## CORRIDOR SAFETY STUDY

For<br>Buenaventura Boulevard<br>from Florida Parkway to Osceola Parkway<br>Buena Ventura Lakes, Osceola County

Prepared for:

## FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 5 TRAFFIC OPERATIONS

719 South Woodland Boulevard, MS 3-562
DeLand, Florida 32720


Districtwide Community Traffic Safety Program
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## EXECUTIVE SUMMARY

Traffic Engineering Data Solutions, Inc. (TEDS) was retained on behalf of the Florida Department of Transportation (FDOT) to conduct a Corridor Safety Study on Buenaventura Boulevard from Florida Parkway to Osceola Parkway in Buena Ventura Lakes (Osceola County), Florida.
Over an 84 -month period there were a total of 270 crashes. The crashes resulted in five (5) fatalities, 180 injuries, and $\$ 1,372,358$ in estimated property damage. Based on engineering judgement, a review of crash history, the location of pedestrian generators and attractors, the proximity to bus stops, adjacent signals, and field observations, the following improvements are recommended:

Short-term improvements to be performed by Osceola County:

- Install sidewalk safety railings where drop-off conditions are present.
- Refresh crosswalks at Florida Parkway (south) intersection to be high-emphasis.
- Refresh sidestreet crosswalks and the Pine Island Circle stop bar.
- Reduce the speed limit throughout the corridor to 35 mph .
- Install electronic speed feedback signs.
- Clear overgrown grass from pavement and edge lines.
- Provide sidewalk connectivity from all Lynx bus stops to the existing sidewalk network.

Long-term improvements:

## Signal Reconstruction:

- Reconstruct the traffic signal at Florida Parkway to include one signal head per lane, retroreflective backplates, 4-section flashing yellow arrow signal heads for northbound and southbound Buenaventura Boulevard protected/permissive left-turn movements and with YIELD TO PEDS blank out sign on all approaches. Additionally, pedestrian features should be reconstructed to include special emphasis crosswalks on all approaches, detectable warning surfaces and countdown pedestrian signals.
- Reconstruct the traffic signal at Buttonwood Drive to include one signal head per lane, retroreflective backplates, 4 -section flashing yellow arrow signal heads for northbound and southbound Buenaventura Boulevard protected/permissive left-turn movements and with YIELD TO PEDS blank out sign on all approaches. Additionally, pedestrian features should be reconstructed to include special emphasis crosswalks on all approaches, detectable warning surfaces and countdown pedestrian signals.
- Reconstruct the northbound/southbound traffic signals at Osceola Parkway to include one signal head per lane and retroreflective backplates; refresh the intersection skip striping and stop bars; pedestrian features should be reconstructed to include special emphasis crosswalks on all approaches, detectable warning surfaces and new countdown pedestrian signals.


## Access Management Improvements:

- Convert Trotters Circle/Florida Parkway to a northbound/southbound directional median and extend the left-turn lanes.
- Close the median opening at Briarwood Drive.
- Close the median opening at Competition Drive/Pine Island Circle and provide a southbound left-turn lane for Buttonwood Drive.
- Convert the Ventura Downs /Buenaventura Center entrance to a northbound directional median and extend the northbound left-turn lanes approaching Osceola Parkway.


## Corridor Improvements:

- Install sidewalk along the east side of the roadway from north of Wagon Circle to Briarwood Drive and from Buttonwood Drive to Competition Drive; Install a crosswalk across Florida Parkway (North) and Pine Island Circle and remove the mainline crosswalk at Briarwood Drive once this is complete.
- Modify the superelevation and/or curve radii throughout the corridor to comply with FDM Chapter 210.
- During a future resurfacing project, reduce lane widths by 1 foot to encourage compliance with the speed limit. Additionally, do not replace the SCHOOL pavement messages

The short-term improvements would be implemented by Osceola County at an estimated cost of $\$ 274,053$. For the long-term improvements, the total cost is estimated to be $\$ 1,779,896$.

The cost estimate to modify the superelevation and/or curve radii throughout the corridor only includes the areas within the curves and does not include the cost for roadway resurfacing (this would be implemented by Osceola County). The curve project should be closely coordinated with a future Osceola County resurfacing effort along Buenaventura Boulevard.

- The Benefit/Cost ratio of the proposed improvements is 1.79. The improvements are therefore justified as candidate projects for federal safety funding.
- The total Net Present Value of the improvements is $\$ 1,555,935$ across a 20 -year project lifespan.


## INTRODUCTION

Traffic Engineering Data Solutions, Inc. (TEDS) was retained on behalf of the Florida Department of Transportation (FDOT) to conduct a Corridor Safety Study on Buenaventura Boulevard from Florida Parkway to Osceola Parkway in Buena Ventura Lakes (Osceola County), Florida. The purpose of this study is to provide recommendations related to lane departure crashes, crashes within curves, and other trends identified. A location map of the study corridor is shown below as Figure 1. Ventura Downs commercial plaza, Archie Gordon Memorial Park and the Buenaventura Branch Library are major pedestrian attractors alongside the corridor.
The analysis methods used in completing this study are consistent with the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD 2009), the American Association of State Highway and Transportation Officials' (AASHTO) Highway Safety Manual, 2010, the FDOT Design Manual, FDOT Traffic Engineering Manual (TEM), Speed Zoning Manual, and engineering judgment. This document contains existing conditions, collision analysis, speed zone study, qualitative assessment, improvement alternatives and final recommendations.

Figure 1
General Location Map
Buenaventura Boulevard from Florida Parkway to Osceola Parkway


Source: MapQuest

## EXISTING CONDITIONS

Buenaventura Boulevard is a north/south collector roadway that extends from County Road (C.R.) 530, through the study corridor, to the Osceola/Orange County line. From Florida Parkway (South) to the south side of the Ventura Downs commercial plaza ( 1.31 miles), Buenaventura Boulevard is a four-lane divided roadway with no curb and gutter with adjacent land uses predominantly comprised of residential neighborhoods and parks. From the south side of the Ventura Downs commercial plaza to Osceola Parkway ( 0.10 miles), Buenaventura Boulevard is a four-lane divided roadway with curb and gutter with commercial properties adjacent. The context classification for Buenaventura Boulevard is determined as C3R Suburban Residential.
Existing conditions for Buenaventura Boulevard are shown in Table 1 on the following page. An aerial photograph showing the existing conditions of the study corridor and the surrounding area is depicted in Figure 2. The AM and PM peak hour turning movement counts and spot speed data are also included in Figure 2.
While much of the length of Buenaventura Boulevard is curved between Florida Parkway (South) and Osceola Parkway, there are six (6) significant curves throughout the corridor: from Florida Parkway (South) to Gait Court/Bridle Court; from Gait Court/Bridle Court to Rider Circle; at Wagon Circle (South); at Wagon Circle (North); at Trotters Circle (North)/Florida Parkway (North); and, at Competition Drive.

Table 1
Summary of Existing Conditions Buenaventura Boulevard from Florida Parkway to Osceola Parkway

| Feature | Description |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :---: | :---: | :---: | :---: |
| Main Line | - | Buenaventura Boulevard |  |  |  |  |  |





## TRAFFIC VOLUMES

Four (4) eight-hour turning movement counts (TMC) were conducted on a weekday from 7:00 to 9:00 a.m. and to 4:00 to 6:00 p.m. at the following intersections along the study corridor. Florida Parkway (South)

- Bridle Court
- Wagon Circle (South)
- Florida Parkway (North)/Trotters Circle (North)
- Briarwood Drive
- Buttonwood Drive
- Competition Drive
- Osceola Parkway

The peak-hour volumes at the intersections listed above are shown on the Existing Conditions Diagrams in Figure 2. Based on the four-hour TMCs, the AM peak hour occurred from $7: 15$ to 8:15 a.m. The PM peak hour varied throughout the corridor with the majority having a PM peak-hour between 5:00 and 6:00 p.m., with the Osceola Parkway location having a PM peak hour from 4:45 to 5:45 p.m.

Four-hour bicycle and pedestrian counts were obtained for each of the intersections during the weekday count and are summarized in Appendix B. Throughout the corridor, pedestrian and bicycle activity was low with the majority of the activity occurring at Florida Parkway (south), Buttonwood Drive, and Osceola Parkway, all of which are signalized intersections. Additional details of pedestrian activities are summarized in the Qualitative Assessment section.

## COLLISION DATA

Crash data for Buenaventura Boulevard within the study limits was obtained from the University of Florida's Signal Four Analytics for the period of time from January 1, 2012 to December 31, 2018. Based on a review of the data, there were 270 crashes reported within the study limits (67 short form and 203 long form reports) consisting of the following crash types:

- 81 rear-end;
- 53 angle;
- 37 fixed-object;
- 32 side-swipe;
- 19 left-turn;
- 15 right-turn;
- 10 rollover;
- Seven (7) bicycle;
- Seven (7) head-on;
- Five (5) pedestrian;
- Two (2) off-road;
- One (1) backed-into; and,
- One (1) object-in-road
- The crashes resulted in five (5) fatalities, 180 injuries, and $\$ 1,372,358$ in estimated property damage.
- 171 of the crashes occurred during the day while 99 crashes occurred at night.
- 227 crashes occurred under dry pavement conditions while 43 crashes occurred under wet pavement conditions.
- Four (4) crashes resulted in five (5) fatalities as summarized below:
- One (1) fixed-object crash occurred at night on wet pavement when a southbound driver south of Wagon Circle (North) lost control and struck a tree beyond the right shoulder.
- One (1) fixed object crash occurred at night when a southbound motorcycle driver struck the right shoulder guardrail south of Wagon Circle (North).
- One (1) head-on crash occurred when a southbound driver lost control exiting the curve at Competition Drive and struck oncoming traffic at Buttonwood Drive. The crash occurred during the day on dry pavement and resulted in two (2) fatalities; according to the crash report, narcotics were found to be a contributing factor to the crash.
- One (1) pedestrian crash occurred at night when a pedestrian was struck by a southbound vehicle while crossing west toward the LYNX bus stop at the Ventura Downs commercial plaza (south of Osceola Parkway).
- Speed was reported as a contributing factor in six (6) crashes as summarized below. All speed crashes were lane departure crashes:
- One (1) rollover crash occurred at night when a southbound driver approaching Florida Parkway (South) lost control on wet pavement (travelling approximately 60 mph ) and departed the roadway to the right prior to overturning.
- Two (2) fixed-object crashes occurred at night when northbound drivers approaching Rider Circle lost control (travelling approximately 55 and 50 mph ) and struck a median light pole and fire hydrant. The former occurred on wet pavement.
- Two (2) fixed-object crashes occurred at night when southbound drivers approaching Buttonwood Drive lost control (travelling approximately 60 and $75 \mathrm{mph})$ and struck the LYNX bus stop. One crash involved a police pursuit.
- One (1) rollover crash occurred at night when a southbound vehicle approaching Buttonwood Drive lost control (travelling approximately 50 mph ) and departed the roadway to the right prior to overturning.
The following trends regarding access management related crashes, crashes within curves, lane departure crashes and pedestrian/bicycles crashes were found:


## Access Management Crashes

There was a total of 45 access management related crashes that occurred throughout the corridor. Access management crashes include collisions resulting from controlled movement through median openings, particularly with regard to sidestreet traffic movements.

Trotters Circle (North)/Florida Parkway (North):

- Four (4) angle crashes occurred when westbound drivers struck northbound vehicles and one (1) angle crash occurred when a westbound driver struck a southbound vehicle; two (2) of these crashes occurred at night.
- One (1) angle crash occurred on wet pavement when an eastbound driver struck a southbound vehicle.
- One (1) left-turn crash occurred when a westbound left-turning driver struck an eastbound vehicle.
- One (1) side-swipe crash occurred when an eastbound left-turning driver struck a northbound vehicle in the left through lane. This crash is also considered a curve-related lane departure crash.


## Competition Drive/Pine Island Circle:

- Three (3) angle crashes occurred when eastbound drivers struck two (2) northbound and one (1) southbound vehicle.
- One (1) angle crash occurred at night when a westbound driver struck a southbound vehicle
- One (1) side-swipe crash occurred when a westbound left-turning driver from Pine Island Drive failed to yield to a southbound vehicle in the left through lane.


## Lakepointe Circle:

- Three (3) angle crashes occurred when eastbound drivers exiting the BP gas station across from Lakepointe Circle struck southbound through vehicles. Two (2) of these crashes occurred at night.
- One (1) angle crash occurred at night when a westbound driver from Lakepointe Circle struck a southbound vehicle.


## Ventura Downs/Buenaventura Center commercial plazas:

- Eight (8) angle crashes occurred when eastbound drivers from Ventura Downs struck southbound vehicles; three (3) of these crashes occurred at night.
- Two (2) angle crashes occurred (one (1) at night and one (1) on wet pavement) when eastbound vehicles from Ventura Downs made through movements across Buenaventura Boulevard toward Buenaventura Center and were struck by northbound vehicles; only left and right turns are permitted from this Ventura Downs exit.
- One (1) angle crash occurred on wet pavement when a westbound driver making an improper left-turn from Buenaventura Center struck a southbound vehicle.
- One (1) side-swipe crash occurred when an eastbound left-turning driver from Ventura Downs struck a northbound through vehicle in the outside lane.
- Two (2) rear-end crashes occurred at night when an eastbound left-turning driver from Ventura Downs struck a northbound through vehicle.
- One (1) rear-end crash occurred on wet pavement when southbound traffic stopped for an eastbound emergency vehicle from Ventura Downs.


## Other Locations:

- One (1) rear-end crash occurred at the intersection of Gait Court/Bridle Court when a westbound left-turning driver struck a westbound left-turning vehicle staged in the median.
- One (1) fixed-object and one (1) angle crash occurred at Trotters Circle (South) when eastbound left-turning drivers struck southbound vehicles. The fixed-object crash is also considered a lane departure crash.
- One (1) angle crash occurred at the intersection of Wagon Circle (South) when a westbound left-turning driver struck a southbound vehicle.
- Four (4) angle crashes occurred at the Briarwood Drive intersection when westbound leftturning drivers struck three (3) northbound and one (1) southbound vehicle; one (1) crash occurred at night and two (2) occurred on wet pavement.
- One (1) angle crash occurred when an eastbound left-turning driver exiting the Family Dollar/O'Reilly Auto Parts parking lot struck a southbound vehicle.


