KENWOOD NEIGHBORHOOD TRAFFIC STUDY

FORT WALTON BEACH, FL

Prepared for:

City of Fort Walton Beach

Prepared by:

Kimley-Horn and Associates, Inc.

VINCENT E. SPAHR LICENSE No. 88747 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS IS TO CERTIFY THAT THE ENCLOSED ENGINEERING CALCULATIONS WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

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1.0 INTRODUCTION

Kimley-Horn and Associates, Inc. was retained by the City of Fort Walton Beach through contract with Jenkins Engineering to conduct a Traffic Study in the Kenwood Neighborhood in Fort Walton Beach, Florida. Aspects of the study include a literature review, public involvement, data collection, and traffic analysis.

2.0 PURPOSE AND NEED

The Kenwood Neighborhood is situated between State Road (SR) 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard) in Fort Walton Beach. By virtue of the location of population centers and employment centers in the vicinity, roadways which are predominantly intended to serve residents of the Kenwood Neighborhood are utilized as a cut-through by commuters traveling north and south of the neighborhood. Residents of the Kenwood Neighborhood have long expressed concerns with cut-through volumes and speeds, especially along Country Club Avenue NE, Fairway Avenue NE, and Camborne Avenue NE.

This Traffic Study has been completed to investigate those concerns and to identify potential improvement alternatives that may reduce the cut-through traffic volumes and speeds. The Traffic Study includes a significant data collection effort that informs the alternatives recommended for consideration by the City of Fort Walton Beach. Various low-cost, medium-cost, and high-cost improvement alternatives are recommended, so that the City may choose from a menu of improvements, some of which may be more readily funded than others.

3.0 LITERATURE REVIEW

A variety of studies have been completed over the last 12 years to evaluate traffic conditions, speeds, and traffic control within the Kenwood Neighborhood. The City of Fort Walton Beach collected and provided these studies for preliminary review, so that the Kimley-Horn team could understand problems that had been previously investigated and solutions that had been previously considered and/or implemented. **Figure 1** summarizes the timeline of the studies and **Figure 2** illustrates the study locations. Copies of the studies, petitions, and literature are included in **Appendix A**.

