## Broward



Road Safety Analysis Report
For
Royal Palm Boulevard at Riverside Drive Broward County

February 2022


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### 1.0 INTRODUCTION

The Royal Palm Boulevard at Riverside Drive signalized intersection was identified as a high-crash location in the 2045 Metropolitan Transportation Plan (MTP) and chosen for study by the Broward Metropolitan Planning Organization (BMPO). The location is in the City of Coral Springs and under the maintenance jurisdiction of Broward County. The study intersection in relation to the surrounding roadways is graphically depicted on the Location Map below.


### 2.0 EXISTING CONDITION

The characteristics of the study intersection of Royal Palm Boulevard at Riverside Drive located in the City of Coral Springs, Broward County, Florida are summarized below. An intersection condition diagram is provided in the following pages.


| Features | Description |
| :---: | :---: |
|  | Sidewalk present along both sides of Riverside Drive, north of Royal Palm Boulevard. <br> Sidewalk present along both sides of Riverside Drive, south of Royal Palm Boulevard. |
| Bicycle Lanes | None, with the exception of a westbound receiving lane that exists for approximately 600 feet east of Riverside Drive. |
| Pedestrian/Bicycle Generators | High- and medium-density residential developments along Royal Palm Boulevard and Riverside Drive. <br> Somerset Academy Riverside, Forest Hills Park |
| Nearest Signalized Intersections | 0.98 miles to the east along Royal Palm Boulevard Intersecting Rock Island Road. |
|  | 0.86 miles to the west along Royal Palm Boulevard Intersecting University Drive. |
|  | 1.00 miles to the north along Riverside Drive intersecting Sample Road. <br> 0.86 miles to the south along Riverside drive intersecting Shadow Wood Boulevard. |
|  | Roadway lighting present on east sides of Riverside Boulevard, North of Royal Palm Boulevard. |
|  | Roadway lighting present on north and south side of Royal Palm Boulevard. |
| Surrounding Development | Royal Palm Boulevard: High- and medium-density residential and commercial. Institutional, recreation, and places of worship. <br> Riverside Drive: High- and medium-density residential. |
| Pavement, Signing \& Marking Condition | Along Royal Palm Boulevard: Good |

## Features Description

|  | Along Riverside Drive: Good |
| :--- | :--- |
| Transit | Broward County Transit route 83 along Royal Palm Boulevard. WB transit <br> stop 245 feet west of Riverside Drive and EB transit stop 220 feet east of <br> Riverside Drive. |
|  | Broward County Transit route 62 along Riverside Drive. NB transit stop <br> 395 feet south of Royal Palm Boulevard, NB transit stop 585 feet north of <br> Royal Palm Boulevard and SB transit stop 455 feet north of Royal Palm <br> Boulevard. |



### 3.0 COLLISION ANALYSIS

According to crash records obtained by VHB from Signal4Analytics, there were 287 reported crashes from January 1, 2015 to August 10th, 2021. The total property damage from these crashes was estimated at $\$ 1,477,158$. Three pedestrian and two bicycle crashes were reported during the study period. The crash summary is attached as
Appendix A.
The number of crashes by types are as follows:

| Rear-End | 162 | $(56.4 \%)$ |
| :--- | ---: | ---: |
| Left Turn | 56 | $(19.5 \%)$ |
| Sideswipe | 28 | $(9.8 \%)$ |
| Angle | 13 | $(4.5 \%)$ |
| Ran-off Road | 10 | $(3.5 \%)$ |
| Right Turn | 7 | $(2.4 \%)$ |
| Pedestrian | 3 | $(1.0 \%)$ |
| Head-on | 3 | $(1.0 \%)$ |
| Other | 3 | $(1.0 \%)$ |
| Bicycle | 2 | $(0.7 \%)$ |

The number of crashes by contributing cause is as follows:

| Careless Driving | 165 | $(57.5 \%)$ |
| :--- | ---: | ---: |
| Failed to Yield ROW | 75 | $(26.1 \%)$ |
| Improper Lane Change | 24 | $(8.4 \%)$ |
| Disregarded Stop Sign | 9 | $(3.1 \%)$ |
| Improper Turn | 5 | $(1.7 \%)$ |
| Disregarded Traffic Signal | 4 | $(1.4 \%)$ |
| Other | 4 | $(1.4 \%)$ |
| Exceeded Speed Limit | 1 | $(0.3 \%)$ |

The number of crashes by lighting condition are as follows:

| Daylight | 221 | $(77.0 \%)$ |
| :--- | ---: | ---: |
| Dark-Lighted | 52 | $(18.1 \%)$ |
| Dusk | 11 | $(3.8 \%)$ |
| Dawn | 2 | $(0.7 \%)$ |
| Dark-Not Lighted | 1 | $(0.3 \%)$ |

The number of crashes by analysis year are as follows:

| Year 2015 | 26 | $(9.1 \%)$ |
| :--- | :--- | ---: |
| Year 2016 | 36 | $(12.5 \%)$ |
| Year 2017 | 43 | $(15.0 \%)$ |
| Year 2018 | 55 | $(19.2 \%)$ |
| Year 2019 | 58 | $(20.2 \%)$ |
| Year 2020 | 39 | $(13.6 \%)$ |
| Year 2021 (till July 31) | 30 | $(10.5 \%)$ |

There were 162 rear-end crashes were reported from January 1, 2015 to July 31, 2021. These crashes were a result of careless driving or inattention to stopped or slowing vehicles ahead due to congestion. These crashes resulted in thirty-one injuries and zero fatalities. Of these rear-end crashes, 127 occurred during daylight conditions, 26 occurred under dark-lighted conditions, seven occurred during dusk, one under dawn conditions, and one under dark-not lighted conditions.

Fifty-six left-turn crashes were reported during the study period. These crashes were predominantly the result of failing to yield right of way. These crashes resulted in thirtyone injuries and zero fatalities. Of these left-turn crashes, forty occurred during daylight conditions, thirteen occurred under dark-lighted conditions, and three occurred during dusk.

Twenty-eight sideswipe crashes were reported during the study period. Approximately $41 \%$ of crashes occurred on Riverside Drive and 59\% on Royal Palm Boulevard. The majority of crashes occurred when a driver was changing lanes to make a turn. Two crashes occurred because a driver was following too closely and swerved to avoid a rear end crash. Three crashes occurred between a northbound right turning driver and southbound left turning driver. These crashes resulted in three injuries and zero fatalities.

Of these sideswipe crashes, twenty-five occurred during daylight conditions, and three occurred under dark-lighted conditions.

Thirteen angle crashes were reported during the study period. These crashes were a result of multiple factors like failing to yield right of way, disregarding traffic signal and improper turn. These crashes resulted in seven injuries and zero fatalities. Eight of these angle crashes occurred during daylight conditions, four occurred under dark-lighted conditions and one under dawn conditions.

Three head-on crashes were reported during the study period. These crashes were a result of failing to yield right of way. These crashes resulted in one injury and zero fatalities. All three crashes occurred during daylight conditions.

Three pedestrian crashes were reported during the study period. These crashes were a result of failing to yield right of way. These crashes resulted in three injuries and zero fatalities. One crash occurred during daylight conditions, and two occurred under darklighted conditions.

Two bicycle crashes were reported during the study period. These crashes were a result of failing to yield right of way. These crashes resulted in one injury and zero fatalities. Both crashes occurred during daylight conditions.


### 4.0 Field Observations

A qualitative assessment based on field observations was performed by a team of stakeholders on October 5, 2021 at the study intersection of Royal Palm Boulevard at Riverside Drive. The team consisted of the following representatives:

Name<br>Mark Brown<br>Agency<br>Broward MPO<br>Brooke Peters<br>Coral Springs<br>Derek Fernandes<br>Lei Cai<br>Edil Pena<br>Dan D'Antonio<br>Coral Springs<br>Broward County Traffic Engineering<br>T.Y. Lin International<br>VHB

Prior to the field observations, the RSA team was provided with corridor existing conditions data related to crash history, geometrics, and surrounding land use patterns. The crash trends were compared to traffic and physical conditions to identify field factors potentially contributing to increased crash risk. In addition, maintenance issues were identified and are detailed later in this report.

The purpose of the qualitative assessment was to evaluate safety of the intersection while taking into consideration prevailing operating traffic conditions to identify areas where improvements would be potentially beneficial for safety and efficiency. Specific attention was paid to the interaction between vehicular and non-vehicular roadway users. Field photographs are attached in Appendix B.