## Curve Related Crashes

Curve related crashes include those crashes where vehicles failed to safely negotiate the curves along Buenaventura Boulevard, particularly within the six (6) primary curves mentioned in Table 1. There was a total of 52 curve-related crashes throughout the study corridor:

## Between Florida Parkway (South) and Gait Court/Bridle Court:

- Two (2) head-on crashes occurred at the Gait Court/Bridle Court intersection when southbound drivers lost control and traveled into the northbound lanes. One (1) of these crashes occurred at night and on wet pavement.
- One (1) fixed-object crash occurred when a southbound driver fell asleep and traveled onto the right shoulder, striking a road sign at the Gait Court/Bridle Court intersection.
- One (1) previously mentioned speed-related rollover crash approaching Florida Parkway (South).


## Curve through Rider Circle:

- Two (2) fixed-object crashes occurred, one (1) on wet pavement and one (1) at night, when a northbound driver was cut off by a phantom vehicle and struck a fire hydrant and median light pole respectively.
- One (1) rollover crash occurred at night when a northbound driver lost control and departed the roadway to the right.
- One (1) fixed-object crash occurred at night on wet pavement when a southbound driver was cut off by a phantom vehicle and struck a median light pole.
- Two (2) previously-mentioned speed-related fixed-object crashes.

Curve through Wagon Circle (South):

- One (1) rear-end crash occurred after a southbound driver in the inside lane lost control.
- One (1) off-road crash occurred at night on wet pavement when a northbound driver lost control and traveled into a drainage ditch north of the intersection.
- One (1) fixed-object crash occurred at night on wet pavement when a southbound driver exiting the curve lost control and struck a median light pole.


## Curve Through Wagon Circle (North):

- Four (4) fixed-object crashes and one (1) rollover crash occurred when southbound drivers lost control and departed the roadway, striking trees, utility boxes, guardrail, and property fences. These crashes include two (2) previously-mentioned fatalities. Four (4) of the crashes occurred at night and two (2) of those occurred on wet pavement.
- One (1) side-swipe crash occurred when a southbound driver in the outside lane lost control after striking a bump in the road.
- Six (6) fixed-object crashes occurred when southbound drivers lost control and struck trees and light poles in the median. Two (2) crash occurred at night on wet pavement, two (2) occurred at night, and one (1) occurred on wet pavement.
- One (1) fixed-object crash occurred when a southbound driver approaching the intersection lost control and struck a light pole.


## Curve Through Trotters Circle (North)/Florida Parkway (North):

- One (1) side-swipe crash occurred when a northbound driver failed to remain in the inside lane and struck a southbound left-turning vehicle waiting for traffic to clear.
- One (1) fixed-object crash occurred at night on wet pavement when a northbound driver lost control and struck a median light pole north of the intersection.
- One (1) fixed-object crash occurred when a southbound driver lost control and struck an electrical box in the median north of the intersection.


## Curve Through Competition Drive/Pine Island Circle:

- Eleven (11) crashes occurred approaching Buttonwood Drive:
- Eight (8) fixed-object crashes, including two (2) previously mentioned, occurred when seven (7) southbound drivers lost control and one (1) southbound driver fell asleep. One (1) of the crashes occurred at night on wet roads, four (4) occurred at night, and one (1) (fell asleep) occurred on wet roads during the day.
- One (1) head-on crash occurred on wet pavement when a southbound driver lost control and struck a northbound vehicle.
- One (1) previously-mentioned fatal head-on crash.
- One (1) previously-mentioned speed-related rollover crash.
- Eight (8) crashes occurred approaching Competition Drive:
- Three (3) side-swipe crashes occurred when a southbound driver in the inside lane lost control and struck the outside vehicle. One (1) crash occurred on wet pavement.
- One (1) head-on crash occurred on wet pavement when a southbound driver lost control and struck a northbound vehicle.
- One (1) fixed-object crash occurred on wet pavement when a southbound driver lost control while attempting to avoid a side-swipe crash with another vehicle appearing to lose control.
- Three (3) rollover crashes occurred when southbound drivers lost control and departed the roadway to the right. Two (2) of the crashes occurred at night.


## Other Locations:

- Two (2) fixed-object crashes and one (1) rollover crash occurred when northbound drivers lost control and struck median light poles or overturned in the median north of the Family Dollar/O'Reilly Auto Parts entrance. All three (3) crashes occurred at night, one (1) occurred on wet pavement.


## Lane Departure Crashes

There was a total of 84 lane-departure crashes throughout the study corridor. Lane departure crashes include those occurring when vehicles either depart the roadway or depart their travel lane. In addition to the crashes below, 51 curve-related crashes (including the six (6) speedrelated crashes) and two (2) access-management crashes are also counted as lane departure crashes.

- Twenty-two (22) side-swipe crashes occurred, including: 18 attributed to improper lane changes; one (1) to careless driving; one (1) to failure to use the designated lane; one (1) to failure to yield the right of way; and one (1) to mechanical failure.
- Four (4) fixed-object crashes occurred, including: two (2) attributed to mechanical failure, one (1) to a loss of control, and one (1) to reckless driving (driving the wrong way).
- Two (2) head-on crashes were attributed to a loss of control and a DUI.
- One (1) off-road crash is attributed to improper lane change.
- One (1) rear-end crash is attributed to improper lane change.
- One (1) rollover crash is attributed to careless driving.
- In total, 44 lane departure crashes occurred at night and 24 occurred on wet pavement.


## Pedestrian/Bicycle Crashes

Pedestrians and/or bicyclists were involved in 13 crashes, including one (1) fatal pedestrian crash previously mentioned.

## Florida Parkway (South):

- Two (2) pedestrian crashes occurred when eastbound and southbound drivers struck pedestrians. One (1) crossing against the steady red hand indication and one (1) with the flashing hand indication across the west and south crosswalks respectively.
- One (1) bicycle crash occurred when an eastbound right-tuning driver failed to yield to a bicycle in the west crosswalk. The driver was completing a right-turn on red.
Trotters Circle (North)/Florida Parkway (North):
- One (1) bicycle crash occurred when a southbound right-turning vehicle struck a northbound left-turning bicyclist approaching from the northbound outside travel lane.
- One (1) pedestrian crash occurred when a southbound left-turning vehicle struck a southbound pedestrian on the east leg of the intersection; there is no marked crosswalk across this leg of the intersection.


## Osceola Parkway:

- One (1) pedestrian crash occurred when an eastbound right-turn-on-red vehicle failed to yield to a pedestrian in the south crosswalk.
- One (1) bicycle crash occurred when southbound vehicle struck a bicyclist in the south crosswalk crossing against the steady hand indication


## Other Locations:

- One (1) rear-end crash occurred when a driver approaching Gait Court, yielding to a pedestrian departing from the LYNX bus to cross Buenaventura Boulevard, was struck by a vehicle attempting to pass the stopped bus. There is no marked crosswalk across Buenaventura Boulevard at this intersection.
- One (1) bicycle crash occurred north of Rider Circle when a northbound driver lost control and struck a northbound bicyclist to the right of the roadway.
- One (1) bicycle crash occurred at night, north of Wagon Circle (South) when a southbound vehicle struck a southbound bicyclist in the outside travel lane.
- One (1) bicycle crash occurred south of Wagon Circle (North) when a northbound driver struck a southbound bicyclist in the outside travel lane.
- One (1) bicycle crash occurred at Competition Drive when a northbound left-turning driver struck a northbound bicycle in the marked crosswalk.
- One (1) previously mentioned fatal pedestrian crash occurred at night when a pedestrian was struck by a southbound driver while crossing west toward the LYNX bus stop at the Ventura Downs commercial plaza (south of Osceola Parkway).
A detailed collision summary is provided in Table 2 on the following pages and graphically depicted as Figure 3.

Table 2
Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway
FLORIDA DEPARTMENT OF TRANSPORTATION

| COLLISION SUMMARY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Section: |  |  |  |  |  |  |  | State Road: <br> Milepost: | Buenaventura Boulevard |  |  |  |  |  |  | County: |  | sceola |
| Intersecting route: |  | From Florida Parkway (South) to Osceola Parkway |  |  |  |  |  |  |  |  |  |  |  |  |  | Data by: |  | CAR |
| Study period: |  | 1/1/2012 to |  | 12/31/2018 |  | INJURY SEVERITY | PROPERTY DAMAGE | HARMFUL EVENT | DUI | DAY / NIGHT | WET/ DRY | FORM | $\begin{array}{\|c\|} \hline \text { SPEED- } \\ \text { RELATED } \end{array}$ | ACCESS <br> MANAGEMENT | CURVERELATED | Date: |  | 6/17/2019 |
| NO. | DATE | DAY | TIME | FATAL | InJury |  |  |  |  |  |  |  |  |  |  | $\begin{gathered} \text { LANE } \\ \text { DEPATURE } \end{gathered}$ | $\begin{aligned} & \text { PED/ } \\ & \text { BIKE } \end{aligned}$ | CONTRIBUTING CAUSE |
| 1 | 01/01/12 | Sunday | 5:40 | 0 | 0 | 1-None | \$5,000 | Rollover | No | Night | Dry | Long | No | No | Yes | Yes | No | Lost Control |
| 2 | 01/03/12 | Tuesday | 15:53 | 0 | 0 | 1-None | \$750 | Side-Swipe | No | Day | Dry | Long | No | No | No | Yes | No | Improper Lane Change |
| 3 | 01/13/12 | Friday | 21:32 | 0 | 0 | 1-None | \$650 | Rear-End | No | Night | Dry | Short | No | No | No | No | No | Careless Driving |
| 4 | 01/27/12 | Friday | 16:35 | 0 | 2 | 2-Possible | \$1,000 | Side-Swipe | No | Day | Dry | Long | No | Yes | No | No | No | FTYROW |
| 5 | 02/18/12 | Saturday | 1:37 | 0 | 0 | 1-None | \$3,000 | Fixed-Object | No | Night | Wet | Long | No | No | Yes | Yes | No | Lost Control |
| 6 | 02/27/12 | Monday | 17:53 | 0 | 0 | 1-None | \$700 | Rear-End | No | Night | Wet | Short | No | No | No | No | No | Careless Driving |
| 7 | 02/27/12 | Monday | 23:10 | 0 | 0 | 1-None | \$2,000 | Side-Swipe | No | Night | Dry | Short | No | No | No | Yes | No | Improper Lane Change |
| 8 | 03/07/12 | Wednesday | 20:30 | 0 | 1 | 4-Incapacitating | \$6,000 | Angle | No | Night | Dry | Long | No | Yes | No | No | No | FTYROW |
| 9 | 03/13/12 | Tuesday | 20:55 | 0 | 2 | 3-Non-Incapacitating | \$9,000 | Right-Turn | No | Night | Dry | Long | No | No | No | No | No | Disregarded Traffic Control |
| 10 | 03/25/12 | Sunday | 15:14 | 0 | 0 | 1-None | \$4,700 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 11 | 04/14/12 | Saturday | 2:50 | 0 | 0 | 1-None | \$2,310 | Fixed-Object | No | Night | Dry | Long | No | No | Yes | Yes | No | Lost Control |
| 12 | 05/31/12 | Thursday | 16:55 | 0 | 1 | 3-Non-Incapacitating | \$10,000 | Rollover | No | Day | Dry | Long | No | No | Yes | Yes | No | Lost Control |
| 13 | 06/10/12 | Sunday | 22:45 | 1 | 2 | 5-Fatal | \$8,000 | Fixed-Object | No | Night | Wet | Long | No | No | Yes | Yes | No | Lost Control |
| 14 | 06/12/12 | Tuesday | 11:32 | 0 | 0 | 1-None | \$75 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 15 | 06/18/12 | Monday | 17:53 | 0 | 0 | 1-None | \$6,000 | Rear-End | No | Day | Dry | Short | No | No | No | No | No | Careless Driving |
| 16 | 06/20/12 | Wednesday | 1:58 | 0 | 0 | 1-None | \$13,000 | Angle | Yes | Night | Dry | Long | No | No | No | No | No | DUI |
| 17 | 06/21/12 | Thursday | 14:20 | 0 | 0 | 1-None | \$400 | Rear-End | No | Day | Dry | Short | No | No | No | No | No | Careless Driving |
| 18 | 06/23/12 | Saturday | 13:00 | 0 | 0 | 1-None | \$3,500 | Side-Swipe | No | Day | Dry | Long | No | Yes | No | No | No | FTYROW |
| 19 | 07/04/12 | Wednesday | 15:30 | 0 | 6 | 3-Non-Incapacitating | \$8,000 | Head-On | No | Day | Wet | Long | No | No | Yes | Yes | No | Lost Control |
| 20 | 07/13/12 | Friday | 16:40 | 0 | 0 | 1-None | \$500 | Fixed-Object | No | Day | Dry | Long | No | No | No | Yes | No | Reckless Driving |
| 21 | 07/21/12 | Saturday | 18:20 | 0 | 3 | 2-Possible | \$10,000 | Angle | No | Day | Dry | Long | No | Yes | No | No | No | Disregarded Traffic Control |
| 22 | 07/24/12 | Tuesday | 11:05 | 0 | 0 | 1-None | \$4,300 | Side-Swipe | No | Day | Dry | Long | No | No | No | Yes | No | Improper Lane Change |
| 23 | 07/27/12 | Friday | 15:37 | 0 | 0 | 1-None | \$0 | Angle | No | Day | Dry | Short | No | No | No | No | No | Reckless Driving |
| 24 | 08/03/12 | Friday | 13:00 | 0 | 1 | 3-Non-Incapacitating | \$9,000 | Angle | No | Day | Dry | Long | No | No | No | No | No | Disregarded Traffic Control |
| 25 | 08/07/12 | Tuesday | 14:30 | 0 | 0 | 1-None | \$4,000 | Rear-End | No | Day | Dry | Short | No | No | No | No | No | Careless Driving |
| 26 | 08/19/12 | Sunday | 2:32 | 0 | 0 | 1-None | \$6,500 | Fixed-Object | No | Night | Dry | Short | No | No | No | No | No | Careless Driving |
| 27 | 09/01/12 | Saturday | 0:52 | 0 | 1 | 2-Possible | \$11,000 | Fixed-Object | No | Night | Dry | Long | No | No | Yes | Yes | No | Lost Control |
| 28 | 09/03/12 | Monday | 18:50 | 0 | 0 | 1-None | \$1,100 | Rear-End | No | Day | Dry | Short | No | No | No | No | No | Careless Driving |
| 29 | 09/12/12 | Wednesday | 18:23 | 0 | 1 | 3-Non-Incapacitating | \$7,000 | Fixed-Object | No | Day | Wet | Long | No | No | Yes | Yes | No | Lost Control |
| 30 | 09/29/12 | Saturday | 6:00 | 0 | 0 | 1-None | \$2,325 | Fixed-Object | No | Night | Dry | Long | No | No | Yes | Yes | No | Lost Control |
| 31 | 10/05/12 | Friday | 11:36 | 0 | 1 | 2-Possible | \$8,000 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 32 | 10/09/12 | Tuesday | 17:19 | 0 | 1 | 3-Non-Incapacitating | \$9,000 | Left-Turn | No | Day | Dry | Long | No | No | No | No | No | FTYROW |
| 33 | 11/21/12 | Wednesday | 3:00 | 0 | 1 | 3-Non-Incapacitating | \$3,450 | Angle | Yes | Night | Dry | Long | No | No | No | No | No | DUI |
| 34 | 12/30/12 | Sunday | 18:07 | 0 | 0 | 1-None | \$3,500 | Left-Turn | No | Night | Dry | Short | No | No | No | No | No | Disregarded Traffic Control |
| 35 | 01/16/13 | Wednesday | 14:23 | 0 | 1 | 3-Non-Incapacitating | \$2,000 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |