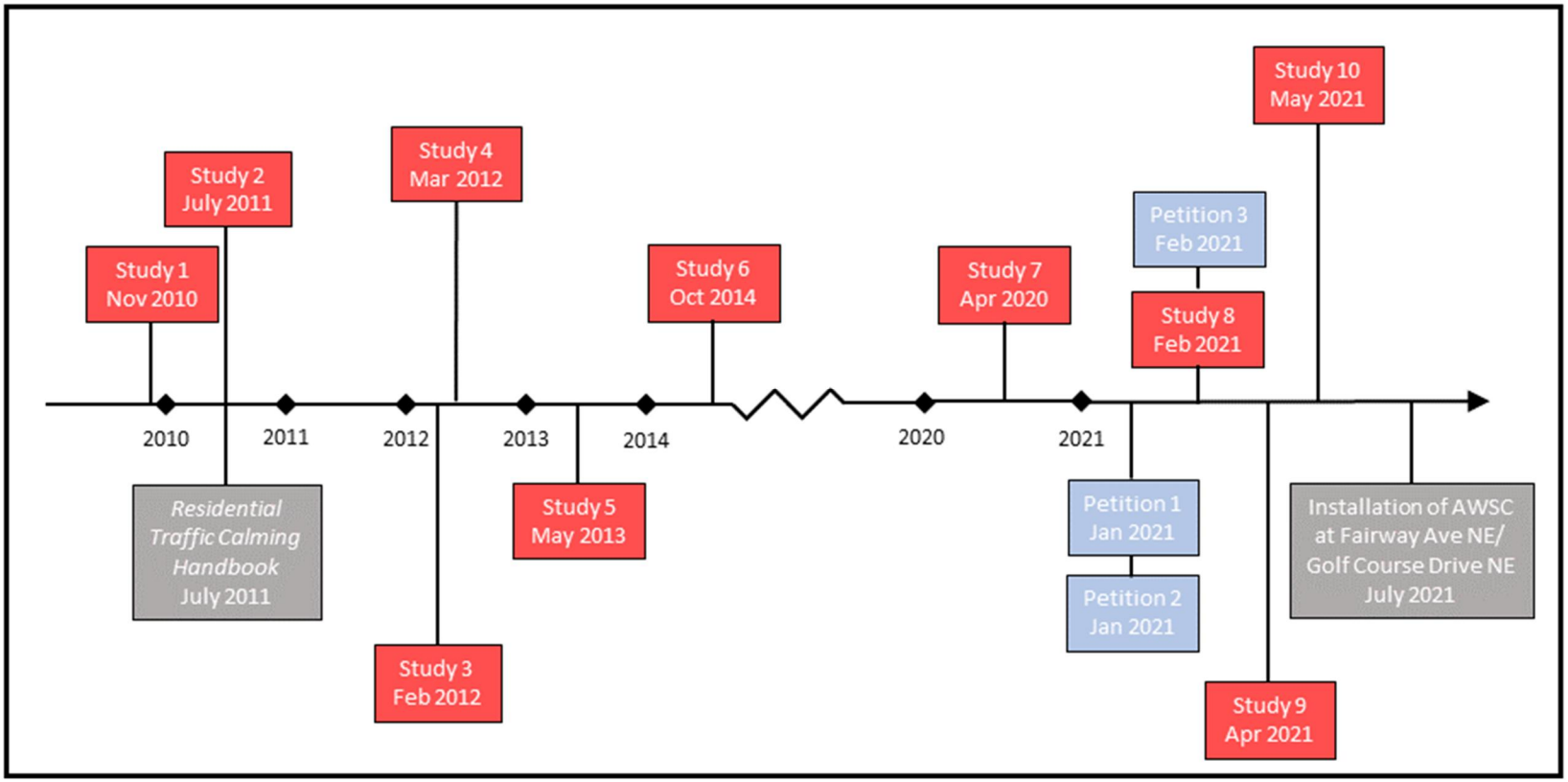

Figure 1: Kenwood Neighborhood, Literature Review Timeline

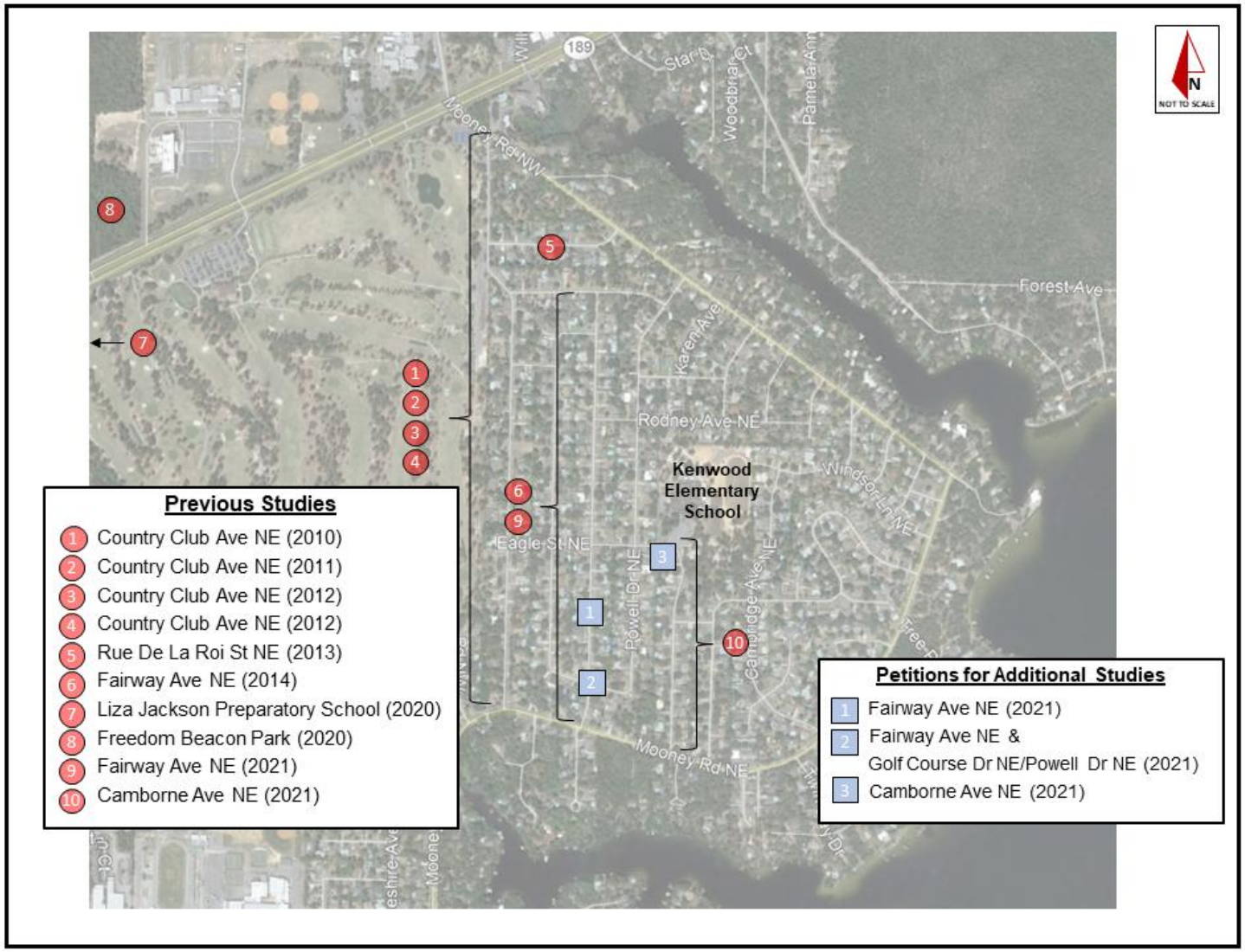

Figure 2: Kenwood Neighborhood, Study and Petition Locations

3.1 STUDY 1: COUNTRY CLUB AVENUE NE TRAFFIC STUDY (NOVEMBER 2010)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a traffic study along Country Club Avenue NE between August 2, 2010 and September 1, 2010. Four (4) traffic counters were installed at various locations along Country Club Avenue NE and Mooney Road NE to measure speed and traffic volumes. The vehicle speed data indicated average speeds ranging from 28 miles per hour (mph) to 33 mph and 85th percentile speeds ranging from 33 mph to 40 mph along Country Club Avenue NE. Daily vehicular volumes ranged from approximately 2,970 vehicles per day (vpd) to 4,600 vpd. The vehicular volume data implied that approximately 68% of traffic coming from SR 189 (Lewis Turner Boulevard) utilizes Country Club Avenue NE, and that the daily volumes along Country Club Avenue NE were well within the Level of Service (LOS) standard for a two-lane urban road.

