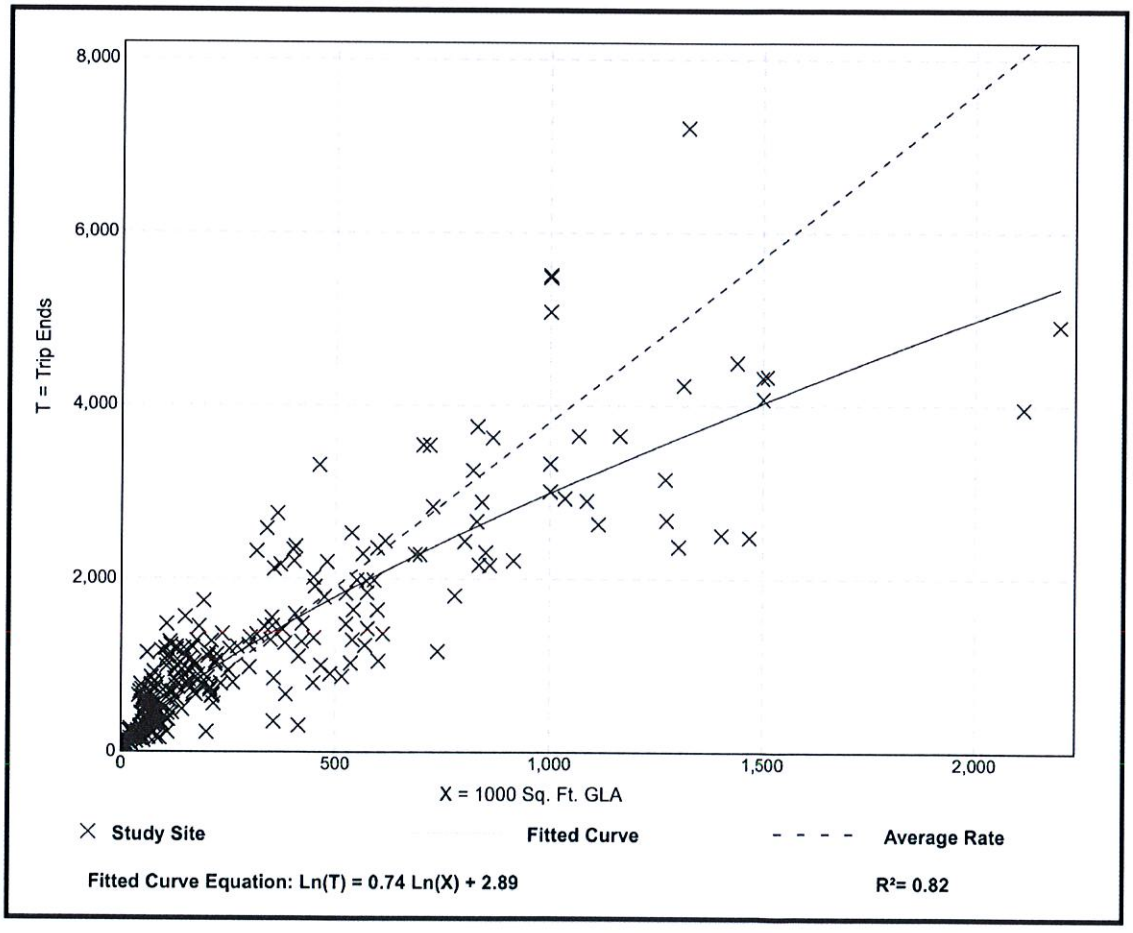
Shopping Center
(820)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 261
1000 Sq. Ft. GLA: 327
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



Park-and-Ride Lot with Bus or Light Rail Service
(090)