(continued)
Source: Florida Department of Transportation's CAR Database and University of Florida's Signal Four Analytics

Table 2 Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway
FLORIDA DEPARTMENT OF TRANSPORTATION

| COLLISION SUMMARY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Section: |  |  |  |  |  |  |  | State Road: | Buenaventura Boulevard |  |  |  |  |  |  | County: |  | Osceola |
| Intersecting route: |  | From Florida Parkway (South) to Osceola Parkway |  |  |  |  |  | Milepost: |  |  |  |  |  |  |  | Data by: |  | CAR |
| Study period: |  | 1/1/2012 to |  | 12/31/2018 |  |  |  | HARMFUL EVENT | DUI | DAY / NIGHT | WET/ DRY | FORM | $\begin{array}{\|c\|} \hline \text { SPEED- } \\ \text { RELATED } \end{array}$ | ACCESS- <br> MANAGEMENT | CURVERELATED | Date: |  | 6/17/2019 |
| NO. | DATE | DAY | TIME | FATAL | InJURY | INJURY SEVERITY | $\begin{array}{\|c\|} \hline \text { PROPERTY } \\ \text { DAMAGE } \end{array}$ |  |  |  |  |  |  |  |  | $\begin{array}{c\|} \hline \text { LANE } \\ \text { DEPATURE } \end{array}$ | $\begin{aligned} & \begin{array}{l} \text { PED/ } \\ \text { BIKE } \end{array} \end{aligned}$ | CONTRIBUTING CAUSE |
| 36 | 02/03/13 | Sunday | 15:17 | 0 | 0 | 1-None | \$600 | Rear-End | No | Day | Dry | Short | No | No | No | No | No | Careless Driving |
| 37 | 03/10/13 | Sunday | 15:16 | 0 | 1 | 3-Non-Incapacitating | \$750 | Rollover | No | Day | Dry | Long | No | No | No | Yes | No | Careless Driving |
| 38 | 03/30/13 | Saturday | 2:54 | 0 | 0 | 1-None | \$10,700 | Fixed-Object | No | Night | Dry | Long | Yes | No | Yes | Yes | No | Reckless Driving |
| 39 | 04/02/13 | Tuesday | 22:24 | 0 | 3 | 2-Possible | \$6,000 | Angle | No | Night | Dry | Long | No | Yes | No | No | No | Disregarded Traffic Control |
| 40 | 04/15/13 | Monday | 14:37 | 0 | 0 | 1-None | \$0 | Rear-End | No | Day | Dry | Short | No | No | No | No | No | Following Too Closely |
| 41 | 04/25/13 | Thursday | 10:03 | 0 | 2 | 3-Non-Incapacitating | \$7,000 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 42 | 05/03/13 | Friday | 21:37 | 0 | 1 | 3-Non-Incapacitating | \$6,000 | Right-Turn | No | Night | Wet | Long | No | No | No | No | No | FTYROW |
| 43 | 05/12/13 | Sunday | 18:00 | 0 | 0 | 1-None | \$3,000 | Left-Turn | No | Day | Dry | Short | No | No | No | No | No | FTYROW |
| 44 | 05/20/13 | Monday | 19:30 | 0 | 0 | 1-None | \$13,500 | Fixed-Object | No | Day | Wet | Long | No | No | Yes | Yes | No | Lost Control |
| 45 | 06/03/13 | Monday | 15:23 | 0 | 2 | 4-Incapacitating | \$11,700 | Angle | No | Day | Dry | Long | No | Yes | No | No | No | Disregarded Traffic Control |
| 46 | 06/05/13 | Wednesday | 18:00 | 0 | 0 | 1-None | \$1,500 | Angle | No | Day | Wet | Long | No | Yes | No | No | No | FTYROW |
| 47 | 06/09/13 | Sunday | 17:31 | 0 | 0 | 1-None | \$3,300 | Rear-End | No | Day | Wet | Long | No | Yes | No | No | No | Careless Driving |
| 48 | 06/11/13 | Tuesday | 21:50 | 0 | 0 | 1-None | \$3,000 | Side-Swipe | No | Night | Dry | Short | No | No | No | Yes | No | Improper Lane Change |
| 49 | 06/17/13 | Monday | 19:15 | 0 | 1 | 4-Incapacitating | \$25 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 50 | 06/18/13 | Tuesday | 18:09 | 0 | 1 | 4-Incapacitating | \$4,300 | Rear-End | Yes | Day | Dry | Long | No | No | No | No | No | DUI |
| 51 | 07/11/13 | Thursday | 18:37 | 0 | 1 | 2-Possible | \$2,000 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 52 | 07/12/13 | Friday | 14:53 | 0 | 0 | 1-None | \$1,000 | Rear-End | No | Day | Wet | Short | No | No | No | No | No | Careless Driving |
| 53 | 07/20/13 | Saturday | 13:58 | 0 | 0 | 1-None | \$16,000 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 54 | 09/03/13 | Tuesday | 16:18 | 0 | 0 | 1-None | \$425 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 55 | 09/29/13 | Sunday | 21:05 | 0 | 2 | 2-Possible | \$2,500 | Angle | No | Night | Dry | Long | No | Yes | No | No | No | Disregarded Traffic Control |
| 56 | 09/30/13 | Monday | 16:25 | 0 | 0 | 1-None | \$4,500 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 57 | 10/03/13 | Thursday | 22:14 | 0 | 0 | 1-None | \$8,000 | Left-Turn | No | Night | Dry | Long | No | No | No | No | No | FTYROW |
| 58 | 10/04/13 | Friday | 17:16 | 0 | 0 | 1-None | \$2,000 | Rear-End | Yes | Day | Dry | Long | No | No | No | No | No | DUI |
| 59 | 10/29/13 | Tuesday | 8:20 | 0 | 0 | 1-None | \$10 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 60 | 10/31/13 | Thursday | 23:59 | 0 | 1 | 2-Possible | \$11,638 | Fixed-Object | No | Night | Dry | Long | Yes | No | Yes | Yes | No | Reckless Driving |
| 61 | 11/20/13 | Wednesday | 15:22 | 0 | 0 | 1-None | \$8,000 | Side-Swipe | No | Day | Dry | Short | No | Yes | No | No | No | Improper Turn |
| 62 | 12/02/13 | Monday | 9:40 | 0 | 1 | 3-Non-Incapacitating | \$4,500 | Left-Turn | No | Day | Dry | Long | No | No | No | No | No | FTYROW |
| 63 | 12/05/13 | Thursday | 18:12 | 0 | 0 | 1-None | \$3,500 | Angle | No | Night | Dry | Short | No | No | No | No | No | Careless Driving |
| 64 | 12/14/13 | Saturday | 20:33 | 0 | 1 | 3-Non-Incapacitating | \$6,000 | Rear-End | No | Night | Dry | Long | No | No | No | No | No | Careless Driving |
| 65 | 12/21/13 | Saturday | 13:32 | 0 | 0 | 1-None | \$1,500 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 66 | 12/23/13 | Monday | 21:02 | 0 | 0 | 1-None | \$6,000 | Side-Swipe | No | Night | Dry | Short | No | No | No | Yes | No | Improper Turn |
| 67 | 12/24/13 | Tuesday | 16:30 | 0 | 1 | 4-Incapacitating | \$1,000 | Bicycle | No | Day | Dry | Long | No | No | No | No | Yes | Lost Control |
| 68 | 12/25/13 | Wednesday | 14:15 | 0 | 1 | 2-Possible | \$0 | Pedestrian | No | Day | Dry | Long | No | No | No | No | Yes | Disregarded Traffic Control |
| 69 | 01/02/14 | Thursday | 10:32 | 0 | 1 | 2-Possible | \$0 | Rear-End | No | Day | Dry | Long | No | No | No | No | No | Careless Driving |
| 70 | 01/06/14 | Monday | 15:52 | 0 | 1 | 2-Possible | \$6,000 | Side-Swipe | No | Day | Dry | Long | No | No | No | Yes | No | Careless Driving |

(continued)
Source: Florida Department of Transportation's CAR Database and University of Florida's Signal Four Analytics

Table 2 Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway
 (continued)

Source: Florida Department of Transportation's CAR Database and University of Florida's Signal Four Analytics

Table 2
Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway
FLORIDA DEPARTMENT OF TRANSPORTATION

(continued) Source: Florida Department of Transportation's CAR Database and University of Florida's Signal Four Analytics

Table 2 Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway
FLORIDA DEPARTMENT OF TRANSPORTATION
 (continued)

Source: Florida Department of Transportation's CAR Database and University of Florida's Signal Four Analytics

Table 2 Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway


Table 2 Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway


Table 2
Collision Data
Buenaventura Boulevard: From Florida Parkway to Osceola Parkway
FLORIDA DEPARTMENT OF TRANSPORTATION


Source: Florida Department of Transportation's CAR Database and University of Florida's Signal Four Analytics







## QUALITATIVE ASSESSMENT

The study corridor of Buenaventura Boulevard from Florida Parkway to Osceola Parkway was observed by a registered professional engineer on a weekday during the morning and afternoon peak hours to evaluate lane departure crashes within curves and other crash trends. The goal of the observations was to determine the need for any improvements to enhance the safety and efficiency of the corridor.

## Operations:

Operations include the efficiency of operation and interaction of motor vehicles, pedestrians, and bicycles along the corridor.

- Buenaventura Boulevard is a four-lane divided roadway with limited sections of curb and gutter throughout. The median varies from grassed, to painted separators, to raised concrete separators/islands. Sidewalks are provided along both sides of the roadway, except on the east side of the roadway from north of Wagon Circle (north) to Briarwood Drive and from Buttonwood Drive to Competition Drive/Pine Island Circle. Roadway lighting is provided within the median from Florida Parkway (south) to Competition Drive and intermittently in the median and shoulder from Competition Drive to Osceola Parkway.
- The area surrounding Buenaventura Boulevard is primarily residential with commercial land uses concentrated at the north end of the corridor.
- There are three (3) signalized intersections within the study corridor: Florida Parkway (south), Buttonwood Drive and Osceola Parkway. All unsignalized intersections have full median openings (allowing all movements).
- Multiple Lynx bus stops are provided along both sides of Buenaventura Boulevard throughout the study corridor (Lynx Routes 18 and 155). Pedestrian/bicycle activity was attracted/generated at the bus stop locations throughout the corridor. The bus stops are located adjacent to the roadway; however, the sidewalks are generally 15 to 60 feet from the edge of pavement. Most of the bus stop locations did not have a connection to the adjacent sidewalk, resulting in pedestrians/bicyclists walking along the roadway edge to access the bus stop. It is recommended the City coordinate with Lynx in order to provide sidewalk connections between the bus stop locations and the existing sidewalk.
- Several schools are within one mile of the study corridor: Ventura Elementary School (east of Buenaventura Boulevard); Boggy Creek Elementary School and Parkway Middle School (along Florida Parkway, west of Buenaventura Boulevard). Turning movement counts were collected while school was in session; however, field reviews were conducted during the summer when school was not in session.
- The signalized intersection of Buenaventura Boulevard at Florida Parkway provides access to all three schools and the counts showed a total of 45 pedestrians and 21 bicyclists crossing at the intersection during the peak hours (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.). SCHOOL pavement messages are provided on all approaches to the signalized intersection. The current pedestrian WALK and flashing DON'T WALK intervals were evaluated at the signalized intersections and determined to be adequate based on MUTCD guidelines and the existing crosswalk lengths.
- Archie Gordon Memorial Park is located approximately 2,000 feet north of Florida Parkway. This park includes sports fields (soccer, football and baseball), walking trails, playground, pavilions, and concessions. Several pedestrians were observed accessing


#### Abstract

the park and using the walking trails throughout various times of the day. Sidewalks are provided along both sides of Buenaventura Boulevard, except for a section along the east side of the roadway from north of Wagon Circle (north) to Briarwood Drive and from Buttonwood Drive to Competition Drive/Pine Island Circle. Pedestrians were observed walking in the grass in order to access the sidewalk closer to the park. Some pedestrians were observed crossing Buenaventura Boulevard midblock, walking along the sidewalk on the west side of the roadway and then crossing midblock again to access the park. Based on the surrounding residential development, observed pedestrian activity and the general walkability of the corridor, it is recommended a sidewalk be constructed along the east side of the roadway from north of Wagon Circle (north) to Briarwood Drive and from Buttonwood Drive to Competition Drive, creating a continuous sidewalk connection throughout the entire corridor.


## Speed Zone Study:

Spot speed checks were conducted at two (2) locations along the corridor. Many factors affect driver behavior on the roadway, such as proximity of roadside hazards, the frequency of driveways or side streets, roadway geometry and/or the presence of pedestrians, etc. Therefore, the locations for the speed analysis were chosen where vehicles were travelling at unrestricted free flow speeds.
Two (2) of the common descriptive statistical measures utilized in determining the prevailing speed are the $85^{\text {th }}$ percentile speed and the 10 mph pace. The $85^{\text {th }}$ percentile speed is the speed at or below which 85 percent of the free-flowing vehicles are travelling. The 10 mph pace is the 10 mph range containing the highest number of vehicles from the study data. The $85^{\text {th }}$ percentile speed and 10 mph pace were calculated for each of the two (2) locations as shown in Table 3 with details included in the Appendix.