Based on the findings of the vehicle speed data, Study 1 recommended increased speed enforcement along Country Club Avenue NE, installation of speed tables along Country Club Avenue NE, and installation of flashing school zone lights at the intersection of Country Club Avenue NE and Eagle Street NE and/or flashing warning lights prior to the three-way stops along Country Club Avenue NE at Eagle Street NE and Wedgewood Lane.

3.2 STUDY 2: FSU TRAFFIC AND SAFETY STUDY FOR COUNTRY CLUB AVENUE NE (JULY 2011)

The Florida State University (FSU) John Scott Dailey Institute of Government conducted a traffic study along Country Club Avenue NE using the data collected by the City of Fort Walton Beach Engineering and Utility Service Department. The report included a crash analysis spanning the years of 2004 through 2008 that found no significant trend in crash history within the neighborhood. Estimations of traffic split were made from turning movement counts collected from 9:00 AM to 10:00 AM while K-12 schools were in session on the intersections of Mooney Road NE and Country Club Avenue NE and the intersection of Mooney Road NE with SR 189 (Lewis Turner Boulevard).

Study 2 estimated that approximately three out of every four vehicles traveling south on Mooney Road NE from SR 189 (Lewis Turner Boulevard) turned right on Country Club Avenue NE and one out of every two vehicles heading north on Mooney Road NE towards SR 189 (Lewis Turner Boulevard) came from Country Club Avenue NE.

Based on speed and traffic patterns, Study 2 presented five alternatives with a range of costs and predicted effectiveness: installation of state route signs directing through traffic to use Mooney Road NE to access SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard), installation of radar speed feedback signs on Country Club Avenue NE, installation of “chicanes” on Country Club Avenue NE, installation of speed tables along Country Club Avenue NE, and splitting Country Club Avenue NE at Rue De La Roi Street NE. From these alternatives, Study 2 recommended the installation of chicanes as the most effective measures.

3.2.1 CITY COUNCIL MOTION TO CONDUCT A BASELINE TRAFFIC STUDY (DECEMBER 2011)

In response to the study conducted by FSU, the City Council of Fort Walton Beach recommended that additional traffic studies were needed to determine the effectiveness of closing or cutting off portions of neighborhood roads. To determine the potential impacts of diverting traffic from Country Club Avenue NE, baseline traffic conditions within the Kenwood Neighborhood were to be compared to traffic conditions with a partial closure of Country Club Avenue NE as well as a second road closure or re-routing. The document evaluates the legal, operational, and technical issues of this suggestion and provides recommendations to ensure effectiveness of the data collection.

3.3 STUDY 3: TRAFFIC STUDY RESULTS FOR SPEED CUSHION INSTALLATION ON COUNTRY CLUB AVE (FEBRUARY 2012)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a traffic study along Country Club Avenue NE pre- and post-installation of four (4) temporary speed cushions. Pre-installation volumes and speeds were collected with three (3) traffic counters at locations along Country Club Avenue NE spanning January 4, 2012 through January 12, 2012. The average vehicle speeds pre-installation ranged from 23 mph to 28 mph and the 85th percentile speeds ranged from 28 mph to 32 mph along Country Club Avenue NE. Daily vehicular volumes pre-installation ranged from approximately 1,470 vpd to 1,890 vpd. Post-installation volumes and speeds were collected with three (3) traffic counters at locations along Country Club Avenue NE spanning January 27, 2012 through February 10, 2012. The average vehicle speeds post-installation ranged from 22 mph to 23 mph and the 85th percentile speeds ranged from 26 mph to 27 mph along Country Club Avenue NE. Daily vehicular volumes post-installation ranged from approximately 1,280 vpd to 1,710 vpd.

Based on the apparent effectiveness of the temporary speed cushions, Study 3 recommended that the City convert the four (4) temporary speed cushions to permanent speed cushions and install an additional five (5) speed cushions along Country Club Avenue NE. Study 3 further recommended the installation of flashing school zone lights with radar speed indicators at the Country Club Avenue NE and Eagle Street NE intersection as well as the installation of lane delineators with temporary curbing at the right turn from Mooney Road NE to southbound County Club Avenue NE to reduce speeds of southbound traffic.

3.4 STUDY 4: TRAFFIC STUDY RESULTS FOR ADDITIONAL MONITORING OF SPEED CUSHION INSTALLATION ON COUNTRY CLUB AVENUE NE (MARCH 2012)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a follow-up traffic study along Country Club Avenue NE regarding Study 3. The goal was to determine the lasting effects of the speed table installation along Country Club Avenue NE. Traffic volume and speed data was collected using eight (8) traffic counters: four (4) on County Club Avenue NE, two (2) on Powell Drive NE, and two (2) on Fairway Avenue NE. Data was collected between February 20, 2012 and March 16, 2012.

The average speeds along Country Club Avenue NE ranged from 19 mph to 25 mph and the 85th percentile speeds ranged from 22 mph to 28 mph. The average speeds along Powell Drive NE ranged from 23 mph to 25 mph and the 85th percentile speeds ranged from 26 mph to 28 mph. The average speeds along Fairway Avenue NE ranged from 25 mph to 26 mph and the 85th percentile speed was 30 mph in both directions. Daily vehicular volumes ranged from 1,260 vpd to 1,560 vpd along Country Club Avenue NE, 220 vpd to 230 vpd along Powell Drive NE, and 390 vpd to 430 vpd along Fairway Avenue NE. The noise levels near the installed speed tables were considered to be within the normal range of typical residential traffic noise levels. In comparison with Study 3, speed and volumes had stayed at a reduced level from pre-installation levels.

Ultimately, the findings of Study 4 reaffirmed the recommendations made in Study 3.