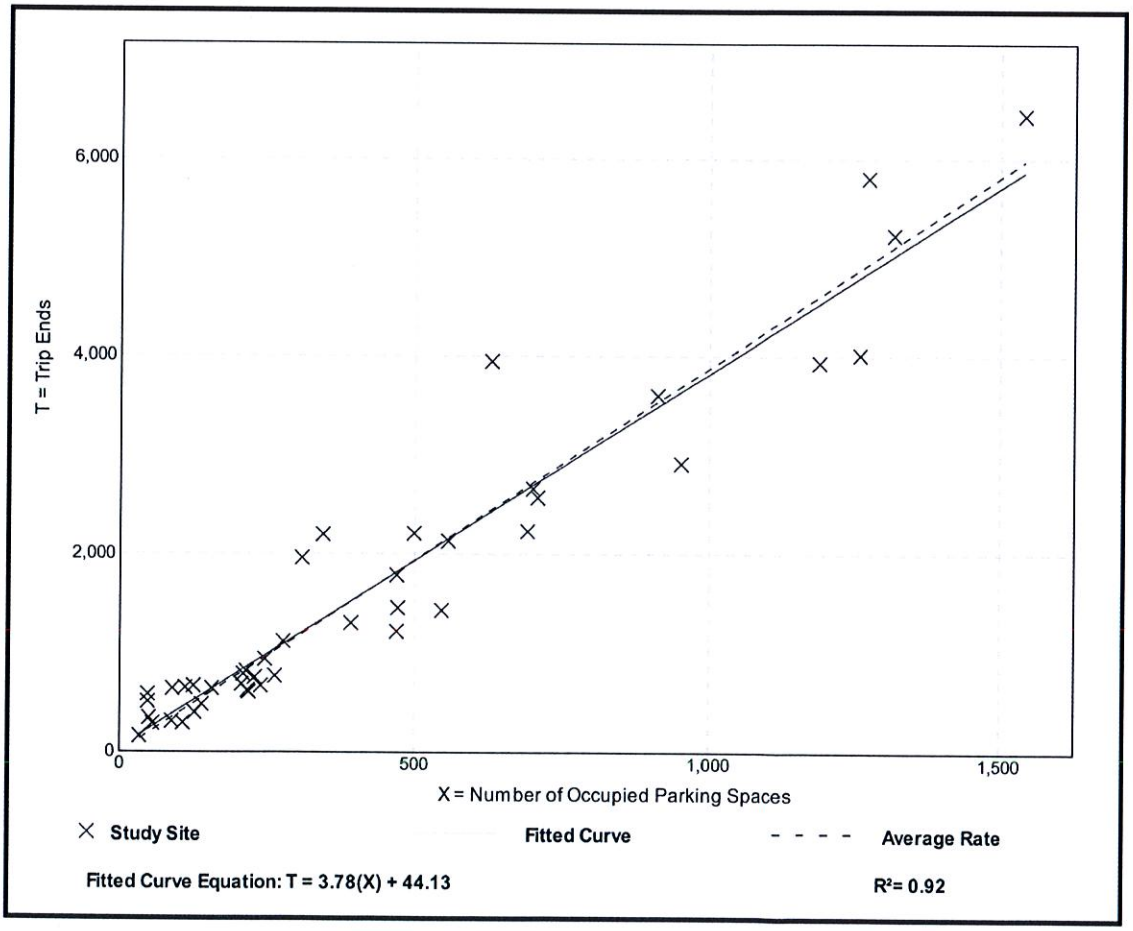
Vehicle Trip Ends vs: Occupied Parking Spaces
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 43
Avg. Num. of Occupied Parking Spaces: 436
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Occupied Parking Space