Table 3
Spot Speed Study
Buenaventura Boulevard from Florida Parkway to Osceola Parkway

| Site | Location | Posted Speed <br> Limit (MPH) <br> NB/SB | 85th <br> Percentile <br> Speed (MPH) | Combined <br> 85th <br> Percentile <br> Speed <br> (MPH) | Difference | Combined <br> 10 MPH <br> Pace <br> (MPH) | Difference | Within <br> Guidelines? |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NB | SB |  |  |  |  |  |  |  |  |
| S1 | Between Rider Cir <br> and Trotters Cir | $35 / 40$ | 45 | 46 | 45 | $+10(\mathrm{NB})$ | $+5(\mathrm{SB})$ | $36-45$ | +10 | No |
| S2 | Between Lakepoint <br> Cir and Competition <br> Dr | $40 / 40$ | 48 | 48 | 48 | +8 | $41-50$ | +10 | No |  |

Per the FDOT Speed Zoning manual, "with rounding, the posted speed limit should not differ from the $85^{\text {th }}$ percentile speed or upper limit of the $10-\mathrm{mph}$ pace (whichever is less) by more than 3 mph . Speed limits of more than 8 mph below the $85^{\text {th }}$ percentile speed is not authorized. A speed limit of 4 to 8 mph less than the $85^{\text {th }}$ percentile speed shall be authorized if supported by a supplemental investigation." Additionally, the posted speed should not exceed the design speed of the facility. Based on the data in Table 3, the combined $85^{\text {th }}$ percentile speed ranged between 5 and 10 mph above the posted speed limit. It should be noted Spot Speed Location 1 is located approximately 150 feet south of Rider Circle where the northbound speed limit is 35 mph and the southbound speed limit is 40 mph .

In addition to the spot speed data, other corridor characteristics were considered with regard to the posted speed limits. The roadway is currently a four-lane divided facility with travel lanes varying from 11 to 12 feet with inside grass medians and outside grass shoulders (at-grade). Much of the corridor is curved with no superelevation change through the corridor; it should be noted that many of the major curves through the corridor have insufficient radii or superelevation compared to the Florida Design Manual (FDM) Chapter 210 for arterial and collector roadway geometry. It is recommended the superelevation through the curves be modified during a future roadway resurfacing project.
From Florida Parkway (south) to Competition Drive/Pine Island Circle, the adjacent properties are primarily residential with Archie Gordon Memorial Park serving as a major pedestrian attractor. From Competition Drive/Pine Island Circle to Osceola Parkway, the adjacent properties are primarily commercial with Ventura Downs and Osceola Center commercial plazas serving as pedestrian attractors.

There were six (6) speed-related crashes throughout the corridor involving vehicles travelling between 10 and 35 mph above the posted speed limits. All the speed-related crashes occurred within the curves along the corridor.

Based on the data collected, crash history, field observations, engineering judgement, and existing roadway conditions, it is recommended to reduce the existing speed limits along Buenaventura Boulevard from Florida Parkway to Osceola Parkway to $\mathbf{3 5} \mathbf{~ m p h}$. In order to improve awareness of the posted speed limit, it is recommended speed feedback signs be installed along the corridor in the northbound direction (south of Rider Circle and Briarwood Drive) and southbound direction (south of Lakepointe Circle and north of Wagon Circle). To further improve driver compliance with the posted speed limit, it is recommended lane widths be reduced by 1 foot. This will have the added benefit of providing 2-foot paved shoulders throughout the corridor, reducing the likelihood of off-road crashes without impacting existing drainage.

## Safety:

Vehicle, pedestrian, and bicycle safety along the study corridor was assessed through review of crash reports, identification of significant crash trends, and correlation to field conditions.
The following are observations related to the safety of the corridor based on the various field reviews:

- Based on a review of crash data for Buenaventura Boulevard for the 7-year period between January 1, 2012 and December 31, 2018, 270 crashes were reported, resulting in five (5) fatalities, 180 injuries, and $\$ 1,372,358$ in estimated property damage.
- The predominant crash types were rear-end and angle crashes. Seven (7) bicyclist and five (5) pedestrian crashes occurred. One (1) pedestrian crash resulted in a fatality and occurred when a pedestrian was crossing Buenaventura Boulevard, south of Osceola Parkway.
- Three (3) fatal crashes occurred along the corridor; two (2) fixed object crashes and one (1) head-on crash. The fixed object crashes occurred at night and involved drivers travelling off the road and striking a tree or guardrail. The head-on crash resulted in two (2) fatalities when a driver lost control; drugs were noted to be a contributing factor in this crash.
- Signalized intersections along the corridor were reviewed:
- Florida Parkway serves as a crossing location for school-aged pedestrians and bicyclists. NO TURN ON RED static signs are provided for the southbound and eastbound approaches. Ten (10) angle, four (4) left-turn and three (3) pedestrian/bicycle collisions were reported at the intersection. Conflicts between vehicles and pedestrians crossing (within the crosswalks) were observed, specifically with drivers failing to yield to pedestrians. It is recommended backplates with retroreflective sheeting and blank out signs be added to the signal. It is assumed the existing signal is not structurally sufficient to accommodate the additional loading of these recommended improvements, therefore it is recommended the existing traffic signal be rebuilt to include YIELD TO PEDS blank-out sign on each approach, backplates on all signal heads and 4section flashing yellow arrow signal heads for northbound and southbound protected/permissive left-turn movements. Additionally, pedestrian features should be reconstructed to include high emphasis crosswalks on all approaches, detectable warning surfaces and new audible pedestrian signals. The blank-out sign should illuminate "YIELD TO PEDS" when the pedestrian phase is activated (during all hours of the day).
- Buttonwood Drive also serves as a crossing location for school-aged children (crossing guards were observed) with crosswalks provided across the south and west legs of the intersection. Six (6) angle crashes have been reported and occurred as a result of drivers disregarding the traffic signal. It is recommended backplates with retroreflective sheeting and blank out signs be added to the signal. It is assumed the existing signal is not structurally sufficient to accommodate the additional loading of these recommended improvements, therefore it is recommended the existing traffic signal be rebuilt to include YIELD TO PEDS blank-out sign on each approach, backplates on all signal heads and 4section flashing yellow arrow signal heads for northbound and southbound protected/permissive left-turn movements. Additionally, pedestrian features should be reconstructed to include high emphasis crosswalks on all approaches, detectable warning surfaces and new audible pedestrian signals. The blank-out sign should illuminate "YIELD TO PEDS" when the pedestrian phase is activated (during all hours of the day).
- Osceola Parkway is a major signalized intersection with dual left-turn lanes and separate right-turn lanes on the northbound, southbound and eastbound approaches. The predominant crash type is rear-end collisions. Backplates are provided on the eastbound and westbound approaches. It is recommended backplates with retroreflective sheeting be added to the northbound and southbound signal heads, providing one signal head per lane; additionally, the stop bar and crosswalk pavement markings are worn/faded in various locations. It is recommended the pavement marking be refreshed (to include high emphasis crosswalks on all approaches).
- The corridor was reviewed from an access management perspective and conflicts/crashes were observed at the following unsignalized intersections:
- Trotters Circle/Florida Parkway - This intersection has a full median opening with a heavy southbound left-turn movement (ranging from 37 to 150 vph during the 8 hour count period. The sidestreet left turn volumes are low ( 2 to 11 vph westbound and $31-53 \mathrm{vph}$ eastbound) and conflicts were observed predominantly between
southbound and westbound left-turn movements. It is recommended the full median opening be reconstructed to a northbound/southbound directional opening. This will result in westbound left-turning traffic either turning right to make a U-turn at Buttonwood Drive or accessing Buenaventura Boulevard via the southern access point of Trotters Circle.
- Briarwood Drive - This is a T-intersection with a full median opening and an unsignalized crosswalk provided across the south leg. The turning volumes are low: southbound left-turns range from 25 to 60 vph and westbound left-turns range from 26-48 vph. During the field reviews, it was noted that several of the westbound left-turning drivers originated from Osceola Parkway, using Briarwood Drive as a cut-through route. Four (4) angle crashes have been reported that occurred due to westbound left-turning drivers failing to yield to northbound/southbound through vehicles. Additionally, this full median opening is located approximately 400 feet south of the signalized intersection at Buttonwood Drive. It is recommended this full median opening be closed. Alternate access to Briarwood is available via Osceola Parkway or via the Florida Parkway intersection, located 800 feet to the south. Pedestrian activity is low at this location (a total of 6 pedestrians/bicyclist) and the previous recommendation to construct a new sidewalk would create a continuous sidewalk along the east side of the road and thereby reduce the need for pedestrians to cross at this location. During field observation, drivers did not yield to field observers who were crossing Buenaventura Boulevard. It is recommended the crosswalk be removed once the sidewalk is constructed.
- Competition Drive/Pine Island Circle - This intersection has a full median opening and is located 275 feet north of the signalized intersection at Buttonwood Drive. Significant conflicts were observed at this location due to southbound traffic queuing from the adjacent traffic signal. This resulted in eastbound left-turning drivers attempting to travel between stopped vehicles in order to complete their turn. It is recommended this full median opening be closed. Alternate access for westbound left-turning traffic is provided via a driveway connection from Competition Drive to Buenaventura Boulevard, via Osceola Parkway, or via turning right to make a U-turn at Buttonwood Drive. Southbound left-turning drivers would be required to make a U-turn at the signalized intersection of Buttonwood Drive. Westbound left-turning drivers would make a right-turn and a U-turn at the adjacent median opening ( 560 feet north). Closure of this median opening will also allow for a southbound left-turn lane to be constructed at the Buttonwood Drive intersection.
- Ventura Downs Entrance/Buenaventura Center Entrance - The is a full median opening located approximately 500 feet south of Osceola Parkway and provides access to two (2) shopping centers. These shopping centers also have direct access along Osceola Parkway. The northbound left-turn lanes to turn onto westbound Osceola Parkway were often queued beyond this median opening, resulting in conflicts between sidestreet left-turn/through drivers and northbound/southbound vehicles on Buenaventura Boulevard. The westbound approach currently restricts left-turn movements from the driveway (though some left-turns were observed). The eastbound approach has pavement arrows, allowing left and right-turn movement, and 10 angle crashes have been reported in the past seven (7) years that involve eastbound drivers (through and left-turn) failing to yield to northbound/southbound drivers. It is recommended the median opening be modified to a northbound directional median opening and the
northbound left-turn lanes to Osceola Parkway be extended. Alternate access to and from these shopping centers is provided along Osceola Parkway.
- The traffic volumes at the unsignalized intersections of Gate Court/Bridle Court, Wagon Circle/Archie Gordon Memorial Park, Trotters Circle/Florida Parkway, and Lakepointe Circle were reviewed to determine if the volumes exceed the thresholds to warrant a traffic signal. Based on a preliminary review of signal warrants, the existing traffic volumes at these unsignalized intersections do not exceed the volume thresholds. New traffic signals are not recommended along the corridor.


## Maintenance:

During the various field reviews the condition of the study corridor's asphalt, striping, signing and lighting were observed. The following are observations related to the maintenance of the study corridor based on the various field reviews:

- The signs, pavement markings, and pavement conditions along Buenaventura Boulevard generally appear to be in good condition. Several items along the study corridor were noted to be in fair to poor condition and not compliant with current standards as stated below:
- Several crosswalks at sidestreets along the corridor are worn or faded. It is recommended crosswalk pavement markings be refreshed.
- Existing crosswalks at signalized locations along the corridor are worn and/or do not meet current standards for a special emphasis crosswalk. It is recommended that all signalized crosswalks along the corridor be replaced with special emphasis crosswalks that meet current standards.
- The stop bar at Pine Island Circle has become significantly worn/faded. It is recommended this stop bar be refreshed.
- Pedestrian safety railings are provided adjacent to the sidewalk in areas with drop-off conditions. There are areas throughout the corridor with potential drop-off conditions and a safety railing is not provided. It is recommended pedestrian safety railings be installed at all locations along the corridor with potential drop-off conditions.
- SCHOOL pavement messages are provided along Buenaventura Boulevard at the intersections of Florida Parkway and at Buttonwood Drive. Per the FDOT Speed Zoning Manual (August 2018), SCHOOL pavement messages are to be used within designated school zone. Neither of these intersections is within a designated school zone. It is recommended the SCHOOL pavement messages do not get replaced during a future roadway resurfacing project.
- The typical section of the roadway does not include curb and gutter and results in the pavement edge being flush with the grassed shoulder area. The grass has overgrown beyond the pavement edgelines (both outside and inside) in several areas of the corridor. It is recommended the pavement be kept clear of all grass overgrowth.
The recommended improvements are depicted on the Improvement Diagrams in Figure 10


## SUMMARY OF RECOMMENDATIONS

Traffic Engineering Data Solutions, Inc. (TEDS) was retained on behalf of the Florida Department of Transportation (FDOT) to conduct corridor assessment on Buenaventura Boulevard from Florida Parkway to Osceola Parkway in Kissimmee (Osceola County), Florida.
Short-term improvements to be performed by Osceola County:

- Install sidewalk safety railings where drop-off conditions are present.
- Refresh crosswalks at Florida Parkway (south) intersection to be high-emphasis.
- Refresh sidestreet crosswalks and the Pine Island Circle stop bar.
- Reduce the speed limit throughout the corridor to 35 mph
- Install electronic speed feedback signs.
- Clear overgrown grass from pavement and edge lines.
- Provide sidewalk connectivity from all Lynx bus stops to the existing sidewalk network.

Long-term improvements:

## Signal Reconstruction:

- Reconstruct the traffic signal at Florida Parkway to include one signal head per lane, retroreflective backplates, 4-section flashing yellow arrow signal heads for northbound and southbound Buenaventura Boulevard protected/permissive left-turn movements and with YIELD TO PEDS blank out sign on all approaches. Additionally, pedestrian features should be reconstructed to include special emphasis crosswalks on all approaches, detectable warning surfaces and countdown pedestrian signals.
- Reconstruct the traffic signal at Buttonwood Drive to include one signal head per lane, retroreflective backplates, 4-section flashing yellow arrow signal heads for northbound and southbound Buenaventura Boulevard protected/permissive left-turn movements and with YIELD TO PEDS blank out sign on all approaches. Additionally, pedestrian features should be reconstructed to include special emphasis crosswalks on all approaches, detectable warning surfaces and countdown pedestrian signals.
- Reconstruct the northbound/southbound traffic signals at Osceola Parkway to include one signal head per lane and retroreflective backplates; refresh the intersection skip striping and stop bars; pedestrian features should be reconstructed to include special emphasis crosswalks on all approaches, detectable warning surfaces and new countdown pedestrian signals.
Access Management Improvements:
- Convert Trotters Circle/Florida Parkway to a northbound/southbound directional median and extend the left-turn lanes.
- Close the median opening at Briarwood Drive.
- Close the median opening at Competition Drive/Pine Island Circle and provide a southbound left-turn lane for Buttonwood Drive.
- Convert the Ventura Downs /Buenaventura Center entrance to a northbound directional median and extend the northbound left-turn lanes approaching Osceola Parkway.