3.5 STUDY 5: TRAFFIC STUDY FOR RUE DE LA ROI STREET NE (MAY 2013)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a traffic study to determine if a multi-way stop-controlled intersection were warranted at the intersection of Country Club Avenue NE and Rue De La Roi Street NE. Crash data was analyzed from the January 1, 2007 to May 14, 2013; only one (1) incident had occurred on Rue de La Roi Street NE and the incident was not located at the intersection of Rue De La Roi Street NE and Country Club Avenue NE. The average speeds along Rue De La Roi Street NE ranged from 24 mph to 26 mph and the 85th percentile speeds ranged from 27 mph to 31 mph. The daily vehicular volumes ranged from 220 vpd to 230 vpd.

Study 5 did not recommend that a stop sign be placed at the intersection of Rue De La Roi Street and Country Club Avenue NE as none of the warrants for a multi-way stop-control intersection were met. Recommendations made were the removal of vegetation and a brick wall impeding the sight distance at the intersection and that any future speeding concerns should be coordinated with the City of Fort Walton Beach Police Department.

3.6 STUDY 6: TRAFFIC ENGINEERING ANALYSIS RESULTS FOR FAIRWAY AVE (OCTOBER 2014)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a traffic study along Fairway Avenue NE between October 2, 2014 and October 10, 2014. Three (3) traffic counters were installed at locations along Fairway Avenue NE to collect volume and speed data. The average speeds along Fairway Avenue NE ranged from 24 mph to 27 mph and the 85th percentile speeds ranged from 29 mph to 32 mph. The daily vehicular volumes along Fairway Avenue NE ranged from 400 vpd to 440 vpd.

Study 6 did not recommend any traffic calming measures for Fairway Avenue NE based on the observed speeds and volumes.

3.7 STUDY 7: LIZA JACKSON PREPARATORY SCHOOL TRAFFIC ANALYSIS (APRIL 2020)

STS in Tallahassee, Florida conducted a traffic analysis for the planned construction of Liza Jackson Preparatory School at the intersection of SR 189 (Lewis Turner Boulevard) and Hospital Road in Fort Walton Beach. Trip generation estimates were calculated in accordance with the Institute of Transportation Engineer's (ITE)*Trip Generation Manual*. Trips generated from the construction of the new school accounted for approximately 470 new trips in the AM peak hour and 330 new trips in the afternoon peak hour (consistent with final school bell) along SR 189 (Lewis Turner Boulevard). Approximately 80 AM peak hour trips and 82 afternoon peak hour trips are expected to travel to and from the east on SR 198 (Lewis Turner Boulevard), according to the study.

The operational analysis included in the Liza Jackson Preparatory School Traffic Analysis was limited to the intersection of SR 189 (Lewis Turner Boulevard) and Hospital Road, so the distribution of project trips was not shown outside of the immediate vicinity of the proposed school. It can be assumed that some portion of the project trips will originate from the Kenwood Neighborhood or use Kenwood Neighborhood roadways as a cut-through between SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard).

A conservative estimate assuming 5% of project traffic will access the Kenwood Neighborhood roadways would result in approximately 24 AM peak hour trips and 17 new PM peak hour trips in Kenwood Neighborhood.

3.8 PETITION 1: FAIRWAY AVENUE NE TRAFFIC STUDY PETITION (JANUARY 2021)

Residents of the Kenwood Neighborhood submitted a petition to the City of Fort Walton Beach Engineering and Utility Services Department requesting a traffic study on Fairway Avenue NE. The main concern cited in the petition was the speeding of vehicles along Fairway Avenue NE and associated safety concerns, especially during the school drop-off and pickup hours. The City conducted Study 9 in response to this petition.

3.9 PETITION 2: FAIRWAY AVENUE NE TRAFFIC STUDY PETITION (JANUARY 2021)

Residents of the Kenwood Neighborhood submitted a petition to the City of Fort Walton Beach Engineering and Utility Services Department requesting a traffic study to determine the need for an all-way stop-controlled intersection at Fairway Avenue NE, Powell Drive NE, and Golf Couse Drive NE to replace the existing two-way stop-controlled intersection. The main concern cited in the petition was the high speeds of northbound and southbound vehicles and the context of the intersection being more conducive to all-way stop-control, leading to confusion among drivers. The City conducted Study 9 in response to this petition.

3.10 STUDY 8: TRAFFIC CONCURRENCY ANALYSIS FOR FREEDOM BEACON PARK (FEBRUARY 2021)

AVCON, Inc. in Niceville, Florida prepared a Traffic Concurrency Analysis for Freedom Beacon Park for the City of Fort Walton Beach. Trip generations were calculated in accordance with the ITE *Trip Generation Manual*. Accounting for an estimated 10% internal capture rate associated with the mixed-use nature of the proposed development, an estimated 540 new trips are anticipated to be generated by the development during the PM peak hour. The trip distribution provided in the Traffic Concurrency Analysis estimates that 2% of project trips will travel to and from Mooney Road NE, which equates to approximately 10 vehicles during the PM peak hour.

The Traffic Concurrency Analysis identifies the existing pattern of cut-through traffic utilizing Mooney Road NE and Country Club Avenue NE to pass through the Kenwood Neighborhood, but suggests that "traffic calming measures, such as speed tables and stop signs, have cut down on the number of pass-through trips" to justify showing minimal project trips entering and exiting the Kenwood Neighborhood. The Traffic Concurrency Analysis shows approximately 51% of project trips going west on SR 189 (Lewis Turner Boulevard), 37% of projects going east on SR 189 (Lewis Turner Boulevard), but does not account for project trips that may travel to and from the south, where a large portion of the Fort Walton Beach population resides. A conservative estimate assuming 15% of project traffic will access the Kenwood Neighborhood roadways would result in approximately 81 new PM peak hour trips in Kenwood Neighborhood.