## Mobility and Safety:

1. During uncongested time periods, traffic was observed approaching the intersection at or slightly above the posted speed limit of 40 mph for all approaches.
2. The traffic was observed to arrive in platoons on Royal Palm Boulevard and Riverside Drive. However, the westbound platoon was observed to arrive during the red signal phase most often.
3. The eastbound queue length extended approximately 500 feet to the west during the AM peak hour, nearly to the adjacent median opening.
4. Sight lines to make right turn on red movements require drivers to move past the stop lines and into the crosswalks. Drivers were observed to pass the stop lines without pause and enter the crosswalks or continue past at speeds unsafe for pedestrians.
5. Horizontal signal heads are provided for all approaches. Signal heads were equipped with backplates on east/west approaches but were absent on the north/south approaches. The existing backplates do not have retroreflective borders.
6. All left turn movements have protected/permissive signal phasing with 5 -section horizontal heads.
7. All approaches feature a R10-15 (Turning Vehicles Yield to Pedestrians) sign mounted overhead on the approach mast arm.
8. During the p.m. peak hour observation period, the southbound outside through traffic was observed to have a higher lane utilization compared to the inside lanes due to a high number of vehicles lining up to turn right onto Royal Palm Boulevard.
9. Traffic accessing the Walgreens in the southeast quadrant was observed to enter and exit the driveway on Royal Palm Boulevard illegally. Vehicles were observed to enter via the westbound direction by turning left across the double yellow directional markings. Traffic exiting was observed to turn left from the right-in/ right-out driveway. Potential conflict with eastbound and westbound traffic was observed.
10. Drivers were observed to disregard pedestrians in the crosswalks when turning right and making permissive left turns during the WALK phase and pedestrian clearance intervals.
11. Drivers were observed using the striped-out area between the eastbound through lane and curb to decelerate before turning into the Walgreens parking lot.
12. Broward County Transit route 83 along Royal Palm Boulevard west of the intersection is provided with benches while it does not accompany a shelter. The bus stop east of the intersection does not provide benches or the shelter.

## Maintenance:

13. The pavement condition was observed to be in fair condition along all approaches.
14. The crosswalks were worn in areas where right turning traffic crossed the markings.
15. Lane lines and turn arrows are worn on all approaches.
16. The curb ramps appeared to be newer and in good condition with good detectable warning surfaces.
17. School Advance Crossing Assemblies and School Crossing Assemblies (S1-1, W19-9P, and W16-7P) are present in both fluorescent yellow-green and yellow colors. Some sign panels were bent and damaged.

### 5.0 Recommendations

Based on the crash records, field observations of the intersection operation, and input from the multi-disciplinary RSA team, this study recommends the following improvements. Improvements identified as maintenance can be completed within two years, near-term can be completed within three to five years, and long-term can be completed beyond five years.

1. Implement leading pedestrian intervals on all crossings by time of day during school arrival and dismissal times. Maintenance.
Justification: Drivers were observed to disregard pedestrians in the crosswalks, including students attending Somerset Academy Riverside, when making conflicting right turns and permissive left turns.
2. Install ground mounted R10-6a (Stop Here on Red) signs on all approaches. Maintenance.
Justification: Drivers were observed to pass the stop lines without pause and enter the crosswalks or continue past at speeds unsafe for pedestrians.
3. Restripe the northbound right turn chevron area and reconstruct the southeast curb return. Near-term.
Justification: The chevron area makes the intersection approach 12 feet wider than necessary and extends the pedestrian crossing distance of the south leg by 12 feet. The space can be used to gain greater separation between pedestrians and traffic along the east side of the northbound approach.
4. Extend the east median nose with a 4-foot concrete separator. Near-term. Justification: Illegal movements were observed to cause potential conflict at the Royal Palm Boulevard driveway for Walgreens. The existing signage and pavement markings only allow right-in/right-out movements; however, no physical barriers are present. Three angle, two rear end, one left turn, and one right turn crashes occurred at this location during the study period.
5. Install advance street name signs on all approaches. Near-term.

Justification: Twenty-eight sideswipe crashes were reported during the study period. Approximately 41\% of crashes occurred on Riverside Drive and 59\% on Royal Palm

Boulevard. The majority of crashes occurred when a driver was changing lanes to make a turn.
6. Install flexible backplates with retroreflective borders. Maintenance. Justification: Rear end, left turn, and angle crashes represent three of the four most prevalent crash types at the intersection. Retroreflective backplates improve the contrast between the signal indications and their surroundings for enhanced conspicuity. Backplates with retroreflective borders are proven to reduce all crash types by 15\% when implemented.
7. Install 4-section flashing yellow arrow (FYA) and additional 3-section signal for through lanes on all approaches. Near-term.
Justification: Fifty-six left-turn crashes were reported during the study period. These crashes were predominantly the result of failing to yield right of way. Changing from 5-section protected/permissive left turn to flashing yellow arrow protected/permissive left turn signals have a crash reduction factor (CRF) of 16.2\% for all crash severities.
8. Remove and replace crosswalks with special emphasis crosswalks. Near-term. Justification: Pedestrian conflict with vehicular traffic was observed during the field review. Three pedestrian crashes and two bicycle crashes occurred during the study period. Special emphasis crosswalks provide enhanced visibility of the appropriate location for drivers to expect pedestrians in the roadway.
9. Replace existing S1-1 assemblies that are yellow or damaged to match existing fluorescent yellow-green sign assemblies. Maintenance. Justification: School Advance Crossing Assemblies and School Crossing Assemblies (S1-1, W19-9P, and W16-7P) are present in both fluorescent yellow-green and yellow colors. Some sign panels were bent and damaged.

A conceptual improvement diagram is attached as Appendix C. A construction cost estimate, benefit-cost (B-C) analysis, and net present value (NPV) analysis are attached as Appendices D, E, and F, respectively.

The project cost, benefit-cost ratio, and NPV are summarized in the following table.

| Project Cost Estimate | $\$ 173,437.49$ |
| :--- | :--- |
| B-C Ratio (Benefit \$/Cost \$) | 169.75 |
| NPV | $\$ 30,780,368$ |

The B-C ratio is the present value of benefits over the present value of costs. A B-C ratio greater than 1.0 indicates that benefits exceed the costs and the project is economically justified. Generally, higher B-C ratios are more desirable.

The NPV is the difference between the present value of benefits and present value of costs over the life of the improvements. NPV is sometimes called net benefits or net present worth. A positive NPV indicates that benefits exceed costs and the project is economically justified. Generally, higher NPVs are desirable.

### 6.0 Feasibility Review

A feasibility review was conducted for each of the recommendations. Due to the nature of some improvements, no additional feasibility review was required. These are noted as such in the summary presented below.

Recommendation 1: Implement leading pedestrian intervals on all crossings by time of day during school arrival and dismissal times.

Feasibility Review: Conditional traffic signal controller logic is required to implement this recommendation. Not all controllers have this capability. However, Broward County maintains an updated system and there is a high likelihood that this recommendation is feasible. If the controller is not capable of LPIs by time of day, implementation of LPIs during all times is an acceptable alternative.

Recommendation 2: Install ground mounted R10-6a (Stop Here on Red) signs on all approaches. Maintenance.

Feasibility Review: This recommendation is feasible without additional investigation.
Recommendation 3: Restripe the northbound right turn chevron area and reconstruct the southeast curb return.

Feasibility Review: The project can be constructed within the existing right of way as it does not move the back of sidewalk from the current location. The southeast quadrant will be reconstructed with a curb extension, also known as a bulbout. Utilities are present in the southeast quadrant; however, the existing sidewalk location will not change. The sidewalk may need to be reconstructed to match grades of the bulbout, but no utilities appear to be within the area of sidewalk to be reconstructed.

The bulbout may cause a change in sheet flow patterns. Elevation data will need to be reviewed to ensure no ponding will develop around the bulbout. If the bulbout restricts flow to existing inlets, treatments similar to the inset image may need to be considered.


Recommendation 4: Extend the east median nose with a 4-foot concrete separator.

Feasibility Review: This improvement is within the existing travel way on the east leg of the intersection. No impacts to utilities or right of way are expected. The improvement provides a physical restriction for access related movements that are already restricted by signing and pavement markings. Coordination with the adjacent Walgreens should occur during the design phase.

Recommendation 5: Install advance street name signs on all approaches.
Feasibility Review: Florida's Traffic Engineering Manual recommends multi-column signs with 10.67 E -mod font for advance street name signs on facilities with posted speeds of 40 $m p h$ or greater. The manual provides guidance for corridors with limited right of way. Reduced font or single-column and cantilever supports may need to be considered.

Recommendation 6: Install flexible backplates with retroreflective borders.
Feasibility Review: Installation of flexible retroreflective backplates is exempt from additional structural analysis per FDOT's Traffic Engineering Manual, Section 3.9.

Recommendation 7: Install 4-section flashing yellow arrow (FYA) and additional 3-section signal for through lanes on all approaches.

Feasibility Review: The structural capacity of the mast arms to handle the additional load presents a risk to feasibility. Five-section signal heads will be removed and one four-section and an additional three-section signal head will be provided. All mast arms currently have "Turning Vehicles Yield To Pedestrian" and street name signs mounted overhead. These signs can be removed and provided via ground-mount or affixed to the upright to create additional structural capacity, if necessary. A structural analysis will need to be conducted to verify the capacity of the existing mast arms. FDOT's Florida Design Manual provides guidance in Chapter 261.

Recommendation 8: Remove and replace crosswalks with special emphasis crosswalks.
Feasibility Review: This recommendation is feasible without additional investigation.
Recommendation 9: Replace existing S1-1 assemblies that are yellow or damaged to match existing fluorescent yellow-green sign assemblies.

Feasibility Review: This recommendation is feasible without additional investigation.
The Candidate Project Feasibility Checklist for TSM\&O/Safety Program Funds is provided in Appendix G.