## Corridor Improvements:

- Install sidewalk along the east side of the roadway from north of Wagon Circle to Briarwood Drive and from Buttonwood Drive to Competition Drive; Install a crosswalk across Florida Parkway (North) and Pine Island Circle and remove the mainline crosswalk at Briarwood Drive once this is complete.

$$
\text { Page | } \mathbf{3 7}
$$

- Modify the superelevation and/or curve radii throughout the corridor to comply with FDM Chapter 210.
- During a future resurfacing project, reduce lane widths by 1 foot to encourage compliance with the speed limit. Additionally, do not replace the SCHOOL pavement messages


## COST-BENEFIT ANALYSIS

The short-term improvement costs for corridor improvements were estimated based on FDOT's 12-month moving average prices from August 1, 2018 to July 31, 2019. Based on the cost estimate provided on the next page in Table 4, the total cost of the short-term improvements are estimated at approximately $\$ 274,053$.
The long-term improvement costs for the signal reconstruction and corridor improvements were estimated based on FDOT's 12-month moving average prices from August 1, 2018 to July 31, 2019. Based on the cost estimate provided below in Table 5, the total cost of the long-term improvements are estimated at approximately $\$ 1,779,896$.
A benefit-cost analysis was conducted for the proposed improvements to determine if the projects are justified based on criteria outlined in the Highway Safety Improvement Program Manual. The benefit of the improvement is determined as the cost associated with any crash susceptible to correction by the improvements.
Based on the CMF Clearinghouse for Crash Modification Factors provided by the Federal Highway Administration's (FHWA) Safety Program, a crash modification factor (CMF) of 0.85 was identified for the installation of retroreflective signal backplates (see Appendix). It should be noted that the CMF was applied to all rear-end crashes approaching Florida Parkway (South), Buttonwood Drive, and Osceola Parkway (northbound and southbound only). From 1/1/2012 to 12/31/2018, there were 29 applicable collisions, and upon applying the CMF to the crashes, it was determined that an average of 0.62 crashes per year would be reduced by implementing retroreflective backplates on the eastbound and westbound approaches.
A CMF of 0.901 was identified when a change is made from a protected only left-turn to a flashing yellow arrow protected/permissive left-turn with time-of-day operation (see Appendix). This CMF was applied to all other crashes approaching the intersections of Florida Parkway (South), Buttonwood Drive, and Osceola Parkway (northbound and southbound only). From January 1, 2012 to December 31, 2018 there were 32 applicable collisions and upon applying the CMF to the crashes, it was determined that 0.45 crashes per year would be reduced when a change is made from a protected only left-turn to a flashing yellow arrow protected/permissive left-turn with time-of-day operation.
Based on FDOT's Crash Analysis Reporting System, Buenaventura Boulevard falls under crash category 23, suburban four/five-lane divided roadways with raised medians, with an average cost-per-crash of $\$ 228,544$. As summarized in Table 6, the resulting benefit-cost ratio of 1.79 was calculated for the long-term improvements. The net present value (NPV) for the improvements, including engineering and construction engineering inspection (CEI), is estimated at approximately $\$ 1,555,935$. The NPV calculations are provided in the Appendix.

Table 4
Engineer's Estimate of Probable Costs (Short-Term) Buenaventura Boulevard from Florida Parkway (South) to Osceola Parkway

| ENGINEER'S OPINION OF PROBABLE COSTS <br> Buenaventura Boulevard from Florida Parkway (South) to Osceola Parkway Short-Term Improvements |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| PAY ITEM | PAY ITEM DESCRIPTION | UNITS | QUANTITY | UNIT PRICE | TOTAL |
| 0700111 | SINGLE POST SIGN, F\&I GM, <12 SF | AS | 3 | \$ 351.05 | \$1,053.15 |
| 070011231 | ELECT DISP SIGN, F\&I GM- SO, SPEED FEEDB | AS | 4 | \$ 12,370.98 | \$49,483.92 |
| 0700160 | SINGLE POST SIGN, REMOVE | AS | 3 | \$ 28.30 | \$84.90 |
| SIGNING SUBTOTAL |  |  |  |  | \$50,621.97 |
| 011011 | CLEARING \& GRUBBING | AC | 0.700 | \$ 13,125.51 | \$9,187.86 |
| 0327701 | MILLING EXIST ASPH PAVT, 1" AVG DEPTH | SY | 3,000 | \$ 2.44 | \$7,320.00 |
| 05152311 | PED/BICYCLE RAILING, ALUM,42" TYPE 1 | LF | 250 | \$ 65.33 | \$16,332.50 |
| 05221 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 1,050 | \$ 38.84 | \$40,782.00 |
| ROADWAY SUBTOTAL |  |  |  |  | \$73,622.36 |
| 071111123 | THERMOPLASTIC, STD, WHITE, SOLID, 12" | LF | 1,500 | \$ 2.60 | \$3,900.00 |
| 071111125 | THERMOPLASTIC, STD, WHITE, SOLID, $24{ }^{\prime \prime}$ | LF | 200 | \$ 5.01 | \$1,002.00 |
| 071114123 | THERMOPLASTIC, PREFORM, WHITE, SOLID,12" | LF | 500 | \$ 9.76 | \$4,880.00 |
| 071114125 | THERMOPLASTIC, PREFORM, WHITE, SOLID,24" | LF | 400 | \$ 17.25 | \$6,900.00 |
| PAVEMENT MARKING SUBTOTAL |  |  |  |  | \$12,782.00 |
|  |  |  |  | SUBTOTAL | \$137,026.33 |
| 01011 | MOBILIZATION (10\%) |  |  |  | \$13,702.63 |
| 01021 | MAINTENANCE OF TRAFFIC ( $20 \%$ ) |  |  |  | \$27,405.27 |
| 099925 | CONTINGENCY (20\%) |  |  |  | \$27,405.27 |
|  | CONSTRUCTION TOTAL |  |  |  | \$205,539.49 |
|  | ENGINEERING (30\%) |  |  |  | \$41,107.90 |
|  | CEI (20\%) |  |  |  | \$27,405.27 |
| PROJECT TOTAL |  |  |  |  | \$274,052.65 |

Table 5
Engineer's Estimate of Probable Costs (Long-Term) Buenaventura Boulevard from Florida Parkway (South) to Osceola Parkway

|  | PAY ITEM | PAY ITEM DESCRIPTION | UNITS | QUANTITY | UNIT PRICE | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0700111 | SINGLE POST SIGN, F\&I GM, <12 SF | AS | 2 | \$ 351.05 | \$702.10 |
|  | 0700112 | SINGLE POST SIGN, F\&I GM, 12-20 SF | AS | 6 | \$ 1,173.82 | \$7,042.92 |
|  | 0700113 | SINGLE POST SIGN, F\&I GM, 21-30 SF | AS | 3 | \$ 1,543.14 | \$4,629.42 |
|  | 0700160 | SINGLE POST SIGN, REMOVE | AS | 10 | \$ 28.30 | \$283.00 |
|  | 070011391 | ELECT DISP SIGN, F\&I OM- AC, BLANK OUT | AS | 7 | \$ 5,169.54 | \$36,186.78 |
|  | 07003101 | SIGN PANEL, F\&I GM, UP TO 12 SF | EA | 9 | \$ 221.20 | \$1,990.80 |
|  | SIGNING SUBTOTAL |  |  |  |  | \$50,835.02 |
|  | 063271 | SIGNAL CABLE- NEW OR RECO, FUR \& INSTALL | PI | 3 | \$ 5,034.48 | \$15,103.44 |
|  | 063276 | SIGNAL CABLE, REMOVE- INTERSECTION | PI | 3 | \$ 750.83 | \$2,252.49 |
|  | 0635211 | PULL \& SPLICE BOX, F\&I, 13" $\times 24 \prime$ | EA | 3 | \$ 719.24 | \$2,157.72 |
|  | 0641218 | PREST CNC POLE,F\&I,TYP P-VIII | EA | 6 | \$ 10,745.08 | \$64,470.48 |
|  | 0641280 | PREST CNC POLE, REMOVE COMPLETE | EA | 7 | \$ 4,004.91 | \$28,034.37 |
|  | 0646160 | ALUMINUM SIGNALS POLE, REMOVE | EA | 1 | \$ 236.86 | \$236.86 |
|  | 06492110 | STEEL MAST ARM ASSEMBLY, F\&I, 60' | EA | 2 | \$ 50,119.35 | \$100,238.70 |
|  | 0649265 | STEEL MAST ARM ASSEMBLY, REMOVE | EA | 2 | \$ 5,833.89 | \$11,667.78 |
|  | 0650134 | VEH TRAF SIGNAL,F\&I POLYCARBONA, 3 S 1 W | AS | 20 | \$ 939.91 | \$18,798.20 |
|  | 0650136 | VEH TRAF SIGNAL,F\&I POLYCARBON, 4 S 1 W | AS | 4 | \$ 1,141.60 | \$4,566.40 |
|  | 0650139 | VEH TRAF SIGNAL, F\&I, POLY, 5 SEC, 1 W | AS | 2 | \$ 1,505.20 | \$3,010.40 |
|  | 0653111 | PEDESTRIAN SIGNAL, F\&I LED COUNT, 1 WAY | AS | 20 | \$ 691.60 | \$13,832.00 |
|  | 0660411 | VEHICLE DETECTION SYSTEM- VIDEO, CABINET | EA | 3 | \$ 7,756.65 | \$23,269.95 |
|  | 0660412 | VEHICLE DETECTION SYSTEM- VIDEO, ABOVE G | EA | 9 | \$ 4,104.96 | \$36,944.64 |
|  | 06631111 | SIGNAL PRIO \& PREEMP, F\&I, OPT,CAB E | EA | 1 | \$ 4,762.30 | \$4,762.30 |
|  | 06631112 | SIGNAL PRIO \& PREEMP, F\&I, OPT,DETEC | EA | 2 | \$ 1,726.22 | \$3,452.44 |
|  | 06705110 | TRAF CNTL ASSEM, F\&I, NEMA | AS | 2 | \$ 26,669.18 | \$53,338.36 |
|  | 06705600 | TRAF CNTL ASSEM, REMOVE | AS | 2 | \$ 558.03 | \$1,116.06 |
|  | SIGNAL SUBTOTAL |  |  |  |  | \$387,252.59 |
|  | 0104103 | SEDIMENT BARRIER | LF | 1,500.000 | \$ 1.89 | \$2,835.00 |
|  | 010418 | INLET PROTECTION SYSTEM | EA | 6 | \$ 101.10 | \$606.60 |
|  | 01071 | LITTER REMOVAL | AC | 3.641 | \$ 11.28 | \$41.07 |
|  | 01072 | MOWING | AC | 3.641 | \$ 19.63 | \$71.47 |
|  | 011011 | CLEARING \& GRUBBING | AC | 3.641 | \$ 13,125.51 | \$47,789.98 |
|  | 01201 | REGULAR EXCAVATION | CY | 600 | \$ 3.94 | \$2,364.00 |
|  | 01206 | EMBANKMENT | CY | 2,500 | \$ 6.70 | \$16,750.00 |
|  | 01604 | TYPE B STABILIZATION | SY | 1,100 | \$ 3.35 | \$3,685.00 |
|  | 0337780 | ASPH CONC FC.TRAFFIC B.FC-9.5.PG 76-22 | TN | 30 | \$ 112.09 | \$3.362.70 |
|  | 0327701 | MILLING EXIST ASPH PAVT, 1 " AVG DEPTH | SY | 20,000 | \$ 2.44 | \$48,800.00 |
|  | 0715411 | LIGHT POLE COMPLETE, F\&I- STD, 30' | EA | 2 | \$ 4,915.07 | \$9,830.14 |
|  | 0715470 | LIGHT POLE COMPLETE, REMOVE POLE/FOUND | EA | 2 | \$ 606.61 | \$1,213.22 |
| pay item | 05152311 | PED/BICYCLE RAILING, ALUM,42" TYPE 1 | LF | 50 | \$ 65.33 | \$3,266.50 |
| uantity | 052022 | CONCRETE CURB, TYPE B | LF | 755 | \$ 23.41 | \$17,674.55 |
| SP | 0520511 | TRAF SEP CONC-TYPE I, 4' WIDE | LF | 350 | \$ 46.79 | \$16,376.50 |
|  | 052070 | CONCRETE TRAFFIC SEPARATOR, SP- VAR WIDT | SY | 125 | \$ 71.88 | \$8,985.00 |
| ed for | 05221 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 1,050 | \$ 38.84 | \$40,782.00 |
| ing | 05222 | CONCRETE SIDEWALK AND DRIVEWAYS, 6 " | SY | 1,200 | \$ 51.42 | \$61,704.00 |
|  | 05272 | DETECTABLE WARNINGS | SF | 160 | \$ 27.68 | \$4,428.80 |
|  | 053610 | GUARDRAIL- ROADWAY, GEN/LS TL-2 | LF | 460 | \$ 15.92 | \$7,323.20 |
|  | 053673 | GUARDRAIL REMOVAL | LF | 460 | \$ 2.11 | \$970.60 |
|  | 057012 | PERFORMANCE TURF, SOD | SY | 27,000 | \$ 2.50 | \$67,500.00 |
|  | 0630211 | CONDUIT, F\& I, OPEN TRENCH | LF | 200 | \$ 6.91 | \$1,382.00 |
|  | 0630212 | CONDUIT, F\& I, DIRECTIONAL BORE | LF | 600 | \$ 18.85 | \$11,310.00 |
|  | 0630214 | CONDUIT, F\& I, ABOVEGROUND | LF | 500 | \$ 16.67 | \$8,335.00 |
|  |  |  |  | ROADW | AY SUBTOTAL | \$387,387.34 |
|  | 071111125 | THERMOPLASTIC, STD, WHITE, SOLID, $24{ }^{\prime \prime}$ | LF | 325 | \$ 5.01 | \$1,628.25 |
|  | 071111141 | THERMOPLASTIC, STD, WHITE, DOT GUIDE, $6^{\prime \prime}$ | GM | 0.308 | \$ 2,001.85 | \$616.57 |
|  | 071111224 | THERMOPLASTIC, STD, YELLOW, SOLID, 18" | LF | 155 | \$ 3.40 | \$527.00 |
|  | 071114123 | THERMOPLASTIC, PREFORM, WHITE, SOLID,12" | LF | 1,540 | \$ 9.76 | \$15,030.40 |
|  | 071114125 | THERMOPLASTIC, PREFORM, WHITE, SOLID,24" | LF | 1,250 | \$ 17.25 | \$21,562.50 |
|  | 071114170 | THERMOPLASTIC, PREFORMED, WHITE, ARROW | EA | 19 | \$ 148.89 | \$2,828.91 |
|  | 071115101 | THERMOPLASTIC, STD-OP, WHITE, SOLID, $6^{\prime \prime}$ | GM | 2.51 | \$ 4,437.22 | \$11,115.24 |
|  | 071115131 | THERMOPLASTIC, STD-OP, WHITE, SKIP, 6" | GM | 0.31 | \$ 1,527.89 | \$470.59 |
|  | 071115201 | THERMOPLASTIC, STD-OP,YELLOW, SOLID, $\mathbf{6}^{\prime \prime}$ | GM | 0.500 | \$ 4,372.38 | \$2,186.19 |
|  | 071117 | THERMOPLASTIC, REMOVE | SF | 4,350 | \$ 2.33 | \$10,135.50 |
|  |  |  | PAVEM | ENT MARKIN | NG SUBTOTAL | \$64,472.90 |
|  |  |  |  |  | SUBTOTAL | \$889,947.84 |
|  | 01011 |  | MOBILIZ | ATION (10\%) |  | \$88,994.78 |
|  | 01021 | MAINTEN | E OF TR | AFFIC (20\%) |  | \$177,989.57 |
|  | 099925 |  | ONTING | ENCY (20\%) |  | \$177,989.57 |
|  |  |  | NSTRUC | TION TOTAL |  | \$1,334,921.76 |
|  |  |  | ENGINE | RING (30\%) |  | \$266,984.35 |
|  |  |  |  | CEI (20\%) |  | \$177,989.57 |
|  |  |  |  |  | OJECT TOTAL | \$1,779,895.68 |