Average Rate	Range of Rates	Standard Deviation
3.88	2.60 - 12.15	1.09

Data Plot and Equation



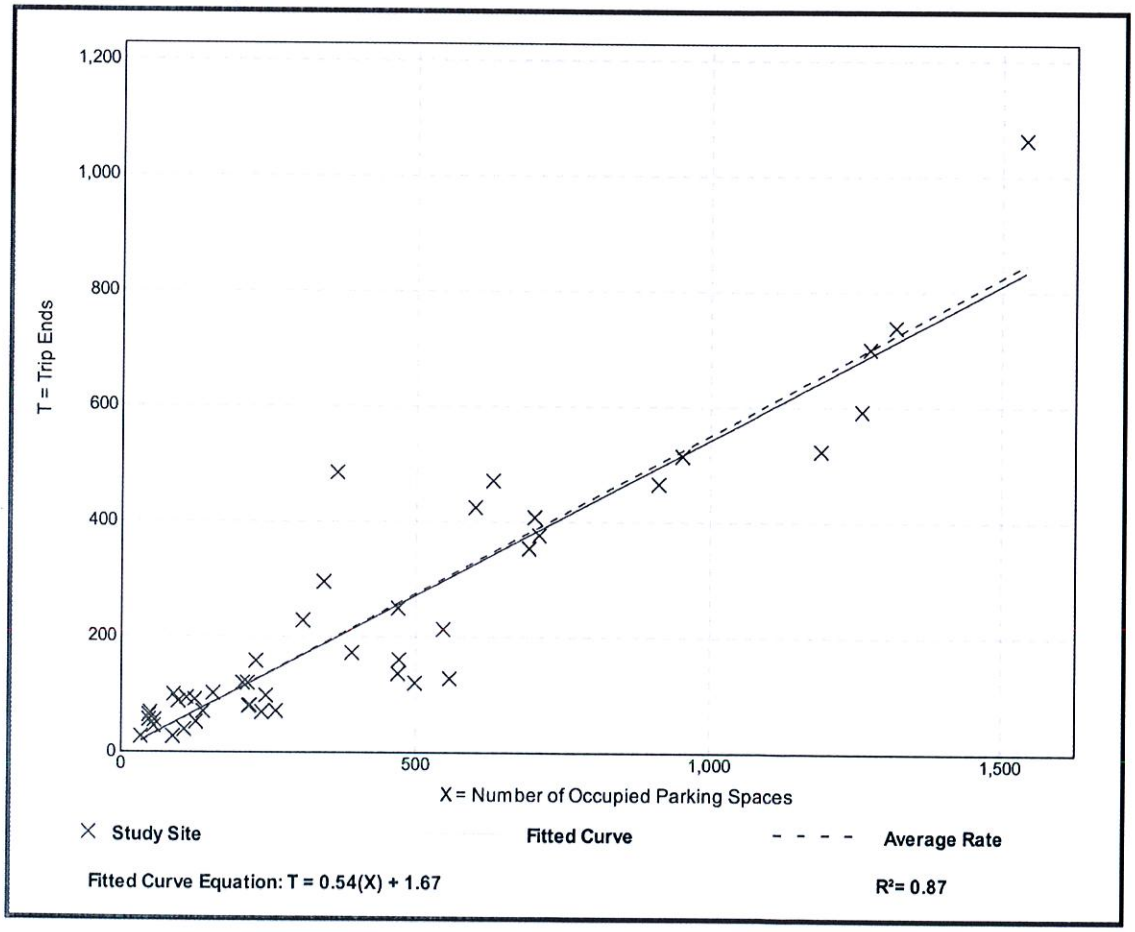
Park-and-Ride Lot with Bus or Light Rail Service
(090)

Vehicle Trip Ends vs: **Occupied Parking Spaces**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 45
Avg. Num. of Occupied Parking Spaces: 430
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Occupied Parking Space

Average Rate	Range of Rates	Standard Deviation
0.55	0.23 - 1.36	0.20

Data Plot and Equation



HCS7 Two-Way Stop-Control Report

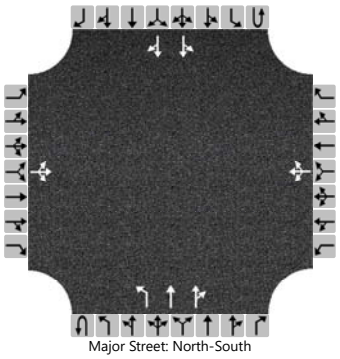
General Information

Analyst	BH
Agency/Co.	TPD, Inc.
Date Performed	3/25/2020
Analysis Year	2020
Time Analyzed	P.M. Peak
Intersection Orientation	North-South
Project Description	Courtenay Parkway

Site Information

Intersection	SR 3 & Duval St
Jurisdiction	Duval County
East/West Street	Duval St
North/South Street	SR 3
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	2	0	0	0	2	0
Configuration			LTR				LTR			L	T	TR		LT		TR
Volume (veh/h)		51	0	66		4	0	3	0	41	1214	4		2	953	21
Percent Heavy Vehicles (%)		1	1	1		1	1	1	1	1				1		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.52	6.52	6.92		7.52	6.52	6.92		4.12				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.51	4.01	3.31		3.51	4.01	3.31		2.21				2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			127				8			45				2		
Capacity, c (veh/h)			248				152			660				523		
v/c Ratio			0.51				0.05			0.07				0.00		
95% Queue Length, Q_{95} (veh)			2.7				0.2			0.2				0.0		
Control Delay (s/veh)			34.0				30.0			10.9				11.9		
Level of Service (LOS)			D				D			B				B		
Approach Delay (s/veh)		34.0				30.0				0.4				0.1		
Approach LOS		D				D										