### 7.0 Implementation Plan

The implementation plan presented below identifies the agency responsible for the implementation, the nature of the improvement with respect to maintenance/near-term/long-term, and the associated costs.

| Improvement | Responsible Agency | Agency with Roadway Jurisdiction | Maint., Near-, or Long-Term | Cost |
| :---: | :---: | :---: | :---: | :---: |
| 1. Implement leading pedestrian intervals on all crossings by time of day during school arrival and dismissal times. | Broward County | Broward County | Maintenance | No cost |
| 2. Install ground mounted R10-6a (Stop Here on Red) signs on all approaches. | Coral Springs or Broward County | Broward County | Maintenance | <\$10,000 |
| 3. Restripe the northbound right turn chevron area and reconstruct the southeast curb return. | Coral Springs or Broward County | Broward County | Near-term | <\$100,000 |
| 4. Extend the east median nose with a 4 -foot concrete separator. | Coral Springs or Broward County | Broward County | Near-term | <\$50,000 |
| 5. Install advance street name signs on all approaches. | Coral Springs or Broward County | Broward County | Near-term | <\$10,000 |
| 6. Install flexible backplates with retroreflective borders. | Broward County | Broward County | Maintenance | <\$5,000 |
| 7. Install 4-section flashing yellow arrow (FYA) and additional 3 -section signal for through lanes on all approaches. | Broward County | Broward County | Near-term | <\$15,000 |
| 8. Remove and replace crosswalks with special emphasis crosswalks. | Broward County or Coral Springs | Broward County | Near-term | <\$10,000 |


| Improvement | Responsible <br> Agency | Agency with <br> Roadway Jurisdiction | Maint., Near-, <br> or Long-Term | Cost |
| :--- | :---: | :---: | :---: | :---: |
| 9. Replace existing S1-1 assemblies that are yellow or <br> damaged to match existing fluorescent yellow-green <br> sign assemblies. | Broward County | Broward County | Maintenance | $<\$ 2,000$ |

## Appendix A - Crash Summary



| ceash Ref. No. | hswv no. | рате | dar | TIME | Venicie Type Involved |  | CRash Trpe | fatal | Nurk | incapaciating |  | Possible INURY | NON- TRAFFIC <br> FATALI | FATALITY WITHIN <br> 30 DAYS |  | LGнting conotion |  | contributing cause |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
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| ${ }_{8}^{86}$ | ${ }_{86798013}$ | 8/1170017 | Firidy | ${ }^{10317 \mathrm{PM}}$ | Mototized venicle | No | $\xrightarrow{\text { Reare } \text { End }}$ | $\bigcirc$ |  |  | $\bigcirc$ |  | 0 | 0 | 88000 |  | Wet | Careliss bev |
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|  | 8679819 | ${ }_{872020077}$ | Sunday | ${ }^{11.068 \mathrm{M}}$ | Motirized venicle | No | Left Tum | 0 | 2 | 0 | 0 | 2 | 0 | 0 | \$10,000 | Dark-Lighted | wet |  |
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| 101 | ${ }_{8664665}$ | 12712017 | Wefriday | ${ }_{6}^{3.569 \mathrm{M}}$ | Motorized venicice | No | Stieswipe | 0 | 0 | 0 | 0 |  | 0 | 0 | \$1,000 | Dakk Liohted | bry | IMPROPOPR LINE CHANGE |
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| ${ }^{113}$ | 87556820 | 3/1212018 | Monday | 630 AM | Motorized venicice | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \$1,00 | Dark-Lighed | Dry | Carliss diving |
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| ${ }^{121}$ | ${ }^{8755749}$ | ${ }_{5 / 13 / 2018}$ | Sundar | ${ }^{12377 \mathrm{PM}}$ | Mototized venicle | No | Left Tum | 0 | 1 | $\bigcirc$ | 0 | 1 | 0 | 0 | S11,500 | Dapight | Wet | FAlLE TO YELD RIGHT Of WAV |
| ${ }^{123}$ | ${ }^{87557638}$ | $5{ }_{5} 5222018$ | Tuestay | ${ }^{2.149 \mathrm{PM}}$ | Mototized venicice | ${ }_{\text {No }}$ | ${ }_{\text {Reare fnd }}$ | 0 | 2 | 0 | 0 | 2 | 0 | 0 | ${ }_{\text {Stinem }}$ | Daxilight | Dr | CaREESSS RNMNG |
| 124 | 87557683 | 5/25/2018 | fridy | ${ }_{9,42 \mathrm{PM}}$ | Motorized venicic | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ${ }^{53,000}$ | Daak-Lighted | Wet | Cartiss diving |
| ${ }_{125}^{125}$ | 875859115 | T7620018 |  |  | Motorez venice | No | Staespe |  |  |  |  |  |  |  | (s2000 | Dark- Lighed | ${ }_{\text {or }}^{\text {dy }}$ |  |
| ${ }_{127}^{127}$ | ${ }_{8}^{87558222}$ | 7/17720018 | ${ }_{\substack{\text { Suturay } \\ \text { Tuestay }}}$ | ${ }_{6}^{10.25 \mathrm{PM}}$ | Motorized veneide | ${ }_{\text {No }}$ | ${ }_{\text {Lem }}^{\substack{\text { Learermd }}}$ | 0 | ${ }^{3}$ | 0 | ${ }^{3}$ | 0 | 0 | 0 |  | ${ }_{\text {Lex }}$ Daxilight | by | Careless orving |
| ${ }^{128}$ | ${ }_{8}^{87558234}$ | 77002018 | Friay | ${ }_{7}^{7} 52 \mathrm{AM}$ | Motorized venicice | No | Rear nd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5800 | Daylight | or | CaRELESS DRVMNG |
| ${ }_{130}$ | ${ }^{87558390}$ | $883 / 2018$ | fridy | 623 PM | Moorized venicle | No | Right Tum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ${ }_{\text {S4,500 }}$ | Daxilight | Dry | FAlle To Yelo Right of way |
|  | 87558525 | 8/1512018 | Wedinssay |  | Mootrized venicice | No | Left Tum | 0 | 0 | 0 |  |  |  |  | \$1,500 | Dapligh | Dry | Falleb oo vele Righ of War |
| ${ }_{132}^{138}$ | ${ }_{8}^{87558547}$ |  | $\underset{\text { Wenessay }}{\text { Firdy }}$ |  | Motorerize venicice | No | ${ }_{\text {ker }}^{\substack{\text { Rearend } \\ \text { Rear nd }}}$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | 0 | ¢ |  | ${ }_{\text {Or }}^{\text {Or }}$ |  |
| ${ }_{134}$ | 88558567 | 81/9120018 | Sunday | ${ }_{3.49 \mathrm{PM}}$ | Motoried Veveicle | No | Sideswipe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5500 | Dajlight |  | IMPRoper Line Chavge |
| ${ }_{1}^{135}$ | ${ }_{8}^{8755858890}$ | ${ }^{\text {97720018 }} 910$ | $\xrightarrow{\text { Firiay }}$ Mondy |  | Motorea venicie | $\xrightarrow{\text { No }}$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  | Daik- Lighted | ${ }_{\text {or }}^{\text {Or }}$ |  |
| ${ }^{137}$ | ${ }^{87558874}$ | 91/420018 | friday | ${ }^{8.599}$ | Motorized venicle | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | S10,000 | Daik-Lighted | or | CaRELESS PRVMNG |
| ${ }_{138}^{138}$ | ${ }_{8}^{87599136}$ | ${ }^{\text {c/ithrivoli }}$ |  | ${ }^{\frac{5}{12564}}$ | Motorized veneidice | ${ }_{\text {No }}$ | ${ }_{\text {ker }}^{\substack{\text { Rear frid }}}$ | 0 | $\bigcirc$ | $\bigcirc$ | $!$ | $\bigcirc$ | $\bigcirc$ | $\stackrel{0}{0}$ | ¢ |  | ${ }_{\text {Or }}^{\text {Ory }}$ | ${ }_{\text {char }}^{\text {Carbiliss brvince }}$ |
| 140 | 87559182 | 10/1020018 | Wedenestay | ${ }^{1.44 P M}$ | Motrized venicice | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | S1,00 | Daylight | Dr | Carelss diving |
| ${ }_{141} 14$ | ${ }^{87914370}$ | ${ }^{101 / 182018}$ | Thursay | 10.55 Sm | Motorzed venice | No |  | 0 | $\bigcirc$ | 0 | $\bigcirc$ | 0 | $\bigcirc$ | 0 | ${ }_{5}^{5.500}$ | Daplight | or | Cariess orvin |
| ${ }_{142}^{142}$ | ${ }_{8}^{87914485}$ | ${ }^{\text {1010 } 17272018}$ | Souturay | ${ }_{1}^{1.537 \mathrm{Am}}$ | Motorizee veneicice | ${ }_{\text {No }}^{\text {No }}$ | Katerse | 0 | 1 |  |  |  |  |  | ${ }_{54000}$ |  | $\frac{\mathrm{Dr}}{\mathrm{Dr}}$ |  |
| ${ }_{145}^{144}$ | ${ }^{87914505}$ | ${ }^{1028822018}$ |  | ${ }^{8.29 P M}$ | Mototized venicle | No | Left turn | 0 | 0 | $\bigcirc$ | $\bigcirc$ | 0 | 0 | $\bigcirc$ | 59000 | Daak- Lighted | $\mathrm{Dr}^{\text {r }}$ | FAlleb To Yelerich of Wav |
| ${ }_{146}$ | 8794650 | 11/12/2018 | Monay | ${ }_{1} 1: 41$ PM | Peadicrcle | No | Bircle | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 50 | Daylight | Dr | FAlle To velo Righi of way |
| ${ }^{147}$ | 88914780 | ${ }^{1120202018}$ | Tuestay | ${ }^{4.46 \mathrm{PM}}$ | Motorized venicice | No | Sideswipe | 0 | $\bigcirc$ | 0 |  |  |  |  | ${ }_{\text {si,400 }}$ | Dapight | or | Improper lane Chavge |
| ${ }_{148}^{148}$ |  | ${ }^{11 / 21 / 2018}$ | Wedestay |  | Motorear enice | $\stackrel{\text { No }}{\text { No }}$ |  | $\bigcirc$ | $\stackrel{2}{0}$ | $\bigcirc$ | $\bigcirc$ | ${ }_{0}$ | $\bigcirc$ | $\bigcirc$ |  | Dark Lighted | ${ }_{\text {Dr }}^{\text {Dr }}$ | FAlleoto |
| 150 | 87994808 | 11/322018 | Ffiday | ${ }^{10.09 P M}$ | Motoried d enicice | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \$3,500 | Dark-Lighted | Dry | Careites divlng |
| ${ }^{151}$ | 88914866 | ${ }^{11 / 2822018}$ | Wedensalay | 8.07 PM | Motrized venicle | No | Left Tum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55,500 | Daak-Lighted | Dry | FAlLED To VELD RIGHT Of WAV |
| ${ }_{\text {l }}^{152}$ | ${ }^{89794933}$ |  | Thursay |  | Motorzed venice | $\xrightarrow{\text { No }}$ | ${ }_{\text {Anale }}^{\text {Ang }}$ | 0 | $\stackrel{1}{2}$ | ! | $\bigcirc$ | $\stackrel{1}{2}$ | $\bigcirc$ | 0 | ¢8000 | Dealight | ${ }^{\text {or }}$ | Falle Covelili Righ of War |
| ${ }_{154}^{154}$ | ${ }^{87914996}$ | 122/102018 | ${ }_{\text {Standay }}$ | ${ }_{7} 7.25 \mathrm{AM}$ | Motoried d venicle | No | Right Tum | 0 | 1 | 1 | 0 | 0 | 0 | 0 | ${ }_{\text {83,500 }}$ | Dayight | Dry | FAlle To Yeli Right of wav |
| ${ }_{156}$ |  | 隹 | $\frac{\text { Wedensesay }}{\text { Wedesesiy }}$ | ${ }_{4}^{4.16 \mathrm{PM} \mathrm{M}}$ | $\frac{\text { Mootred Venice }}{\text { Mosorized venicle }}$ | $\stackrel{\text { No }}{\text { No }}$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  | ${ }_{\text {Dal }}^{\text {Dalight }}$ Disk | Dy |  |
| 157 | 87915126 | 121/82018 | Tuestay | ${ }_{2} 241 \mathrm{PM}$ | Motorized venicle | No | Rear fnd | 0 | 2 | 0 | 0 | 2 | 0 | 0 | S1,250 | Daxight | Dry | Cartiss divnc |
| -158 <br> 159 <br> 15 | - |  | $\frac{\text { Sauray }}{\substack{\text { Sutuday }}}$ |  | Motoread encice | $\frac{\text { No }}{\text { No }}$ | Rear had |  |  | $\bigcirc$ | $\bigcirc$ | 1 | $\bigcirc$ | $\bigcirc$ | ¢ |  | $\frac{\mathrm{Dr}}{\mathrm{Or}}$ | Cartess Rrinc |
| 160 | 8791524 | 123/120018 | Monday | ${ }_{2.20 \mathrm{PM}}^{2}$ | Motorized venicicie | No | Sideswipe | 0 | 0 | 0 |  | 0 | 0 | 0 | 5500 | Daxight | Dry | Mmproper line chance |
| 161 | 88915394 | 1/2/2019 | Wedenesay | ${ }_{4} 4^{1} \mathrm{PM}$ |  | No | Rear fnd | 0 | 0 | 0 | 0 |  | 0 | 0 | S50 |  | or | CaREEESS DRVNG |
| $\underset{162}{163}$ | ${ }_{8}^{89915383}$ | 1/1002019 | Thussay | $\pm$ | Motorizd venicle | No |  | $\bigcirc$ | ${ }_{1}$ | $\bigcirc$ | $\bigcirc$ | 2 | $\bigcirc$ | $\bigcirc$ | Sis.00 | Oark-Lighted |  |  |
| ${ }_{164}^{168}$ | 8791 | 1/1720019 | Thussay | ${ }_{7} 730 \mathrm{AM}$ | Motrized Venicice | No | Rear fend |  |  |  |  |  |  |  | S1,000 | Daxioght |  |  |
| ${ }_{165}^{165}$ | 88915489 | 1/1/82019 | Friday | 10.52 AM | Motorized venicice | No | Left Tum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | S10,000 | Daxiligh | Dr | FAlLE To Yelo Right of way |
| ${ }_{1}^{166}$ | ${ }^{89794543}$ |  |  | ${ }_{7}{ }_{7}^{124989}$ | Motorrear venice | No | $\underbrace{\text { nd }}_{\substack{\text { Rear } \\ \text { Rear nd }}}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ${ }_{\substack{\text { S21000 } \\ \$ 15000}}$ | Dark- Wort tighted | $\frac{\mathrm{Dy}}{\text { Wet }}$ |  |
| 168 | 87915651 | 23/2019 |  | 11.09 AM | Motorize V venicle | No | Rear End | 0 | 0 | 0 |  | 0 | 0 | 0 | 8300 | Daplight | or | Carieles drving |
| $\xrightarrow{169} 1$ |  | ${ }^{24426019}$ | $\frac{\text { Menodey }}{\text { Wenestay }}$ |  |  | No | Pedestrian ${ }_{\text {Angle }}$ | $\bigcirc$ | 1 | $\bigcirc$ | $\stackrel{1}{1}$ | $!$ | $\bigcirc$ | $\bigcirc$ | 50, | $\xrightarrow{\text { Day }}$ Dight | $\frac{\mathrm{Dr}}{\mathrm{Or}}$ |  |
| 171 |  | 29/2019 |  | 10.03 AM | Sorized Veicice | No |  |  |  |  |  |  |  |  |  |  | Wet | FAlle to Mantan vehicie |
|  | 87915750 | 2/122019 | Tuestay | ${ }^{11388 \mathrm{AM}}$ | Motorized Venicle | No | Left Tum | 0 | 2 | 0 | 0 |  |  | 0 | 56000 | Dayligh | Dry | FAlLED TO VELD RIGHT OF WAY |