Traffic Engineering Data Solutions, Inc.

Table 6
Benefit/Cost Analysis
Buenaventura Boulevard from Florida Parkway (South) to Osceola Parkway


## Cost Estimate

Cost estimates were prepared for the recommended short and long-term improvements, using the FDOT's 12-Month moving average prices from August 1, 2018 to July 31, 2019. The shortterm improvements would be implemented by Osceola County at an estimated cost of \$274,053. For the long-term improvements, the total costs is estimated to be $\$ 1,779,896$. The "Engineer's Opinion of Probable Costs" is provided in the Appendix.




## APPENDIX

## 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)
DATE: May 22, 2019 (Wednesday)
LOCATION: Buenaventura Bv \& Florida Py
CITY: Buena Ventura Lake LATITUDE: 0
county: Osceola County LONGITUDE: 0


## 15 MINUTE TURNING MOVEMENT COUNTS

DATE: May 22, 2019 (Wednesday)
LOCATION: Buenaventura Bv \& Florida Py

CITY: Buena Ventura Lake LATITUDE: 0 county: Osceola County LONGITUDE: 0

|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  | Florida Py |  |  |  |  |  | Florida Py |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TIME BEGIN | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { N/S } \\ \text { TOTAL } \\ \hline \end{array}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \end{array}$ | $\begin{array}{\|l\|} \hline \text { GRAND } \\ \text { TOTAL } \\ \hline \end{array}$ |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 0 | 2 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 4 | 8 |
| 07:15 AM | 1 | 2 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 4 | 8 |
| 07:30 AM | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 1 | 0 | 5 | 9 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 3 | 12 |
| 07:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 | 6 |
| TOTAL | 2 | 8 | 1 | 0 | 11 | 0 | 9 | 1 | 0 | 10 | 21 | 1 | 1 | 5 | 0 | 7 | 5 | 0 | 1 | 0 | 6 | 13 | 34 |
| 08:00 AM | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | 4 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 4 | 8 |
| 08:15 AM | 2 | 2 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 3 | 7 | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 11 |
| 08:30 AM | 1 | 3 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 3 | 7 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 11 |
| 08:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 3 | 4 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 7 |
| TOTAL | 4 | 7 | 0 | 0 | 11 | 1 | 7 | 3 | 0 | 11 | 22 | 1 | 0 | 10 | 0 | 11 | 1 | 3 | 0 | 0 | 4 | 15 | 37 |
| 04:00 PM | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 04:15 PM | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 3 | 4 | 1 | 2 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 8 |
| 04:30 PM | 1 | 3 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 7 |
| 04:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 5 |
| TOTAL | 2 | 10 | 0 | 0 | 12 | 2 | 2 | 1 | 0 | 5 | 17 | 1 | 2 | 3 | 0 | 6 | 1 | 1 | 0 | 0 | 2 | 8 | 25 |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 05:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 0 | 4 | 0 | 0 | 4 | 0 | 3 | 1 | 0 | 4 | 8 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 10 |
| AM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} \text { 07:15 AM to } \\ 08: 15 \mathrm{AM} \\ \hline \end{gathered}$ | 2 | 8 | 0 | 0 | 10 | 1 | 9 | 1 | 0 | 11 | 21 | 1 | 1 | 3 | 0 | 5 | 5 | 2 | 1 | 0 | 8 | 13 | 34 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 05:00 PM to 06:00 PM | 0 | 4 | 0 | 0 | 4 | 0 | 3 | 1 | 0 | 4 | 8 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 10 |




DATE: May 22, 2019 (Wednesday)
location: Buenaventura Bv \& Gait Ct/Bridle Ct

CITY: Buena Ventura Lake LATITUDE: 0
county: Osceola County LONGITUDE: 0
$\qquad$


| 15 MINUTE TURNING MOVEMENT COUNTS <br> (Trucks Only) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DATE: May 22, 2019 (Wednesday) |  |  |  |  |  |  |  |  |  |  |  | CITY: Buena Ventura Lake county: Osceola County |  |  |  |  | LATITUDE: 0 LONGITUDE: 0 |  |  |  |  |  |  |
| Location: Buenaventura Bv \& Gait Ct/Bridle Ct |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Buenaventura Bv |  |  |  | Buenaventura Bv |  |  |  |  |  | Gait Ct |  |  |  |  |  |  |  | Bridle Ct |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \end{array}$ |  |
| TIME BEGIN |  | NORTHBOUND |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{gathered} \text { N/S } \\ \text { TOTAL } \end{gathered}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{aligned} & \hline \text { GRAND } \\ & \text { TOTAL } \\ & \hline \end{aligned}$ |  |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |  |
| 07:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |  |
| 07:30 AM | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 9 |  |
| 07:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |  |
| TOTAL | 0 | 9 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 9 | 18 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 19 |  |
| 08:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |  |
| 08:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |  |
| 08:30 AM | 0 | 3 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |  |
| 08:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |  |
| TOTAL | 0 | 8 | 0 | 0 | 8 | 0 | 10 | 0 | 0 | 10 | 18 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 19 |  |
| 04:00 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |  |
| 04:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |  |
| 04:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |  |
| 04:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |  |
| TOTAL | 0 | 11 | 0 | 0 | 11 | 0 | 5 | 0 | 0 | 5 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |  |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |  |
| 05:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 05:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |  |
| TOTAL | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |  |
| AM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\left.\begin{gathered} 07: 15 \text { AM to } \\ 08: 15 \text { AM } \end{gathered} \right\rvert\,$ | 0 | 9 | 0 | 0 | 9 | 0 | 10 | 0 | 0 | 10 | 19 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 20 |  |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\left\|\begin{array}{c} \text { 05:00 PM to } \\ 06: 00 \text { PM } \end{array}\right\|$ | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |  |




DATE: May 23, 2019 (Thursday)
LOCATION: Buenaventura Bv \& Wagon Cir S

| CITY: Buena Ventura Lake | LATITUDE: 0 |
| :---: | :---: |
| UNTY: Osceola County | LONGITUDE: |






## 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)
DATE: May 22, 2019 (Wednesday)
CITY: Buena Ventura Lake LATITUDE: 0
LOCATION: Buenaventura Bv \& Trotters Cir/Florida Py
county: Osceola County LONGITUDE: 0


| 15 MINUTE TURNING MOVEMENT COUNTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Trucks Only) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DATE: May 22, 2019 (Wednesday) |  |  |  |  |  |  |  |  |  |  |  | CITY: Buena Ventura Lake |  |  |  |  | LATITUDE: 0 LONGITUDE: 0 |  |  |  |  |  |  |
| LOCATION: Buenaventura Bv \& Trotters Cir/Florida Py |  |  |  |  |  |  |  |  |  |  |  | ountr: Osceola County |  |  |  |  |  |  |  |  |  |  |  |
|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  | Trotters Cir |  |  |  |  | Florida Py |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \end{array}$ |  |
| TIME BEGIN | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { N/S } \\ \text { TOTAL } \\ \hline \end{array}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  |  | GRANDTOTAL |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 2 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 07:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 07:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 07:45 AM | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 5 |
| TOTAL | 0 | 9 | 1 | 0 | 10 | 0 | 8 | 1 | 0 | 9 | 19 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 21 |
| 08:00 AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 5 |
| 08:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 3 | 1 | 0 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 08:30 AM | 0 | 4 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 7 |
| 08:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| TOTAL | 0 | 8 | 0 | 0 | 8 | 0 | 10 | 2 | 0 | 12 | 20 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 3 | 23 |
| 04:00 PM | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:15 PM | 0 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:30 PM | 0 | 4 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:45 PM | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 0 | 11 | 1 | 0 | 12 | 2 | 5 | 0 | 0 | 7 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 05:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 05:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| AM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 07: 15 \mathrm{AM} \text { to } \\ 08: 15 \mathrm{AM} \end{gathered}$ | 0 | 8 | 0 | 0 | 8 | 0 | 8 | 1 | 0 | 9 | 17 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 3 | 20 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} \begin{array}{c} \text { 05:00 PM to } \\ 06: 00 ~ P M \end{array} \\ \hline \end{gathered}$ | 0 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |

$\qquad$
DATE: August 28, 2019 (Wednesday)
CITY: Buena Ventura Lakes
LATITUDE: 0
LOCATION: Buenaventura Bv \& Trotters Cir/Florida Py
county: Osceola County LONGITUDE: 0


## 15 MINUTE TURNING MOVEMENT COUNTS

DATE: August 28, 2019 (Wednesday)
CITY: Buena Ventura Lakes
LATITUDE: 0
location: Buenaventura Bv \& Trotters Cir/Florida Py
county: Osceola County LONGITUDE: 0

|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  | Trotters Cir |  |  |  |  | Florida Py |  |  |  |  | $\begin{gathered} \text { E/W } \\ \text { TOTAL } \end{gathered}$ | $\begin{aligned} & \text { GRAND } \\ & \text { TOTAL } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TIME | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{gathered} \mathrm{N} / \mathrm{S} \\ \text { TOTAL } \end{gathered}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  |  |  |
| BEGIN | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 11:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 11:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 11:45 AM | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 0 | 6 | 0 | 0 | 6 | 0 | 3 | 0 | 0 | 3 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 10 |
| 12:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| TOTAL | 0 | 4 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 02:00 PM | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:30 PM | 0 | 2 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| TOTAL | 0 | 7 | 0 | 0 | 7 | 0 | 9 | 0 | 0 | 9 | 16 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 17 |
| 03:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:15 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| TOTAL | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 0 | 0 | 7 | 15 | 0 |  | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 16 |
| AM Peak <br> 12:00 PM to <br> 01:00 PM |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0 | 4 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 03: 00 \text { PM to } \\ 04: 00 \text { PM } \\ \hline \end{gathered}$ | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 0 | 0 | 7 | 15 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 16 |





(Cars and Trucks)
DATE: May 22, 2019 (Wednesday)
LOCATION: Buenaventura Bv \& Briarwood Dr
CITY: Buena Ventura Lake
county: Osceola County LONGITUDE: 0
LATITUDE: 0
$\qquad$
Briarwood Dr

| Buenaventura Bv |  |  |  |  |  | Buenaventura Bv |  |  |  |  |  |  |  |  |  |  | Briarwood Dr |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TIME BEGIN | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{gathered} \text { N/S } \\ \text { TOTAL } \end{gathered}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \\ \hline \end{array}$ | $\begin{aligned} & \text { GRAND } \\ & \text { TOTAL } \end{aligned}$ |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 321 | 11 | 0 | 332 | 5 | 97 | 0 | 0 | 102 | 434 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 8 | 0 | 15 | 15 | 449 |
| 07:15 AM | 0 | 350 | 13 | 1 | 364 | 6 | 116 | 0 | 0 | 122 | 486 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 18 | 18 | 504 |
| 07:30 AM | 0 | 343 | 16 | 0 | 359 | 12 | 160 | 0 | 1 | 173 | 532 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 18 | 0 | 30 | 30 | 562 |
| 07:45 AM | 0 | 285 | 14 | 0 | 299 | 9 | 152 | 0 | 1 | 162 | 461 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 16 | 0 | 30 | 30 | 491 |
| TOTAL | 0 | 1,299 | 54 | 1 | 1,354 | 32 | 525 | 0 | 2 | 559 | 1,913 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 51 | 0 | 93 | 93 | 2,006 |
| 08:00 AM | 0 | 332 | 4 | 0 | 336 | 2 | 142 | 0 | 0 | 144 | 480 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 15 | 0 | 20 | 20 | 500 |
| 08:15 AM | 0 | 302 | 8 | 0 | 310 | 9 | 122 | 0 | 0 | 131 | 441 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 19 | 19 | 460 |
| 08:30 AM | 0 | 235 | 7 | 0 | 242 | 8 | 147 | 0 | 0 | 155 | 397 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 15 | 0 | 26 | 26 | 423 |
| 08:45 AM | 0 | 194 | 1 | 1 | 196 | 6 | 139 | 0 | 0 | 145 | 341 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 0 | 12 | 12 | 353 |
| TOTAL | 0 | 1,063 | 20 | 1 | 1,084 | 25 | 550 | 0 | 0 | 575 | 1,659 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 50 | 0 | 77 | 77 | 1,736 |