3.11 PETITION 3: CAMBORNE AVENUE NE TRAFFIC STUDY PETITION (FEBRUARY 2021)

Residents of the Kenwood Neighborhood submitted a petition to the City of Fort Walton Beach Engineering and Utility Services Department requesting a traffic study on Camborne Avenue NE/Mooney Road NE. The main concern cited in the petition was the increased traffic volume and high speeds of vehicles along Camborne Avenue NE leading to verbal confrontations between pedestrians and drivers. The City conducted Study 10 in response to this petition.

3.12 STUDY 9: FAIRWAY AVENUE NE TRAFFIC EVALUATION (APRIL 2021)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a traffic study along Fairway Avenue NE between February 24, 2021 and March 31, 2021 in response to Petition 1 and Petition 2 made by residents of the Kenwood Neighborhood. Four (4) traffic counters were installed at locations along Fairway Avenue NE to collect volume and speed data. The average speeds along Fairway Avenue NE ranged from 20 mph to 26 mph and 85th percentile speeds ranged from 24 mph to 31 mph. Daily vehicular volumes ranged from 310 vpd to 1,230 vpd.

Crash reports were evaluated from the five most recent years and there were six (6) recorded incidents, five (5) which occurred at the intersection of Fairway Avenue NE and Eagle Street. The results of the crash analysis indicated that the cause of the crashes at Fairway Avenue NE and Eagle Street NE were due to northbound and southbound vehicles on Fairway Avenue NE proceeding through the intersection when eastbound and westbound vehicles on Eagle Street NE

had the right-of-way. The one crash that did not occur at the intersection of Fairway Avenue NE and Eagle Street NE was an off-road crash that involved a fatality; the crash report was unclear if the motorist suffered a medical trauma that led to the crash or if the crash was the cause of the fatal trauma.

Study 9 recommended that the intersection of Fairway Avenue NE, Golf Couse Drive NE, and Powell Drive NE be converted into an all-way stop-controlled intersection. This improvement was implemented in July 2021. Study 9 made the additional recommendations that a traffic consultant should analyze the Kenwood Neighborhood as a whole, the City should install flashing school zone beacons for Kenwood Elementary, the City should add additional high visibility signage, and the City should replace existing "WATCH FOR CHILDREN" and school zone signage with high visibility signage.

3.13 STUDY 10: CAMBORNE AVENUE NE TRAFFIC STUDY (MAY 2021)

The City of Fort Walton Beach Engineering and Utility Services Department conducted a traffic study along Camborne Avenue NE in response to Petition 3 made by residents of the Kenwood Neighborhood. High stationary traffic is considered typical during school pick-up hours; thus, if traffic counters were used in these locations, measured speeds would not accurately reflect the conditions along Camborne Avenue NE because stationary traffic would heavily skew the average and 85th percentile speeds much lower than the true average and 85th percentile speeds. For this reason, speed and volume data were not collected for this study.

Crash reports were analyzed from the five most recent years and there were zero (0) incidents along Camborne Avenue NE south of Kenwood Elementary School and there were six (6) crashes along Eagle Street NE west of Kenwood Elementary school. Two (2) of the crashes along Eagle Street NE occurred during the afternoon school pick-up time.

Study 10 recommended that the City continue discussions with the Okaloosa County School Board, Kenwood Elementary School, and the Okaloosa County Sheriff's office regarding staging of traffic during the school's pickup hours. Study 10 further recommended engaging a traffic consultant to analyze Kenwood Neighborhood, restriping the school zone pavement markings north of Covington Place, prioritizing the addition of flashing school zone beacons at Kenwood Elementary School, and increasing police and/or sheriff presence to enforce school zone speed limits and prevent queueing vehicles from blocking driveways along Camborne Avenue NE.

3.14 ADDITIONAL LITERATURE: RESIDENTIAL TRAFFIC CALMING HANDBOOK (JULY 2011)

The City of Fort Walton Beach Engineering and Utility Services Department published a Residential Traffic Calming Handbook outlining steps that can be taken by residents to collaborate with City officials regarding the installation or removal of traffic calming devices.

The Handbook includes a description of the roads eligible for traffic calming measures, information about the source of funding for traffic calming measures, several examples of potential

traffic calming measures, and an outline of the procedures for implementing or removing traffic calming measures.

Per the Residential Traffic Calming Handbook, only roads classified as local are eligible for consideration of traffic calming measures under the guidelines of this program; arterial roadways and collector roadways are not eligible.

Funding for residential traffic calming measures can be allotted from the City's annual budget, but the Handbook notes that oftentimes the annual budget is fully encumbered by the time a traffic calming measure is requested. Alternative funding options presented are waiting for the next budget year, a local special tax assessment, neighborhood association funding, or a proportionate share assessment paid by affected residents. Typically, the proportionate share assessment would be required only when the affected residents request a traffic calming measure that is more costly than the most economically feasible traffic calming measure deemed acceptable by the City Engineer.

The examples of potential traffic calming measures outlined in the Residential Traffic Calming Handbook include a Neighborhood Traffic Watch Program (i.e., flyers to increase awareness for the need to control speed), roundabouts, street narrowing, speed tables, chicanes, and combinations thereof.