| crash ref. No. | Hswv no. | рате | dar | тוME | Vehicie Type Involved |  | CRash Trpe | fatal | NJURY | іNCPPactrating |  | PossiliE NUURY | NON- TRAFFIC <br> FATALI | FATALITY WITHIN <br> 30 DAYS |  | LGнting conotion |  | contributing cause |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ${ }_{\text {l }}^{174}$ | ${ }_{\substack{8797539 \\ 8095957}}$ |  | $\underset{\substack{\text { Teusaray } \\ \text { Thusday }}}{ }$ | ${ }_{\substack{9.43 \mathrm{PM} \\ 8065 \mathrm{M}}}$ |  | No | ${ }_{\text {Left }}^{\text {Lefum }}$ | 0 | 1 | 0 | $\stackrel{0}{1}$ | 0 | $\bigcirc$ | $\bigcirc$ | S6,00 <br> 52000 | Cakk -i.ighe | ${ }_{\text {or }}^{\text {or }}$ |  |
| ${ }_{\substack{174 \\ 175}}$ |  | ${ }_{\text {2/212009 }}^{2032019}$ | $\underbrace{\text { and }}_{\substack{\text { Ihurusday } \\ \text { Souray }}}$ | ${ }_{\substack{8.06 \mathrm{AM} \\ 1057 \mathrm{M}}}$ | $\frac{\text { Motorized venice }}{\text { Motrized venicle }}$ | $\stackrel{\text { No }}{\text { No }}$ |  | $\bigcirc$ | 1 | $\bigcirc$ |  |  | $\bigcirc$ | $\bigcirc$ | $\frac{5}{52000}$ <br> 51500 | $\frac{\text { Daylight }}{\substack{\text { Oxilight }}}$ | $\frac{\mathrm{Dr}}{\mathrm{O}}$ |  |
| ${ }_{176}^{175}$ | ${ }_{87966035}$ | 3/8/2019 | ${ }_{\substack{\text { friday }}}$ | 4.538 M | Motorized venicle | No | Rear End | 0 | 0 | 0 |  | 0 | 0 | 0 | S10,000 | Dajlight | by | Cariles diving |
| ${ }_{178}^{178}$ | 87916122 | - $3 / 1662019$ | ${ }_{\text {Saturay }}$ |  | $\frac{\text { Motorized venicle }}{\text { Motrize venicice }}$ | ${ }_{\text {No }}^{\text {No }}$ | ${ }_{\text {Ande }}^{\text {Anaile }}$ | $\bigcirc$ | 1 | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ | S10.000 | Dousk | Wet |  |
| ${ }_{178}^{178}$ | ${ }_{8}^{87916204}$ | ${ }_{\text {3212019 }}$ | ${ }_{\text {Sunasay }}$ | ${ }_{5}^{52689 \mathrm{PM}}$ | Motorized venidice | No | ${ }_{\text {Reare fro }}$ | 0 | 0 |  |  |  | 0 | 0 | S10000 | Davioht |  |  |
| ${ }_{180}^{180}$ | ${ }^{8791643}$ | $43^{4 / 2019}$ | Wednestay | ${ }_{3077 \mathrm{PM}}$ | Motorized venicle | No | Stieswipe | 0 | 0 |  | 0 | 0 | 0 | 0 | 82,500 | Daylight | ory | FAlle To Tello Righ of wav |
| ${ }_{\substack{181 \\ 182}}^{18}$ | ${ }_{8}^{87906368}$ | ${ }_{4}^{4 / 1720009}$ | Sunday | (T08PM | Motoriza venicie | No |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | $\bigcirc$ | $\bigcirc$ | S. | Dust | or |  |
| ${ }_{183}$ | ${ }^{8796437}$ | 4/1012019 | Wedenestay | ${ }_{3.56 \mathrm{PM}}$ | Mototized venicice | No | Rear End | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54000 | Dayight | Dry | Careless drving |
|  | 8896680 | 51020019 | friay | ${ }^{11.000 ~}{ }^{\text {a }}$ | Motorize V venice | No | Angle |  | 1 | 0 |  |  |  |  |  | Daxight | Dry | FAlLE TO YELD RIGHT Of WAV |
|  | 8997027 | 57282099 | Wuesay | ${ }^{12338.5}$ | Mootrea venice | No | ${ }_{\text {Rear ha }}$ | 0 | 0 | 0 | - | 0 | 0 | 0 |  | Darligh | ory | Caritss orvinc |
| ${ }_{187}^{188}$ | ${ }_{8}^{89977172}$ |  | Wenesalay | ${ }_{1}^{41.569 \mathrm{Mm}}$ | Motorized veneicice | ${ }^{\text {No }}$ | ${ }_{\text {Leat }}^{\substack{\text { Leat tur }}}$ | $\bigcirc$ | $\stackrel{1}{1}$ | $\bigcirc$ | ! | $\stackrel{1}{1}$ | 0 | 0 | ${ }_{\substack{5500 \\ 52000}}$ |  | ${ }_{\text {Wer }}$ | falleo To telio kichio of war |
| ${ }_{188}$ | 8791724 | 6/132019 | Thussay | 11:99am | Motoried venicie | No | Reart nd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5300 | Dayight | Dr | Caraless drvin |
| ${ }_{189}$ | 8991228 | 61/62019 | Sunay | 9.1 AM | Motorize V venicle | No |  |  | 0 | 0 |  |  |  |  |  |  | Wet | Mmpropre Lave Chavoe |
| ${ }_{190}^{190}$ | ${ }_{8}^{899777499^{9}}$ | ${ }^{672882009} 7$ | Fridey | ${ }_{8}^{8.277 \mathrm{Mm}}$ | Motored Vencice | $\stackrel{\text { No }}{\text { No }}$ | $\substack{\text { Rearend } \\ \text { Offoad }}$ | $\bigcirc$ | $\stackrel{2}{0}$ | $\bigcirc$ | $\bigcirc$ | ${ }^{2}$ | $\bigcirc$ | $\bigcirc$ | Sti.000 |  | ${ }^{\text {ory }}$ | Catiliss |
| ${ }_{192}$ | ${ }_{8791789}$ | 88/2/2019 | Thusday | ${ }^{\text {224a M }}$ | Motorized venicice | No | Left Tum | 0 |  | 0 |  | 2 | 0 | 0 | \$30,000 |  | bry | FAlle To Yell Rlght of way |
| ${ }_{1}^{193}$ | ${ }^{899777^{85}}$ | 8/112019 | Sunday | ${ }_{5}^{5368 \mathrm{PM}}$ | Motorized venicice | No | Sideswipe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83,00 | Daplig |  | IMPRoopre lane chance |
| ${ }_{194}^{195}$ | ${ }_{\substack{89717955 \\ 8971992}}$ | 8/2172019 | Wenensesty | ${ }_{20.588 \mathrm{AM}}$ | Mototized veneicice | $\stackrel{\text { No }}{\text { No }}$ |  | 0 |  |  |  |  |  |  | ${ }_{\substack{32000}}^{54000}$ | Dexighe | Wer | Cartiss orvine |
| 196 | 87918037 | 8/26/2019 | Monday | 6.04 PM | Motorized venicle | No | Let Tum | 0 | 3 | $\bigcirc$ | 3 | 0 | 0 | 0 | S16,000 | Daylight | bry | FAlLE TO Y VED RIGHT Of WAY |
| ${ }_{198}^{199}$ |  |  | Tuestay | ${ }_{5}^{1.43 P 9}$ | Motoreav encice | $\stackrel{\text { No }}{\text { No }}$ | $\stackrel{\text { Leftum }}{\text { Rear fnd }}$ | $\bigcirc$ | $\stackrel{1}{0}$ |  |  | ? |  | 0 | Stition | Dayligh | ${ }_{\text {ory }}^{\text {Oy }}$ |  |
| 199 | 87918060 | 8/2882019 | Wedenestay | ${ }_{7} 7.58 \mathrm{PM}$ | Motorized venicie | No | Angle | 0 | 1 | 0 | 0 | 1 | 0 | 0 | ${ }^{5} 5$. | Dake Lighted | ${ }_{\text {or }}$ |  |
| ${ }^{200}$ |  | 910102019 | Tuestay | 10.29 AM | Motorzed venicle | No | Rear fed |  | 0 | 0 |  |  |  |  | ${ }^{5000}$ | Deplight | or | Careless drving |
| ${ }_{202}^{201}$ | ${ }_{87979838}$ | 9/212019 | Soturay | ${ }_{1}^{1.555 \mathrm{PM}}$ | Motorized venidice | ${ }_{\text {No }}^{\text {No }}$ |  | 0 | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | S2200 <br> 51500 | $\frac{\text { Dalight }}{\text { Daxight }}$ | $\stackrel{\text { or }}{\text { Or }}$ | Cartess onvic |
| ${ }_{203}^{203}$ | 87918406 | 9/262019 | Thussay | ${ }_{11333 \mathrm{AM}}$ | Motorized venide | No | Sideswipe | 0 | 0 | 0 |  |  |  | 0 | ${ }^{53,400}$ | Davight | Dry | MPROOPER LANE C CAM |
| $\underset{\substack{204 \\ 205}}{2}$ | ${ }^{87918431}$ | 9/8820019 | Statray | ${ }^{6.42} \times 2 \mathrm{Mm}$ | Motorized venicle | No | Rear fnd | 0 | 2 | 1 |  |  |  | 0 | S10,000 |  | ory | Cariess brvinc |
| 205 <br> 206 <br> 2 | ${ }_{\text {8 }}^{8797185657}$ | (10972099 | Wenessay | ${ }^{\text {a }}$ | Motorzed enice | $\stackrel{\text { No }}{\text { No }}$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ! | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ¢ |  | ${ }_{\text {dy }}^{\text {Wet }}$ |  |
| $\underset{208}{208}$ | ${ }^{87918809}$ | 10/292019 | Tuestay | ${ }^{3.117 \mathrm{PM}}$ | Mosotized venicle | ${ }^{\text {No }}$ | Rear fred | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | ${ }_{83,500}$ | Daylight | Dr | Careisss diving |
|  |  | 11/192019 |  | ${ }_{7}^{7.554 \mathrm{Mm}}$ | Moorized venidice |  | Rear fnd | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | ${ }_{5} 52000$ |  |  |  |
| 210 | 87919060 | 11/202019 | Wedenestay | 1.552 AM | Motorize venicle | No | Rear End | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \$1.550 | Daxight | Dr | Careless divnc |
| ${ }_{2211}^{212}$ | 899006 |  | Wenesesay |  | Mootreavenence | Ves | Leftum |  |  |  |  |  |  |  |  | Daplight | br | FAlLED To \elel Righ of War |
| ${ }_{213}^{213}$ | ${ }_{8}^{89919178}$ | ${ }^{1 / 1 / 2920019}$ | ${ }_{\text {Tlustay }}$ Frider |  | Moorreavenice | $\stackrel{\text { No }}{\text { No }}$ | Stes | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ¢ | Dexigh | ${ }^{\mathrm{O}} \mathrm{y}$ |  |
| ${ }_{2}^{214}$ | ${ }^{87999214}$ | $122 / 22019$ | Monday | ${ }^{5.44 P M}$ | Motorized venicle | No | Rear fod | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | ${ }^{58,50}$ | Daak- Lighted | ory | Careless drvinc |