| 04:00 PM | 0 | 201 | 10 | 0 | 211 | 26 | 295 | 0 | 0 | 321 | 532 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 18 | 0 | 29 | 29 | 561 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 04:15 PM | 0 | 210 | 10 | 0 | 220 | 10 | 321 | 0 | 1 | 332 | 552 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 9 | 0 | 16 | 16 | 568 |
| 04:30 PM | 0 | 195 | 7 | 0 | 202 | 12 | 277 | 0 | 0 | 289 | 491 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 10 | 0 | 24 | 24 | 515 |
| 04:45 PM | 0 | 209 | 9 | 0 | 218 | 12 | 315 | 0 | 0 | 327 | 545 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 7 | 0 | 15 | 15 | 560 |
| TOTAL | 0 | 815 | 36 | 0 | 851 | 60 | 1,208 | 0 | 1 | 1,269 | 2,120 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 44 | 0 | 84 | 84 | 2,204 |
| 05:00 PM | 0 | 214 | 8 | 0 | 222 | 22 | 305 | 0 | 1 | 328 | 550 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 5 | 0 | 16 | 16 | 566 |
| 05:15 PM | 0 | 221 | 5 | 0 | 226 | 11 | 342 | 0 | 2 | 355 | 581 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 15 | 0 | 27 | 27 | 608 |
| 05:30 PM | 0 | 211 | 6 | 0 | 217 | 6 | 291 | 0 | 0 | 297 | 514 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 11 | 0 | 21 | 21 | 535 |
| 05:45 PM | 0 | 194 | 7 | 0 | 201 | 12 | 324 | 0 | 0 | 336 | 537 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 12 | 0 | 27 | 27 | 564 |
| TOTAL | 0 | 840 | 26 | 0 | 866 | 51 | 1,262 | 0 | 3 | 1,316 | 2,182 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 43 | 0 | 91 | 91 | 2,273 |


|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Peak Hour Factor: 0.915 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 07:15 AM to | 0 | 1,310 | 47 | 1 | 1,358 | 29 | 570 | 0 | 2 | 601 | 1,959 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 58 | 0 | 98 | 98 | 2,057 |





## 15 MINUTE TURNING MOVEMENT COUNTS

|  |  |  |  |  |  |  |  |  |  |  | (Trucks |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AT | ugu | 20 | (Wed | nesday) |  |  |  |  |  |  |  |  | uen | Ventur | Lakes |  | UD |  |  |  |  |  |
| LOCA | TIO | uen | tu | Bv \& | Briarwood | Dr |  |  |  |  |  |  | NTY | sce | la Coun |  |  |  |  |  |  |  |  |
|  |  | Bue | n | a Bv |  |  | Bue | en | $a \mathrm{Bv}$ |  |  |  |  |  |  |  |  |  | no | Dr |  |  |  |
| TIME |  |  | B |  |  |  |  | HBC |  |  | N/S |  |  | AST | UND |  |  |  | BO |  |  | E/W | GRAND |
| BEGIN | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL | TOTAL | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL | TOTAL | TOTAL |
| 11:00 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 11:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 11:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 11:45 AM | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 0 | 9 | 0 | 0 | 9 | 0 | 4 | 0 | 0 | 4 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 12:00 PM | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| TOTAL | 0 | 5 | 1 | 0 | 6 | 0 | 5 | 0 | 0 | 5 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:45 PM | 0 | 4 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 7 |
| TOTAL | 0 | 8 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 8 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 17 |
| 03:00 PM | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 03:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:30 PM | 0 | 3 | 1 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| TOTAL | 0 | 5 | 2 | 0 | 7 | 0 | 7 | 0 | 0 | 7 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| AM Peak12:00 PM to01:00 PM |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0 | 5 | 1 | 0 | 6 | 0 | 5 | 0 | 0 | 5 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0 | 9 | 2 | 0 | 11 | 0 | 7 | 0 | 0 | 7 | 18 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 19 |





(Cars and Trucks)
DATE: May 22, 2019 (Wednesday) $\qquad$
LOCATION: Buenaventura Bv \& Buttonwood Dr
county: Osceola County LONGITUDE: 0





LOCATION: Buenaventura Bv \& Competition Dr
county: Osceola County LONGITUDE: 0 $\qquad$


| 15 MINUTE TURNING MOVEMENT COUNTS <br> (Trucks Only) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DATE: May 22, 2019 (Wednesday) |  |  |  |  |  |  |  |  |  |  |  | CITY: Buena Ventura Lake |  |  |  |  | LATITUDE: 0 LONGITUDE: 0 |  |  |  |  |  |  |
| LOCATION: Buenaventura Bv \& Competition Dr |  |  |  |  |  |  |  |  |  |  |  | county: Osceola County |  |  |  |  |  |  |  |  |  |  |  |
|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  | Competition Dr |  |  |  |  | Competition Dr |  |  |  |  |  |  |
| TIME BEGIN | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{array}{c\|} \hline \text { N/S } \\ \text { TOTAL } \end{array}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \end{array}$ | $\begin{array}{\|l\|} \hline \text { GRAND } \\ \text { TOTAL } \\ \hline \end{array}$ |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 3 | 7 |
| 07:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 07:30 AM | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 07:45 AM | 0 | 4 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| TOTAL | 1 | 9 | 1 | 0 | 11 | 0 | 6 | 0 | 0 | 6 | 17 | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 4 | 21 |
| 08:00 AM | 1 | 1 | 1 | 0 | 3 | 1 | 1 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 6 |
| 08:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 6 |
| 08:30 AM | 1 | 3 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 08:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 2 | 6 | 1 | 0 | 9 | 1 | 10 | 0 | 0 | 11 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 22 |
| 04:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 04:15 PM | 0 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 5 |
| 04:30 PM | 1 | 2 | 1 | 0 | 4 | 0 | 3 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:45 PM | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 6 |
| TOTAL | 1 | 7 | 3 | 0 | 11 | 0 | 7 | 0 | 0 | 7 | 18 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 4 | 22 |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| TOTAL | 0 | 5 | 0 | 0 | 5 | 0 | 3 | 0 | 0 | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| AM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 07: 15 \text { AM to } \\ 08: 15 \mathrm{AM} \end{gathered}$ | 2 | 8 | 1 | 0 | 11 | 1 | 6 | 0 | 0 | 7 | 18 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 20 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} \text { 05:00 PM to } \\ 06: 00 \text { PM } \end{gathered}$ | 0 | 5 | 0 | 0 | 5 | 0 | 3 | 0 | 0 | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |

## 15 MINUTE TURNING MOVEMENT COUNTS <br> (Cars and Trucks)

DATE: August 28, 2019 (Wednesday)
location: Buenaventura Bv \& Competition Dr
CITY: Buena Ventura Lakes LATITUDE: 0 COUNTY: Osceola County LONGITUDE: 0

|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  | Competition Dr |  |  |  |  | Competition Dr |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { TIME } \\ & \text { BEGIN } \end{aligned}$ | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{gathered} \text { N/S } \\ \text { TOTAL } \\ \hline \end{gathered}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{gathered} \text { E/W } \\ \text { TOTAL } \end{gathered}$ | $\begin{aligned} & \text { GRAND } \\ & \text { TOTAL } \\ & \hline \end{aligned}$ |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 11:00 AM | 10 | 182 | 0 | 0 | 192 | 2 | 178 | 10 | 2 | 192 | 384 | 19 | 0 | 28 | 0 | 47 | 4 | 0 | 7 | 0 | 11 | 58 | 442 |
| 11:15 AM | 14 | 208 | 1 | 0 | 223 | 3 | 152 | 15 | 0 | 170 | 393 | 19 | 0 | 14 | 0 | 33 | 0 | 0 | 3 | 0 | 3 | 36 | 429 |
| 11:30 AM | 8 | 189 | 1 | 1 | 199 | 3 | 164 | 7 | 1 | 175 | 374 | 22 | 0 | 18 | 0 | 40 | 0 | 0 | 6 | 0 | 6 | 46 | 420 |
| 11:45 AM | 12 | 221 | 2 | 0 | 235 | 1 | 178 | 11 | 1 | 191 | 426 | 15 | 0 | 17 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 32 | 458 |
| TOTAL | 44 | 800 | 4 | 1 | 849 | 9 | 672 | 43 | 4 | 728 | 1,577 | 75 | 0 | 77 | 0 | 152 | 4 | 0 | 16 | 0 | 20 | 172 | 1,749 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12:15 PM | 6 | 203 | 2 | 0 | 211 | 5 | 234 | 12 | 0 | 251 | 462 | 16 | 0 | 12 | 0 | 28 | 4 | 0 | 3 | 0 | 7 | 35 | 497 |
| 12:30 PM | 6 | 186 | 0 | 1 | 193 | 3 | 205 | 8 | 0 | 216 | 409 | 11 | 0 | 11 | 0 | 22 | 0 | 0 | 3 | 0 | 3 | 25 | 434 |
| 12:45 PM | 10 | 185 | 1 | 0 | 196 | 5 | 178 | 9 | 1 | 193 | 389 | 11 | 0 | 21 | 0 | 32 | 0 | 0 | 2 | 0 | 2 | 34 | 423 |
| TOTAL | 29 | 741 | 4 | 1 | 775 | 15 | 814 | 37 | 1 | 867 | 1,642 | 48 | 0 | 62 | 0 | 110 | 6 | 0 | 11 | 0 | 17 | 127 | 1,769 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 02:15 PM | 5 | 232 | 1 | 0 | 238 | 2 | 237 | 6 | 1 | 246 | 484 | 2 | 0 | 9 | 0 | 11 | 1 | 0 | 5 | 0 | 6 | 17 | 501 |
| 02:30 PM | 12 | 233 | 2 | 0 | 247 | 2 | 279 | 3 | 1 | 285 | 532 | 1 | 0 | 2 | 0 | 3 | 1 | 0 | 4 | 0 | 5 | 8 | 540 |
| 02:45 PM | 11 | 231 | 2 | 0 | 244 | 5 | 273 | 7 | 1 | 286 | 530 | 1 | 0 | 14 | 0 | 15 | 1 | 0 | 4 | 0 | 5 | 20 | 550 |
| TOTAL | 33 | 911 | 6 | 0 | 950 | 10 | 1,019 | 24 | 3 | 1,056 | 2,006 | 6 | 0 | 31 | 0 | 37 | 4 | 0 | 15 | 0 | 19 | 56 | 2,062 |
| 03:00 PM | 8 | 214 | 0 | 0 | 222 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 03:15 PM | 6 | 220 | 1 | 0 | 227 | 5 | 292 | 6 | 1 | 304 | 531 | 5 | 0 | 9 | 0 | 14 | 1 | 0 | 4 | 0 | 5 | 19 | 550 |
| 03:30 PM | 10 | 232 | 2 | 0 | 244 | 5 | 294 | 9 | 0 | 308 | 552 | 2 | 0 | 9 | 0 | 11 | 0 | 0 | 4 | 0 | 4 | 15 | 567 |
| 03:45 PM | 10 | 210 | 2 | 1 | 223 | 3 | 314 | 7 | 0 | 324 | 547 | 4 | 0 | 9 | 0 | 13 |  | 0 | 3 | 0 | 6 | 19 | 566 |
| TOTAL | 34 | 876 | 5 | 1 | 916 | 18 | 1,147 | 27 | 3 | 1,195 | 2,111 | 15 | 0 | 42 | 0 | 57 | 4 | 0 | 14 | 0 | 18 | 75 | 2,186 |
| AM Peak 4 Peak Hour Factor: 0.907 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\underset{\substack{11: 45 \mathrm{AM} \mathrm{to} \\ 12: 45 \mathrm{PM} \\ \hline}}{ }$ | 31 | 777 | 5 | 1 | 814 | 11 | 814 | 39 | 1 | 865 | 1,679 | 52 | 0 | 58 | 0 | 110 | 6 | 0 | 9 | 0 | 15 | 125 | 1,804 |
| PM Peak Peak Hour Factor: 0.964 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\underbrace{03: 00 ~ P M ~ t o ~} \begin{gathered} 04: 00 ~ P M \\ \hline \end{gathered}$ | 34 | 876 | 5 | 1 | 916 | 18 | 1,147 | 27 | 3 | 1,195 | 2,111 | 15 | 0 | 42 | 0 | 57 | - | 0 | 14 | 0 | 18 | 75 | 2,186 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## 15 MINUTE TURNING MOVEMENT COUNTS

DATE: August 28, 2019 (Wednesday)
LOCATION: Buenaventura Bv \& Competition Dr

|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  | Competition Dr |  |  |  |  | Competition Dr |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TIME BEGIN | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{array}{c\|c\|} \hline \text { N/S } \\ \text { TOTAL } \end{array}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \\ \hline \end{array}$ | $\begin{aligned} & \text { GRAND } \\ & \text { TOTAL } \end{aligned}$ |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 11:30 AM | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 11:45 AM | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| TOTAL | 0 | 7 | 0 | 0 | 7 | 0 | 5 | 0 | 0 | 5 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| TOTAL | 0 | 2 | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 02:00 PM | 1 | 2 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 6 |
| 02:15 PM | 1 | 2 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:45 PM | 1 | 3 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| TOTAL | 3 | 7 | 0 | 0 | 10 | 0 | 11 | 0 | 0 | 11 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 22 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 03:30 PM | 0 | 2 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| TOTAL | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 4 | 7 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 9 |
| AM Peak <br> 11:45 AM to <br> 12:45 PM |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0 | 4 | 0 | 0 | 4 | 0 | 6 | 0 | 0 | 6 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 03:00 PM to 04:00 PM | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 4 | 7 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 9 |







DATE: $\begin{aligned} & \text { August 28, } 2019 \text { (Wednesday) } \\ & \text { LOCATION: } \underline{\text { Buenaventura Bv \& Lakepoint Cir }}\end{aligned}$.