The most extensive portion of the Residential Traffic Calming Handbook outlines the standard procedure for implementation of traffic calming measures. The procedure requires (Step 1) initiation of the request by a concerned resident, (Step 2) a traffic engineering analysis considering the existing roadway conditions and collecting vehicular volume and speed data at the subject location, (Step 3) a preliminary analysis by the City Engineer evaluating the results of the traffic engineering analysis, (Step 4) a petition signed by 75% of the affected property owners within the vicinity of the proposed traffic calming measure who agree with the recommendation, and (Step 5) a Public Hearing to provide an opportunity for the City to obtain additional input from residents on the recommended traffic calming measure(s). In the event that residents wish to remove traffic calming measures, the conditions for removal are outlined as well.

Finally, the Handbook outlines conditions in which traffic calming measures can be installed in what are deemed "emergency situations." This section allows the City discretion to install traffic calming measures where crashes have occurred as a result of speeds or volumes or when the 85th percentile speed is measured at 25 mph or greater in excess of the posted speed limit.

4.0 PUBLIC INVOLVEMENT

4.1 COMMUNITY WORKSHOP

A community workshop was held on Thursday, August 26, 2021 at 6:00 PM at the Fort Walton Beach Golf Club for the project team to introduce the Kenwood Neighborhood Traffic Study to the community and to provide an opportunity for local residents to provide input on the direction of the project. Approximately 20 people attended the Community Workshop, including representatives from the City of Fort Walton Beach, Jenkins Engineering, and Kimley-Horn. A copy of the sign-in sheet is included in **Appendix B**.

Photo 1: Kenwood Neighborhood Traffic Study Community Workshop

City staff introduced the general project study area, discussed some of the historical context of prior studies, outlined the study purpose with the attendees, and introduced the Jenkins Engineering and Kimley-Horn project team.

Representatives from Kimley-Horn elaborated on the purpose of the study, discussed the planned approach to collecting information from the public and collecting data within the neighborhood, explained the purpose of the Community Workshop, and opened the floor to public participation.

4.1.1 QUESTION AND ANSWER

Prior to the beginning of the breakout session, several attendees expressed concerns about existing traffic trends observed throughout the Kenwood Neighborhood. Foremost among their concerns was the cut-through traffic that utilizes Country Club Avenue NE to travel between SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard). Attendees were insistent that an alternate north-south connection roadway outside of the neighborhood should be considered as an improvement alternative as part of this study. Additional concerns that were expressed before the breakout session included:

- Travel speeds
- Traffic that does not stop at stop signs
- Queued vehicles on Camborne Avenue NE blocking resident driveways during school pick-up

4.1.2 BREAKOUT SESSION

During the breakout session, members of the project team were stationed around the room at one of three display boards to answer questions and guide the public in providing input. Copies of the display boards are included in **Appendix B**.

Two of the boards featured aerial exhibits of the Kenwood Neighborhood with proposed data collection locations. Attendees were prompted to use sticky notes to comment on concerns at specific locations within the neighborhood roadway network and particularly to identify any locations where additional traffic data should be collected to help capture a comprehensive representation of existing traffic patterns within the neighborhood. Comments posted on the aerial exhibits, as they were written, included:

- Dead end Rue de le Roi and Country Club
- A dead end at Country Club and Rou de will stop traffic, and a roundabout at Mooney and Country Club will slow traffic down
- Stamford used as cut-through from Mooney to school
- Not able to see oncoming traffic (Mooney Road NE at Country Club Avenue NE)
- Roundabout (Mooney Road NE at Country Club Avenue NE)
- Repaint the divider lines on Mooney Road NE
- Way to get in and out of neighborhood (Mooney Road NE at Stamford Avenue NE)

The third board featured illustrations of 12 different traffic calming techniques. Attendees were prompted to use three colored sticky dots to vote for the alternatives that they would most like to see within the neighborhood. The quantity of stickers under each alternative will help guide the project team in considering potential improvements. **Figure 3** summarizes the votes received for each of the 12 traffic calming alternatives presented at the Community Workshop.