| ${ }_{216}^{216}$ | ${ }_{8}^{879193965}$ | ${ }^{12 / 2 / 32019}$ |  | ${ }_{8}^{4} 820 \mathrm{AM}$ | Motorized venicice | No | Sideswipe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ${ }_{5400}$ |  |  | Impooper Tuen |
|  | 88698893 | 121929019 | Thussay | ${ }_{5.417 \mathrm{PM}}$ | Moiorized venice | No | Rear End | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | s1,750 | Dark- Lighted | Dr | Careless divnc |
| $\stackrel{219}{ }$ | ${ }^{868999012}$ | I/1/12020 | Soturay | $\stackrel{120101 \mathrm{M}}{1}$ | Motorized venicice | ${ }_{\text {No }}$ | Rear Rd | 0 | 1 | 0 | 0 | 1 | 0 | 0 | S1,000 | Dark Liothed | - ${ }^{\text {or }}$ | Capeliss brvinc |
|  | 88699190 | 1/1662020 | Thussay | 1.01 PM | Motorized venicle | No | Rear nd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \$1,50 |  | Dr | Careless diving |
| ${ }_{222}^{222}$ | ${ }_{\text {cki }}^{\text {86999995 }}$ |  |  |  | Motorizd venicle | $\xrightarrow{\text { No }}$ | ${ }_{\text {Anden }}^{\text {Offle }}$ | $\bigcirc$ | $\stackrel{1}{1}$ | 0 | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | ¢ |  | $\xrightarrow{\text { Dry }}$ | Imalle |
| $\underset{\substack{223 \\ 224 \\ \hline}}{ }$ | ${ }^{86699369}$ | $21 / 12020$ | Saturay | 12.22 PM | Motorized venichice | No | Reare nd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ${ }^{535000}$ | Daylight | ${ }^{\text {or }}$ | Careilss devinc |
| ${ }_{225}^{225}$ | ${ }_{\text {88899528 }}$ | ${ }^{2} 171422020$ | Wenirsay |  | Motorized venicice | ${ }_{\text {No }}$ | Lethum | 0 | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\stackrel{0}{0}$ | ${ }_{\substack{\text { S20,00 } \\ \text { Si0.000 }}}$ | ${ }_{\text {Daple }}^{\substack{\text { Daplight }}}$ | ${ }_{\text {Ory }}^{\text {Or }}$ |  |
| ${ }^{226}$ | 8869979 | 3/5/2020 | Thusday | ${ }^{435 \mathrm{PM}}$ | Motoried venicice | No | Angle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83,500 | Daylight | Dr | EGARDED T TAAFIC SIGNAL |
| ${ }^{227}$ | 86998\% | ${ }^{3} 9722020$ | Monay | ${ }^{6.37 \mathrm{PM}}$ | Motorzed venicle | No | Reart tnd | 0 | 0 | 0 |  |  |  |  | S2,500 |  | or | SSbrivi |
| ${ }_{228}^{228}$ | ${ }_{\text {86969924 }}$ |  | $\xrightarrow[\substack{\text { frinay } \\ \text { Findy }}]{\text { ent }}$ |  |  | ${ }_{\text {No }}^{\text {No }}$ | ${ }_{\text {Rear find }}$ | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\stackrel{0}{0}$ |  |  | $\frac{\mathrm{Dr}}{\mathrm{Or}}$ |  |
| $\underset{\substack{230 \\ 231}}{ }$ | 88700016 | $4 / 1512020$ | Wedenesday | ${ }_{8} 8.29 \mathrm{PM}$ | Motorized venicle | No | Rear frd | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | $\bigcirc$ | S1.500 | Daak- Lighted | Dry | Cariless deving |
| ${ }_{\text {232 }}^{231}$ |  |  |  | ${ }^{\text {a }}$ | Motorized venenicice | ${ }_{\text {No }}$ | ${ }_{\text {Rear }}$ End | $\bigcirc$ | 0 | 0 | 0 | 0 |  |  |  | den | ${ }_{\text {Wer }}^{\text {Wer }}$ | ALEES DRVNMG |
| ${ }_{23}^{238}$ | ${ }^{88700688}$ | 71242020 | friday | ${ }^{8330 \mathrm{AM}}$ | Motorized venide | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5250 | Doxiligh | Dr | Careless orving |
| ${ }^{234}$ | ${ }_{\text {888007 }}^{880755}$ | ${ }^{\text {/ }}$ | $\xrightarrow{\text { frinday }}$ | ${ }_{5}^{13.349 \mathrm{AM}}$ | Motorized venenicice | ${ }_{\text {No }}^{\text {No }}$ |  | $\bigcirc$ | 1 | $\bigcirc$ | $\bigcirc$ | $\stackrel{1}{1}$ | $\bigcirc$ | $\bigcirc$ | ¢ | $\frac{\text { Dalight }}{\text { Daxight }}$ | ${ }_{\text {or }}^{\text {Or }}$ |  |
| ${ }^{236}$ | 88700768 | 81/2020 | Staurday | 4.19 PM | Motorized venicle | No | Rear frd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \$2,500 | Davilght | wet | CaRELSSS DRVMG |
|  | ${ }^{88700912}$ | ${ }^{8200202020}$ | Thussay | ${ }_{3}^{3.568 \mathrm{PM}}$ | Motorized venicle | No | Rear fend | 0 | 0 | 0 | 0 | 0 |  |  | S4000 | Dapligh | Wet | Cariess brvinc |
| 239 <br>  <br> 230 <br> 240 | ${ }_{\text {8, }}^{\text {887009 }}$ |  | Thussay | ${ }_{12,59}^{12.29 \mathrm{Pm}}$ | Motorized veneicice | Nos | $\underbrace{\substack{\text { Rear } \\ \text { Rend }}}_{\text {kear }}$ | 0 | 0 | 0 |  | 0 | 0 | 0 | ¢ |  | ${ }_{\text {on }}^{\text {Dr }}$ | CaReliss invinc |
| ${ }_{241}^{240}$ | ${ }^{8870097}$ | ${ }^{\text {8/9292020 }}$ | Statray | ${ }^{6.07 \mathrm{PM}}$ | $\frac{\text { Motorized venicle }}{\text { Morores venicle }}$ | No | Unkrown | 0 | 0 | $\bigcirc$ | $\bigcirc$ | 0 | 0 | 0 | ${ }_{52000}$ | Dayligh | or | IMPROPERE LINE CHANGE |
| ${ }_{24}^{24}$ | 88801024 | 9 94/2020 | fridar | ${ }_{9.2129 \mathrm{M}}^{4}$ | Motorized venicice | No | Left Tum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Sitiou0 | Dake Lighted | or |  |
| ${ }^{243}$ | ${ }^{88701018}$ | 94/42020 | Friday | ${ }^{2349 \mathrm{PM}}$ | Motorized venicle | No | Sideswipe | 0 | 0 | 0 | 0 |  |  |  | ${ }_{52500}$ | Daplight | Dr | Ss sivNT |
| ${ }_{245}^{244}$ | ${ }_{\text {8880905 }}$ | $\frac{997 / 2020}{9 / 1 / 2020}$ | $\frac{\text { Monday }}{\text { Monday }}$ | ${ }_{8.599 \mathrm{M}}^{2.9 \mathrm{Mm}}$ | Motoriza vencice | $\stackrel{\text { No }}{\text { No }}$ |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ | Stinion |  | $\frac{\mathrm{Dr}}{\mathrm{O}}$ | IMPROPEPSTINN |
| ${ }_{2}^{246}$ | 88801243 | 973012020 | Wedensasay | ${ }_{3} 3.47 \mathrm{PM}$ | Motorized venicice | No | Rear End | 0 | 0 | 0 |  |  |  |  | 56.000 | Dayligh | Wet | Careitss inving |
| ${ }_{248}^{247}$ | 88801410 | 10/991020 | Monday | ${ }^{7} .55 \mathrm{Pm}$ | Motorize v venice | No | Left Tum | 0 | 1 | 0 | 0 |  | 0 | 0 | 52000 | Dark-Lighted | Wet | FAlLE TO Y VEl RIGHT Of WAV |
| ${ }_{249}^{248}$ | ${ }_{\substack{8870466 \\ 887058}}$ | 107262020 | Monday | (12.2AM | Mototred venicle | No | Rear nd | $\bigcirc$ | $\stackrel{1}{1}$ | $\bigcirc$ | $\bigcirc$ | 1 | $\bigcirc$ | $\bigcirc$ | St.800 | Dexight | ${ }_{0} \mathrm{or}^{\text {y }}$ |  |
| 250 <br> 251 <br> 20 | 88701580 | 11/102020 | Tuessay | 10.41 AM | Motorized veinice | No | Rear End | 0 | 0 |  |  |  |  |  |  |  |  | Careliss brvnc |
| $\underset{ }{251}$ | ${ }^{88701603}$ | ${ }^{11 / 1 / 32020}$ | Efiday | ${ }^{9.454 \mathrm{AM}}$ | Mototized venicle | No | Left Tum | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | S6000 | Daylight | Dr | FAlle T To Yelo Righ of War |
| ( 253 |  | 11/1/62020 | Sonay |  | Mootrear encice | ${ }_{\text {No }}$ | Rear hnd | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | S2500 <br> S1,00 |  | ory |  |
| 254 <br> 255 <br> 25 | ${ }^{88801653}$ | 111/8272020 | Weenestay | 12.00 PM | Motorized venicice | No | Left Tum | 0 | 0 | 0 |  | 0 | 0 | 0 | 57,00 | Daylight | Dr | FAlleo To VEl R RGGH Of WAY |
|  | ${ }_{\text {gigan230 }}$ | - $12 / 262020$ | Sonay | \% 5.5 M | Moirreal ince | ${ }_{\text {No }}^{\text {No }}$ |  | 0 | 2 | 0 | - | ${ }^{2}$ | 0 | 0 | S6000 <br> Siomo | Dark- Lighted | ${ }_{\text {Dr }}$ | Cariess ovinc |
|  | 8992250 | 1220292020 | ${ }_{\text {Stesesay }}$ | ${ }_{7}^{\text {P}} \mathbf{2} 27 \mathrm{PM}$ | Motorized Venidice | No | Rear End | 0 | 0 | 0 | 0 | 0 | 0 | 0 | S1.000 | Park-Lighted | ory | Careliss drinc |
|  | ${ }^{899933665}$ | ${ }^{199202021}$ | Statray |  | Motorized venice | No | Sidesme | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | 52000 <br> $\$ 800$ | Deplight | Dr | IMPROPR Pr TuN |
|  | ${ }^{\text {g9992528 }}$ | 1/2620221 | ${ }_{\text {Tuesay }}$ |  | Motorized venicle | ${ }^{\text {No }}$ | Rear hnd |  |  |  |  |  |  |  | \$1,500 | Daylo | ${ }_{\text {ory }}$ | Careless drving |
| $\underset{261}{262}$ | ${ }^{89992357}$ | 12772021 | Weenessay | 5.52 PM | Motorized venicice | No | Rear fnd | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \$300 | Dusk | Dr | Cartiss divng |
| ${ }_{263}^{262}$ |  | 2712021 | Sunday |  | Motorized venicice | ${ }_{\text {No }}^{\text {No }}$ | ${ }_{\substack{\text { Reared } \\ \text { Head }}}^{\text {Rn }}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ${ }_{\text {sit }}$ |  | Wet |  |