| 15 MINUTE TURNING MOVEMENT COUNTS <br> (Trucks Only) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DATE: August 28, 2019 (Wednesday) |  |  |  |  |  |  |  |  |  |  |  | CITY: Buena Ventura Lakes <br> OUNTY: Osceola County |  |  |  |  | $\begin{array}{r} \text { LATITUDE: } \underline{0} \\ \text { LONGITUDE: } \underline{0} \end{array}$ |  |  |  |  |  |  |
| location: Buenaventura Bv \& Lakepoint Cir |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  | Lakepoint Cir |  |  |  |  |  |  |  | Lakepoint Cir |  |  |  |  |  |  |
| $\begin{gathered} \hline \text { TIME } \\ \text { BEGIN } \end{gathered}$ | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{array}{c\|} \hline \text { N/S } \\ \text { TOTAL } \end{array}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \end{array}$ | $\begin{aligned} & \text { GRAND } \\ & \text { TOTAL } \end{aligned}$ |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 11:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 11:15 AM | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 11:30 AM | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 11:45 AM | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 4 |
| TOTAL | 0 | 9 | 1 | 0 | 10 | 0 | 6 | 0 | 0 | 6 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 17 |
| 12:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| TOTAL | 0 | 3 | 0 | 0 | 3 | 0 | 6 | 0 | 0 | 6 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 10 |
| 02:00 PM | 0 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:15 PM | 0 | 4 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 02:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 02:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 6 |
| TOTAL | 0 | 9 | 1 | 0 | 10 | 0 | 9 | 0 | 0 |  | 19 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 21 |
| 03:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:15 PM | 0 | 3 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 6 |
| 03:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 7 | 1 | 0 | 8 | 0 | 6 | 0 | 0 | 6 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 15 |
| 04:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 04:15 PM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:30 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 0 |  | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| TOTAL | 0 | 8 | 0 | 0 | 8 | 0 | 4 | 0 | 0 | 4 | 12 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 13 |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 05:15 PM | 0 | 3 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:45 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| TOTAL | 0 | 6 | 0 | 0 | 6 | 0 | 7 | 0 | 0 | 7 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| AM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\left.\begin{gathered} 07: 15 \mathrm{AM} \text { to } \\ 08: 15 \mathrm{AM} \end{gathered} \right\rvert\,$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Midday Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\left.\begin{array}{\|c\|c\|c\|} \hline \text { 02:45 PM to } \\ 03: 45 ~ P M \mid \end{array}\right]$ | 0 | 9 | 1 | 0 | 10 | 0 | 9 | 0 | 0 | 9 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 21 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\left.\begin{gathered} 04: 30 \mathrm{PM} \mathrm{to} \\ 05: 30 \mathrm{PM} \end{gathered} \right\rvert\,$ | 0 | 9 | 0 | 0 | 9 | 0 | 7 | 0 | 0 | 7 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |

DATE: August 28, 2019 (Wednesday)
Location: Buenaventura Bv \& Lakepoint Cir

CITY: Buena Ventura Lakes LATITUDE: 0 COUNTY: Osceola County LONGITUDE: 0

| DATE: August 28, 2019 (Wednesday) LOCATION: Buenaventura Bv \& Lakepoint Cir |  |  |  |  |  |  |  |  |  |  |  | CITY: Buena Ventura Lakes COUNTY: Osceola County Lakepoint Cir |  |  |  |  |  | LATITUDE: 0 LONGITUDE: |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  |  |  |  |  |  |  |  | Lakepoint Cir |  |  |  |  |  |  |
| TIME | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{gathered} \mathbf{N / S} \\ \text { TOTAL } \end{gathered}$ | EASTBOUND |  |  |  |  |  | WESTBOUND |  |  |  |  | $\begin{array}{\|c\|c\|} \hline \text { EOTAL } \\ \hline \text { TOTAL } \end{array}$ | GRAND |
|  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R |  | U-turn | \|TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | , | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | , | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | a | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | - |
| 04:30 PM | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | , | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |








## 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)
DATE: May 22, 2019 (Wednesday)
LOCATION: Buenaventura Bv \& Osceola Py
CITY: Buena Ventura Lake LATITUDE: 0
county: Osceola County LONGITUDE: 0


## 15 MINUTE TURNING MOVEMENT COUNTS

## (Trucks Only)

DATE: May 22, 2019 (Wednesday)
location: Buenaventura Bv \& Osceola Py

CITY: Buena Ventura Lake LATITUDE: 0 county: Osceola County LONGITUDE: 0

|  | Buenaventura Bv |  |  |  |  | Buenaventura Bv |  |  |  |  | Osceola Py |  |  |  |  |  | Osceola Py |  |  |  |  | $\begin{array}{\|c\|} \hline \text { E/W } \\ \text { TOTAL } \end{array}$ | $\begin{aligned} & \text { GRAND } \\ & \text { TOTAL } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TIME | NORTHBOUND |  |  |  |  | SOUTHBOUND |  |  |  |  | $\begin{array}{\|c\|} \hline \text { N/S } \\ \text { TOTAL } \end{array}$ | EASTBOUND |  |  |  |  | WESTBOUND |  |  |  |  |  |  |
| BEGIN | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  | L | T | R | U-turn | TOTAL | L | T | R | U-turn | TOTAL |  |  |
| 07:00 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 3 | 0 | 3 | 1 | 0 | 4 | 7 | 9 |
| 07:15 AM | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 1 | 5 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 7 | 10 |
| 07:30 AM | 1 | 2 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 5 | 2 | 2 | 0 | 0 | 4 | 2 | 3 | 1 | 0 | 6 | 10 | 15 |
| 07:45 AM | 1 | 2 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 5 | 1 | 5 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 7 | 12 |
| TOTAL | 3 | 7 | 2 | 0 | 12 | 0 | 3 | 0 | 0 | 3 | 15 | 5 | 13 | 1 | 0 | 19 | 2 | 8 | 2 | 0 | 12 | 31 | 46 |
| 08:00 AM | 2 | 1 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 3 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 8 |
| 08:15 AM | 2 | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 3 | 5 | 1 | 1 | 1 | 0 | 3 | 2 | 2 | 0 | 0 | 4 | 7 | 12 |
| 08:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 3 | 5 |
| 08:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| TOTAL | 5 | 2 | 0 | 0 | 7 | 2 | 6 | 0 | 0 | 8 | 15 | 1 | 3 | 2 | 0 | 6 | 2 | 4 | 1 | 0 | 7 | 13 | 28 |
| 04:00 PM | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 3 | 5 | 1 | 2 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 5 | 10 |
| 04:15 PM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 2 | 0 | 7 | 0 | 2 | 0 | 0 | 2 | 9 | 11 |
| 04:30 PM | 3 | 1 | 1 | 0 | 5 | 0 | 2 | 0 | 0 | 2 | 7 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 10 |
| 04:45 PM | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| TOTAL | 6 | 3 | 3 | 0 | 12 | 2 | 3 | 0 | 0 | 5 | 17 | 1 | 10 | 3 | 0 | 14 | 0 | 4 | 0 | 0 | 4 | 18 | 35 |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 3 |
| 05:15 PM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 4 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| TOTAL | 2 | 2 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 3 | 7 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 12 |
| AM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} \text { 07:15 AM to } \\ 08: 15 \mathrm{AM} \\ \hline \end{gathered}$ | 5 | 6 | 2 | 0 | 13 | 1 | 5 | 0 | 0 | 6 | 19 | 4 | 13 | 0 | 0 | 17 | 2 | 6 | 1 | 0 | 9 | 26 | 45 |
| PM Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} \text { 04:45 PM to } \\ \text { 05:45 PM } \\ \hline \end{gathered}$ | 2 | 2 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 1 | 6 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 11 |




FLORIDA DEPARTMENT OF TRANSPORTATION VEHICLE SPOT SPEED STUDY


Z:\2018 Projects $\backslash 11128$ (FDOT-5 Safety)\TWO 13_Buenaventura Corridor Study\DATA\Site 1 (Buenaventura Blvd Between Rider Cir and Trotters Cir) (Buenaventura Blvd Between Rider Circle and Trotters Circle

FLORIDA DEPARTMENT OF TRANSPORTATION VEHICLE SPOT SPEED STUDY


| Northbound |  |
| :---: | :---: |
| Cumulative |  |

## CMF / CRF Details

CMF ID: 1410

Add 3-inch yellow retroreflective sheeting to signal backplates
Description:
Prior Condition: No Prior Condition(s)
Category: Intersection traffic control
Study: Safety Impact of Increased Traffic Signal Backboards Conspicuity, Sayed et al., 2005

| Crash Modification Factor (CMF) |  |
| :---: | :--- |
| Value: | 0.85 |
| Adjusted Standard Error: |  |
| Unadjusted Standard Error: | 0.005 |


| Crash Reduction Factor (CRF) |  |
| ---: | :--- |
| Value: | 15 (This value indicates a decrease in crashes) |
| Adjusted Standard Error: |  |

## Applicability

| Crash Type: | All |
| :---: | :---: |
| Crash Severity: | All |
| Roadway Types: | Not specified |
| Number of Lanes: |  |
| Road Division Type: |  |
| Speed Limit: |  |
| Area Type: | Urban |
| Traffic Volume: |  |
| Time of Day: | All |
| If | untermeasure is intersection-based |
| Intersection Type: | Roadway/roadway (not interchange related) |
| Intersection Geometry: |  |
| Traffic Control: | Signalized |
| Major Road Traffic Volume: |  |
| Minor Road Traffic Volume: |  |

Development Details

Date Range of Data Used:

Municipality:

State:

| Country: |  |
| :---: | :---: |
| Type of Methodology Used: | Before/after using empirical Bayes or full Bayes |
| Sample Size Used: | Sites |
| Before Sample Size Used: | 17 Sites |
| After Sample Size Used: | 17 Sites |
| Other Details |  |
| Included in Highway Safety Manual? | No |
| Date Added to Clearinghouse: | Dec-01-2009 |
| Comments: |  |

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment. CRASH MODIFICATION FACTORS CLEARINGHOUSE

## CMF / CRF Details

CMF ID: 7690

Change from protected only to flashing yellow arrow protected/permissive left turn with time of day operation

Description: Change from protected only to FYA - protected/permissive left turn with time of day operation

Prior Condition: Protected phasing
Category: Intersection traffic control
Study: Safety Effectiveness of Flashing Yellow Arrow: Evaluation of 222 Signalized Intersections in North Carolina, Simpson and Troy, 2015

| Crash Modification Factor (CMF) |  |
| :---: | :--- |
| Value: | 0.901 |
| Adjusted Standard Error: |  |
| Unadjusted Standard Error: | 0.048 |

## Crash Reduction Factor (CRF)

Value: $\quad 9.9$ (This value indicates a decrease in crashes)

| Adjusted Standard Error: |  |
| :---: | :---: |
| Unadjusted Standard Error: | 4.8 |
| Applicability |  |
| Crash Type: | All |
| Crash Severity: | All |
| Roadway Types: | Not specified |
| Number of Lanes: |  |
| Road Division Type: |  |
| Speed Limit: | 35-45 |
| Area Type: | Not specified |
| Traffic Volume: |  |
| Time of Day: | All |
| If countermeasure is intersection-based |  |
| Intersection Type: | Roadway/roadway (not interchange related) |
| Intersection Geometry: | 4-leg |
| Traffic Control: | Signalized |
| Major Road Traffic Volume: | 19000 to 41000 Annual Average Daily Traffic (AADT) |
| Minor Road Traffic Volume: | 3000 to 32000 Annual Average Daily Traffic (AADT) |


|  | Development Details |
| ---: | :--- |
| Date Range of Data Used: | 2003 to 2013 |
| Municipality: |  |
|  |  |


| State: | NC |
| :---: | :--- | :--- |
| Country: |  |
| Type of Methodology Used: | Other before/after |
| Sample Size Used: |  |


|  | Other Details |
| :--- | :--- |
| Included in Highway Safety |  |
| Manual? | No |
| Date Added to Clearinghouse: | Nov-01-2015 |
| Comments: |  |

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

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| $\begin{array}{\|l\|} \hline \text { Project Name } \\ \hline \text { Project Category } \\ \hline \end{array}$ |  | Buenaventura Boulevard |  | Project Description |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Long-Term Improvements |  | Correct superelevation, reduce lane widths, modify signals and close/directionalize medians. |  |  |
| Current Year |  |  | 2020 |  |  |  |
| Project Completion |  |  | 2021 | NPV |  |  |
| Proejct Life |  |  | 20 |  |  |  |
| Project End |  |  | 2040 | \$1,516,318 |  |  |
| Discount Rate |  |  | 0.04 |  |  |  |
| Costs / Benefits |  |  |  | Calculation |  |  |
| Year \# | Calendar Year | Estimated Cost | Estimated Benefits | Discount Factor | Discounted Cost | Discounted Benefits |
| 0 | 2020 | \$1,819,513 | \$0 | 1.000 | (\$1,819,513) | \$0 |
| 1 | 2021 | \$0 | \$245,456 | 0.962 | \$0 | \$236,016 |
| 2 | 2022 | \$0 | \$245,456 | 0.925 | \$0 | \$226,938 |
| 3 | 2023 | \$0 | \$245,456 | 0.889 | \$0 | \$218,210 |
| 4 | 2024 | \$0 | \$245,456 | 0.855 | \$0 | \$209,817 |
| 5 | 2025 | \$0 | \$245,456 | 0.822 | \$0 | \$201,747 |
| 6 | 2026 | \$0 | \$245,456 | 0.790 | \$0 | \$193,988 |
| 7 | 2027 | \$0 | \$245,456 | 0.760 | \$0 | \$186,527 |
| 8 | 2028 | \$0 | \$245,456 | 0.731 | \$0 | \$179,352 |
| 9 | 2029 | \$0 | \$245,456 | 0.703 | \$0 | \$172,454 |
| 10 | 2030 | \$0 | \$245,456 | 0.676 | \$0 | \$165,821 |
| 11 | 2031 | \$0 | \$245,456 | 0.650 | \$0 | \$159,444 |
| 12 | 2032 | \$0 | \$245,456 | 0.625 | \$0 | \$153,311 |
| 13 | 2033 | \$0 | \$245,456 | 0.601 | \$0 | \$147,415 |
| 14 | 2034 | \$0 | \$245,456 | 0.577 | \$0 | \$141,745 |
| 15 | 2035 | \$0 | \$245,456 | 0.555 | \$0 | \$136,293 |
| 16 | 2036 | \$0 | \$245,456 | 0.534 | \$0 | \$131,051 |
| 17 | 2037 | \$0 | \$245,456 | 0.513 | \$0 | \$126,011 |
| 18 | 2038 | \$0 | \$245,456 | 0.494 | \$0 | \$121,164 |
| 19 | 2039 | \$0 | \$245,456 | 0.475 | \$0 | \$116,504 |
| 20 | 2040 | \$0 | \$245,456 | 0.456 | \$0 | \$112,023 |