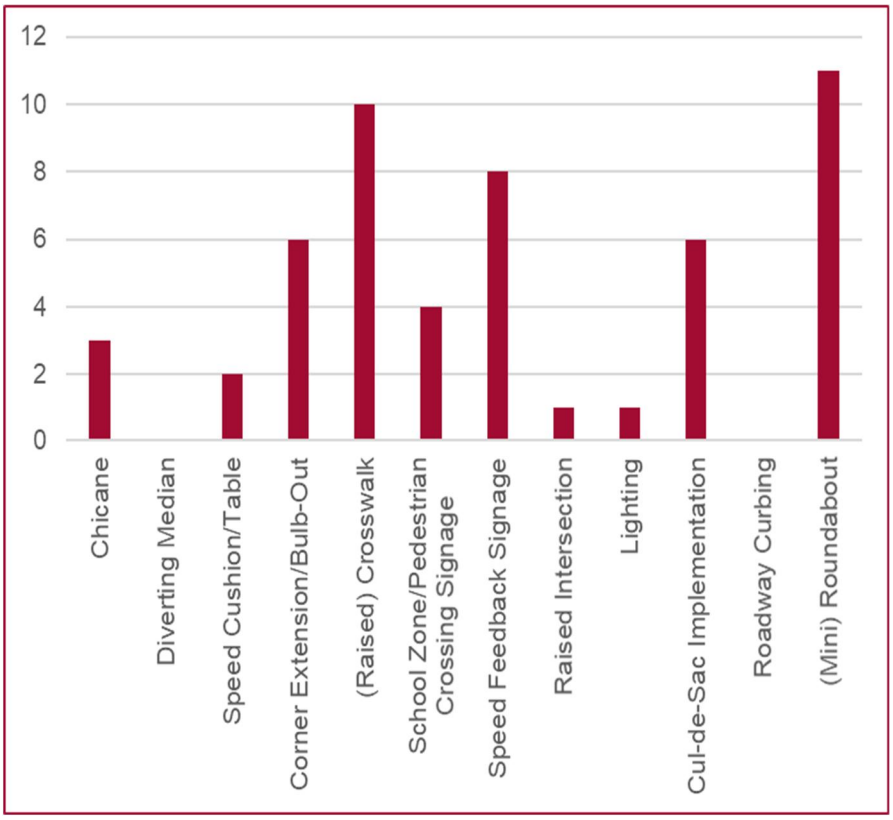

Figure 3: Community Workshop Vote Count, Traffic Calming Alternatives

For the remainder of the Community Workshop, the project team answered questions from the public, and the attendees were encouraged to fill out comment cards elaborating on their traffic concerns within the Kenwood Neighborhood. Comment cards submitted by meeting participants are included in **Appendix B**. The meeting ended at approximately 7:15 PM.

4.2 ONLINE SURVEY

In order to supplement the information and opinions collected from the public at the Community Workshop, a follow-up online survey was published by the Fort Walton Beach Public Relations office to the Kenwood Neighborhood Nextdoor group, which includes more than 700 members. Over a two-week period, 15 responses were collected, providing further insight into the concerns over Kenwood residents and providing additional locations for data collection to inform the traffic analysis.

4.2.1 RANKING CONCERNS

Survey participants were asked to rank five traffic concerns within the Kenwood neighborhood from most concerning to least concerning: vehicle speeds, number of vehicles, bike and pedestrian safety, vehicles running stop signs, and school pick-up queues. **Figure 4** summarizes how the 15 respondents ranked the concerns, with 1 representing the most concerning and 5 the least. Vehicle speeds were most commonly cited as the most concerning issue by survey participants. The number of vehicles was the next-highest ranked concern, followed closely by bicycle and pedestrian safety and vehicles running stop signs. School pick-up queues were most commonly the lowest ranked concern among the options presented to the survey participants.

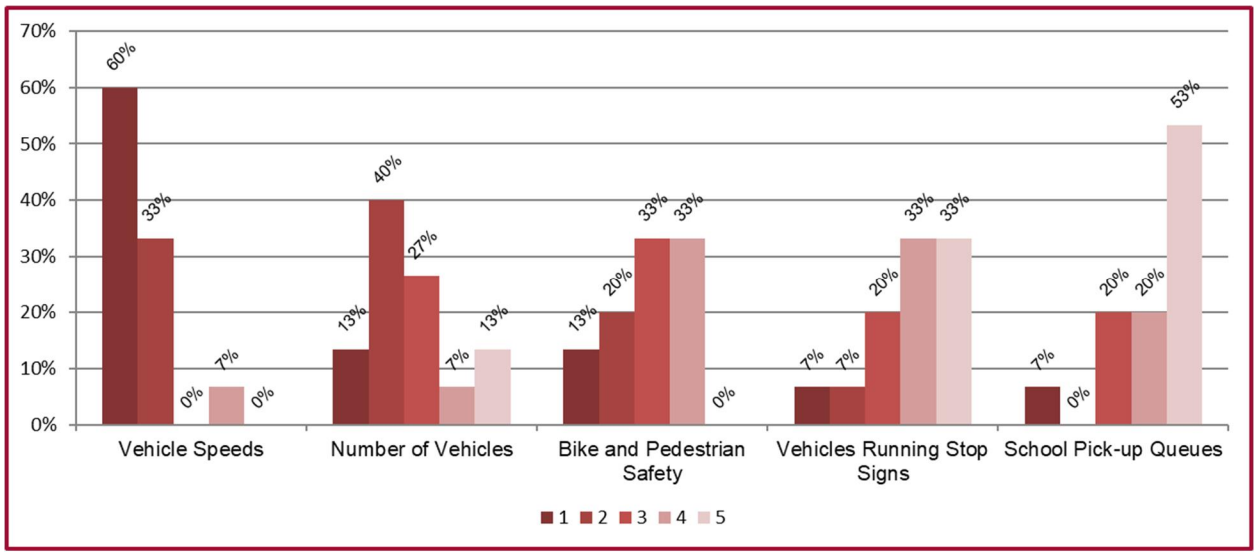

Figure 4: Online Survey Ranking Traffic Concerns

Respondents were given an opportunity to write in additional concerns not captured in the ranking, and provided several answers, including the following:

- Need for an alternative north-south route
- Passing in no-passing areas
- Business parking on neighborhood roads (Chelsea Drive NE, in particular)
- On-street parking and visibility issues with pedestrians
- Dislike speed bumps
- Speed tables ineffective
- Crosswalk signage

4.2.2 IMPROVEMENT ALTERNATIVES

Survey participants were asked to review the list of 12 traffic calming techniques that were presented at the Community Workshop and select up to 3 that they would most like to see implemented in the Kenwood neighborhood. Responses indicated that speed cushions/tables were the most popular alternative (7 votes), followed closely by school zone/pedestrian crossing signage (5 votes) and speed feedback signage (5 votes). **Figure 5** illustrates the number of votes each alternative received in the online survey.