| CRASH DEESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total crashis | ${ }_{\text {faral }}$ |  | Total wurkis | Incapacrating |  | Possileif nury | NON-TRAFFIC | FATALITY WITHIN 30 DAYS | PROPERTY DAMAGE CRASHES | PEDESTRIAN/PED | MOTORIZED | daviluhr |  | DARK-NOT | Dusk | dawn | WET | $\begin{gathered} \hline \text { ITIONS } \\ \hline \text { DRY } \end{gathered}$ |  |
| ${ }_{\substack{287 \\ 1008}}^{\text {10, }}$ | $\stackrel{\circ}{0 \%}$ | ${ }_{\substack{81 \\ 288}}^{\text {82 }}$ | ${ }_{\substack{125 \\ 448}}^{\text {der }}$ | ${ }_{18}^{3}$ | ${ }_{98}^{25}$ | ${ }_{37}^{97}$ | \% | \% | ${ }_{7}^{206}$ | ${ }_{5}^{58}$ | $\underset{\substack{282 \\ 988}}{\text { a }}$ | $\frac{221}{77.0 \%}$ | ${ }_{\text {522\% }}^{18.12 \%}$ |  | ${ }_{\text {3,38\% }}^{11}$ | ${ }_{0.20 \%}^{0.08}$ |  |  |  |
| CRASH TVPE |  |  |  |  |  |  |  |  |  | CONTRIBUTING CAUSE |  |  |  |  |  |  |  |  |  |
| anole | left tuen | Right tuen | rear eno | sidswipe | HEad on | peossran | Biecsle | rav offroad | AL OTHER | CARELESS DRIVING | FAILED TO YIELD RIGHT OF WAY | IMPROPER BACKING | IMPROPER LANE CHANGE | Impooper tuen | DISREGARDED <br> TRAFFIC SIGNAL | EXCEEDED STATED SAFE SPEED LIMIT | $\begin{gathered} \text { DISREGARDED STOP } \\ \text { SIGN } \end{gathered}$ | al other |  |
| $\stackrel{13}{4.53 \%}$ |  | $\frac{7}{2.488}$ | $\frac{162}{56.458}$ | ${ }_{\substack{28 \\ 9.78 \%}}^{28}$ | $\stackrel{3}{1.05 \%}$ | $\stackrel{3}{\text { 1.05\% }}$ | $\stackrel{2}{0.70 \%}$ |  | $\stackrel{3}{1.058}$ | ${ }_{\substack{165 \\ 57.49 \%}}$ | ${ }_{\text {26.3\% }}$ | ${ }_{0}^{0.00 \%}$ | ${ }_{8}^{24.36 \%}$ | $\stackrel{5}{1.18 \%}$ | ${ }_{1.3}^{1.3 \%}$ | ${ }_{0.35 \%}^{1}$ | ${ }_{3.148}^{3.4}$ | ${ }_{\text {, }}^{1.39 \%}$ |  |

## Appendix B - Field Photographs



Looking east into the intersection


Looking east into the intersection


Looking east into the intersection


Looking into the intersection from the southwest corner


Looking east from the southeast quadrant


Looking north across the west leg


Looking east across the south leg


Looking west across the south leg

Move People \& Goods | Create Jobs | Strengthen Communities


Looking north across the east leg


Looking south across the east leg


Looking west across the north leg


Looking west into the intersection


Looking east from the intersection


Looking east into the intersection


Looking south into the intersection


Looking southeast from the northwest quadrant

## Appendix C - Conceptual Improvement Diagram



## Appendix D - Construction Cost Estimate

ENGINEER'S ESTIMATE - Royal Palm Blvd. at Riverside Dr.

| PAY ITEM NUMBER | ITEM DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 01011 | MOBILIZATION | LS | 1 | 10\% | See Below |
| 01021 | MAINTENANCE OF TRAFFIC | LS | 1 | 10\% | See Below |
| 0104103 | SEDIMENT BARRIER | LF | 715 | \$1.12 | \$800.80 |
| 010418 | INLET PROTECTION SYSTEM | EA | 8 | \$111.56 | \$892.48 |
| 011011 | CLEARING \& GRUBBING | AC | 1.0 | \$8,675.58 | \$9,105.77 |
| 0110410 | REMOVAL OF EXISTING CONCRETE | SY | 0.9 | \$16.52 | \$14.68 |
| 0520541 | TRAFFIC SEPARATOR CONCRETE- TYPE IV, 4' WIDE | LF | 194 | \$53.73 | \$10,423.62 |
| 0327706 | MILLING EXISTING ASPHALT PAVEMENT, $11 / 2$ " AVG DEPTH | SY | 835.00 | \$2.15 | \$1,795.25 |
| 0337783 | ASPHALT CONCRETE FRICTION COURSE,TRAFFIC C, FC-12.5, PG 76-22 | TN | 68.9 | \$112.25 | \$7,732.62 |
| 05222 | CONCRETE SIDEWALK AND DRIVEWAYS, $6^{\prime \prime}$ THICK | SY | 170 | \$51.77 | \$8,783.64 |
| 05272 | DETECTABLE WARNINGS | SF | 24 | \$27.93 | \$670.32 |
| 0520110 | CONCRETE CURB \& GUTTER, TYPE F | LF | 115 | \$22.84 | \$2,626.60 |
| 070613 | RAISED PAVEMENT MARKER, TYPE B | EA | 31 | \$3.78 | \$117.18 |
| 071114125 | THERMOPLASTIC, PREFORMED, WHITE, SOLID, 24" FOR CROSSWALK | LF | 597 | \$14.66 | \$8,752.02 |
| 071111124 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONALS AND CHEVRONS | LF | 382 | \$2.62 | \$1,000.84 |
| 071116101 | THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6" | GM | 0.171 | \$3,906.86 | \$668.90 |
| 071114170 | THERMOPLASTIC, PREFORMED, WHITE, ARROW | EA | 3 | \$229.80 | \$689.40 |
| 0700111 | SINGLE POST SIGN, F\&I GROUND MOUNT, UP TO 12 SF | AS | 8 | \$353.32 | \$2,826.56 |
| 0700212 | MULTI- POST SIGN, F\&I GROUND MOUNT, 12-20 SF | AS | 4 | \$3,584.70 | \$14,338.80 |
| 063271 | SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH \& INSTALL | PI | 1 | \$4,549.31 | \$4,549.31 |
| 0650114 | VEHICULAR TRAFFIC SIGNAL, FURNISH \& INSTALL ALUMINUM, 3 SECTION, 1 WAY | AS | 8 | \$1,022.00 | \$8,176.00 |
| 0650116 | VEHICULAR TRAFFIC SIGNAL, FURNISH \& INSTALL ALUMINUM, 4 SECTION, 1 WAY | AS | 4 | \$1,363.76 | \$5,455.04 |
| 0671240 | TRAFFIC CONTROLLER, MODIFY | EA | 1 | \$1,892.00 | \$1,892.00 |
| 999-25 | INITIAL CONTINGENCY AMOUNT, DO NOT BID | LS |  | 5\% | See Below |
|  | CONTINGENCY (PROJECT UNKNOWNS) | LS |  | 15\% | See Below |
| (101-1) MOB (MOBILIZATION) |  |  |  | SUBTOTAL: | \$91,311.85 |
|  |  |  |  | 10\% | \$9,131.18 |
|  |  |  |  | SUBTOTAL: | \$100,443.03 |
| (102-1) MOT (MAINTENANCE OF TRAFFIC) |  |  |  | 10\% | \$10,044.30 |
|  |  |  |  | SUBTOTAL: | \$110,487.33 |
| PU (PROJECT UNKNOWNS) |  |  |  | 15\% | \$16,573.10 |
|  |  |  |  | SUBTOTAL: | \$127,060.43 |
| (999-25) INITIAL CONTINGENCY (DO NOT BID) |  |  |  | 5\% | \$6,353.02 |
|  |  |  |  | SUBTOTAL: | \$133,413.45 |
| RIGHT-OF-WAY |  |  |  |  | \$0.00 |
| PROJECT TOTAL: |  |  |  |  | \$133,413.45 |

12 Month Area 12 Average Unit Costs 12/1/2020-11/30/2021

## Appendix E - Benefit Cost Analysis

Florida's Transportation Engineers
Rev. 02/2014

## Benefit-Cost Analysis

District: Four
County: 86 - Broward
Date Prepared: 01/18/22
Location: Royal Palm Boulevard at Riverside Drive
Section:
Beg. Milepost :
End Milepost :
Rdway Type: 4-5 Lanes Suburban Divided

Control Element: Other (describe in box below)

Add 3-inch yellow retroreflective sheeting to signal backplates. Convert 5-section signal heads to 4-section FYA. Add advanced street name signs on all approaches.

| Type | ANNUAL COST OF IMPROVEMENTS |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cost |  | Capital <br> Service Recovery |  |  |  |
|  |  |  |  |
|  |  |  | Service <br> Life | Factor |  |  |
| ROW |  |  |  |  |  | 100 | 0.0408 | \$ | - |
| P.E.C.E.I. | \$ | 40,024.04 | 15 | 0.0899 | \$ | 3,598.16 |
| Structure |  |  | 75 | 0.0425 | \$ | - |
| Roadway |  | \$133,413.45 | 20 | 0.0736 | \$ | 9,819.23 |
| Drainage |  |  | 20 | 0.0736 | \$ | - |
| Signal |  |  | 20 | 0.0736 | \$ | - |
| Other |  |  | 20 | 0.0736 | \$ | - |
| Sub-Total | \$ | 173,437.49 |  |  | \$ | 13,417.39 |
|  |  |  |  | nual Cost $=$ | \$ | 13,417.39 |


| Total number of crashes $=$ | 231 |
| ---: | :---: |
| \# of correctable crashes, PC $=$ | 231 |
| \# of years of crash data, YD $=$ | 5 |
| PC/YD $=$ | 46.20 |
| Crash reduction factor, CRF $=$ | $21.88 \%$ |
| CRF $\times(\mathrm{PC} / \mathrm{YD})=$ | 10.11 |
| Cost per crash, CPC $=$ | $\$ 225,315.00$ |
| Benefit $=$ | $\$ 2,277,635$ |

Primary crash reduction factor (\%): 15
Add 3-inch yellow retroreflective sheeting to signal backplates

Additional crash reduction factor: 6.6 Change from 5-section "doghouse" protected/permissive

Additional crash reduction factor: 1.6
Advance street name signs

## BENEFIT/COST RATIO

$$
\frac{\text { Benefit }}{\text { Cost }}=\frac{\$ 2,277,635.18}{\$ 13,417.39}=\mathbf{1 6 9 . 7 5}
$$

Countermeasure: Add 3-inch yellow retroreflective sheeting to signal backplates. Applies to all crash types, all severities.
Countermeasure: Change from 5-section "doghouse" protected/permissive left turn to flashing yellow arrow protected/permissive left turn. Applies to all crash types, all severities. Countermeasure: Advance street name signs. Applies to all crash types, all severities.

## Appendix F - Net Present Value

## Net Present Value (NPV)

| Project Name |  | Royal Palm Blvd at Riverside Dr Safety Study |  |
| :---: | :---: | :---: | :---: |
| Project Category |  | Signalized Intersection |  |
| Current Year |  | 2022 |  |
| Project Completion |  | 2024 |  |
| Project Life |  | 20 |  |
| Project Ends |  | 2042 |  |
| Discount Rate |  | 0.04 |  |
| Cost / Benefits |  |  |  |
| Year \# | Calendar Year | Estimated Cost | Estimated Benefits |
| 0 | 2022 | \$173,437 | \$0 |
| 1 | 2023 | \$0 | \$2,277,635 |
| 2 | 2024 | \$0 | \$2,277,635 |
| 3 | 2025 | \$0 | \$2,277,635 |
| 4 | 2026 | \$0 | \$2,277,635 |
| 5 | 2027 | \$0 | \$2,277,635 |
| 6 | 2028 | \$0 | \$2,277,635 |
| 7 | 2029 | \$0 | \$2,277,635 |
| 8 | 2030 | \$0 | \$2,277,635 |
| 9 | 2031 | \$0 | \$2,277,635 |
| 10 | 2032 | \$0 | \$2,277,635 |
| 11 | 2033 | \$0 | \$2,277,635 |
| 12 | 2034 | \$0 | \$2,277,635 |
| 13 | 2035 | \$0 | \$2,277,635 |
| 14 | 2036 | \$0 | \$2,277,635 |
| 15 | 2037 | \$0 | \$2,277,635 |
| 16 | 2038 | \$0 | \$2,277,635 |
| 17 | 2039 | \$0 | \$2,277,635 |
| 18 | 2040 | \$0 | \$2,277,635 |
| 19 | 2041 | \$0 | \$2,277,635 |
| 20 | 2042 | \$0 | \$2,277,635 |


| Project Description |  |  |
| :---: | :---: | :---: |
| Add 3-inch yellow retroreflective sheeting to signal backplates. Convert 5 -section signal heads to 4 -section FYA. Add advanced street name signs on all approaches. |  |  |
| NPV |  |  |
| \$30,780,368 |  |  |
| Calculation |  |  |
| Discount Factor | Discount Cost | Discounted Benefits |
| 1.000 | (\$173,437) | \$0 |
| 0.962 | \$0 | \$2,190,034 |
| 0.925 | \$0 | \$2,105,802 |
| 0.889 | \$0 | \$2,024,809 |
| 0.855 | \$0 | \$1,946,932 |
| 0.822 | \$0 | \$1,872,050 |
| 0.790 | \$0 | \$1,800,048 |
| 0.760 | \$0 | \$1,730,816 |
| 0.731 | \$0 | \$1,664,246 |
| 0.703 | \$0 | \$1,600,236 |
| 0.676 | \$0 | \$1,538,689 |
| 0.650 | \$0 | \$1,479,508 |
| 0.625 | \$0 | \$1,422,604 |
| 0.601 | \$0 | \$1,367,889 |
| 0.577 | \$0 | \$1,315,278 |
| 0.555 | \$0 | \$1,264,690 |
| 0.534 | \$0 | \$1,216,048 |
| 0.513 | \$0 | \$1,169,277 |
| 0.494 | \$0 | \$1,124,305 |
| 0.475 | \$0 | \$1,081,062 |
| 0.456 | \$0 | \$1,039,483 |

# Appendix G - Candidate Project Feasibility Checklist for TSM\&O/Safety Program Funds 

## Candidate Project Feasibility Checklist for TSM\＆O／Safety Program Funds

The project requires additional feasibility review if＂Yes＂is checked for questions 1，2，3，5，6，or 7.
1．Will the proposed project need right of way？Yes
区 NoUnknown

Source（s）to determine existing right of way：Field inspection of existing typical section elements（i．e．， back of sidewalk）．Review of Broward County property appraiser GIS of property lines．

2．Will the proposed project have utility impacts or require utility adjustments？Yes
区 NoUnknown

Source（s）to determine existing utilities：$\underline{\text { Review of field conditions of above ground utilities，manhole }}$ covers，valves，and other markers．The majority of work will done within the limits of the existing roadway will not include underground work．

3．Does the proposed project modify existing access to residences or businesses？Yes
区 NoUnknown

3a．If answered＂Yes＂to the above，please describe the process needed to gain approval to make the proposed access changes：Walgreen＇s in the southeast quadrant has a right－in／right－out driveway on Royal Palm Boulevard．The existing signing and pavement markings restrict left－in and left－out movements．However，these movements are not restricted by physical features．A median separator is proposed to physically restrict the movements．This should not be considered a change to access since the separator is only reinforcing the current access restrictions．

4．Can the project be designed to meet all applicable design criteria and standards？
$\boxtimes$ YesNoUnknown

4a．If answered＂No＂to the above，can design exceptions or variations reasonably be obtained？YesNo
Unknown

Please provide a preliminary list of exceptions and／or variations： $\qquad$

5．Does the project impact existing structures？
区 YesNo

5a．If answered＂Yes＂to the above，has a preliminary structural review been conducted to determine the acceptability of the impact and all costs been accounted for in the estimate？Yes
® No

6．Does the project affect environmental or cultural resources？Yes
区 NoUnknown
7. Are any other agency permits required?® NoUnknown
8. Does the project require a project development and environment (PD\&E) study?Yes $\boxtimes$ NoUnknown

8a. If answered "Yes" to the above, what level of PD\&E is anticipated?
$\square$ Type 1 Categorical Exclusion $\square$Type 2 Categorical Exclusion (see FDOT Type 1 CE Checklist)Environmental Assessment or Impact Statement
9. Is the agency, or agencies for intersections, with jurisdiction over the facility in support of the project?YesNo凹 Unknown

# Broward Metropolitan Planning Organization 

Move People \& Goods I Create Jobs I Strengthen Communities

Broward Metropolitan Planning Organization<br>Trade Centre South 100 West Cypress Creek Road, Suite 650, $6^{\text {th }}$ Floor Fort Lauderdale, FL 33309

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For more information on activities and projects of the Broward MPO, please visit: BrowardMPO.org

For complaints, questions or concerns about civil rights or nondiscrimination; or for special requests under the Americans with Disabilities Act, please contact Erica Lychak, For more information, please contact:

Title VI Coordinator at (954) 876-0058 or lychake@browardmpo.org.