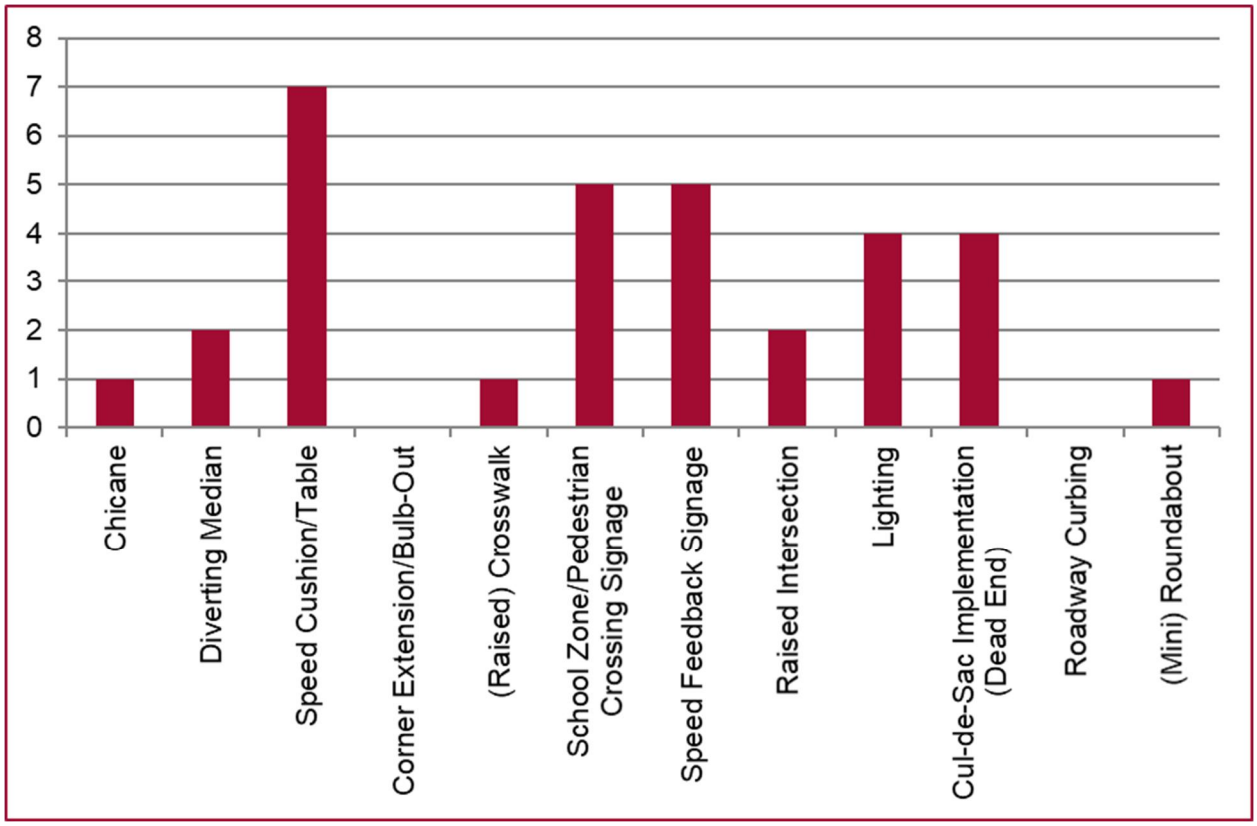

Figure 5: Online Survey, Traffic Calming Alternatives

Respondents were also offered an 'Other' option, and provided the following alternatives:

- All-way stop-control the intersection of Fairway Avenue NE and Rodney Avenue NE
- Install card-activated gates on Mooney Road NE at either end of the neighborhood
- Radar speed enforcement with bill-by-plate
- Prohibit on-street parking
- Add more stop signs
- Repaint centerline on Mooney Road NE (south) and/or install reflectors at the curve near the bridge

4.2.3 DATA COLLECTION LOCATIONS

Lastly, survey participants were offered an opportunity to help guide the data collection process for the traffic study by recommending data collection locations within the Kenwood Neighborhood. Participants were not provided with a map of the proposed data collection locations, so some of the responses overlap with locations that were already planned for inclusion in the data collection efforts:

- Chelsea Drive NE
- Country Club Avenue NE
- Country Club Avenue NE at Mooney Road NE
- Fairway Avenue NE between Eagle Street NE and Wedgewood Lane
- Linwood Road NE
- Mooney Road NE at Fairway Avenue NE
- Mooney Road NE (south) east of Country Club Avenue NE
- Sherwood Road NE

5.0 DATA COLLECTION

An extensive data collection effort was undertaken as part of the Kenwood Neighborhood Traffic Study in order to verify the qualitative observations of the residents. The traffic data provides a quantitative measure for traffic analysis and upon which recommendations can be made. The raw traffic count data is provided in **Appendix C**.

5.1 SEGMENT SPEED AND VOLUME DATA

Vehicular speed and volume data was collected at various locations throughout the Kenwood Neighborhood to document existing traffic conditions.

5.1.1 SUMMER DATA COLLECTION

During the summer months, when Okaloosa County Schools were not in session, 24-hour directional speed and volume data were collected at 6 locations within the Kenwood Neighborhood for comparison with fall data. The 24-hour summer data was collected on Wednesday, July 20, 2021. Data was collected at 2 locations on Country Club Avenue NE, 2 locations on Mooney Road NE, and 1 location each on Golf Couse Drive NE and Fairway Avenue NE. **Figure 6** illustrates the daily volumes and speeds collected in the summer and **Figure 7** illustrates the AM and PM peak hour volumes and speeds collected in the summer.

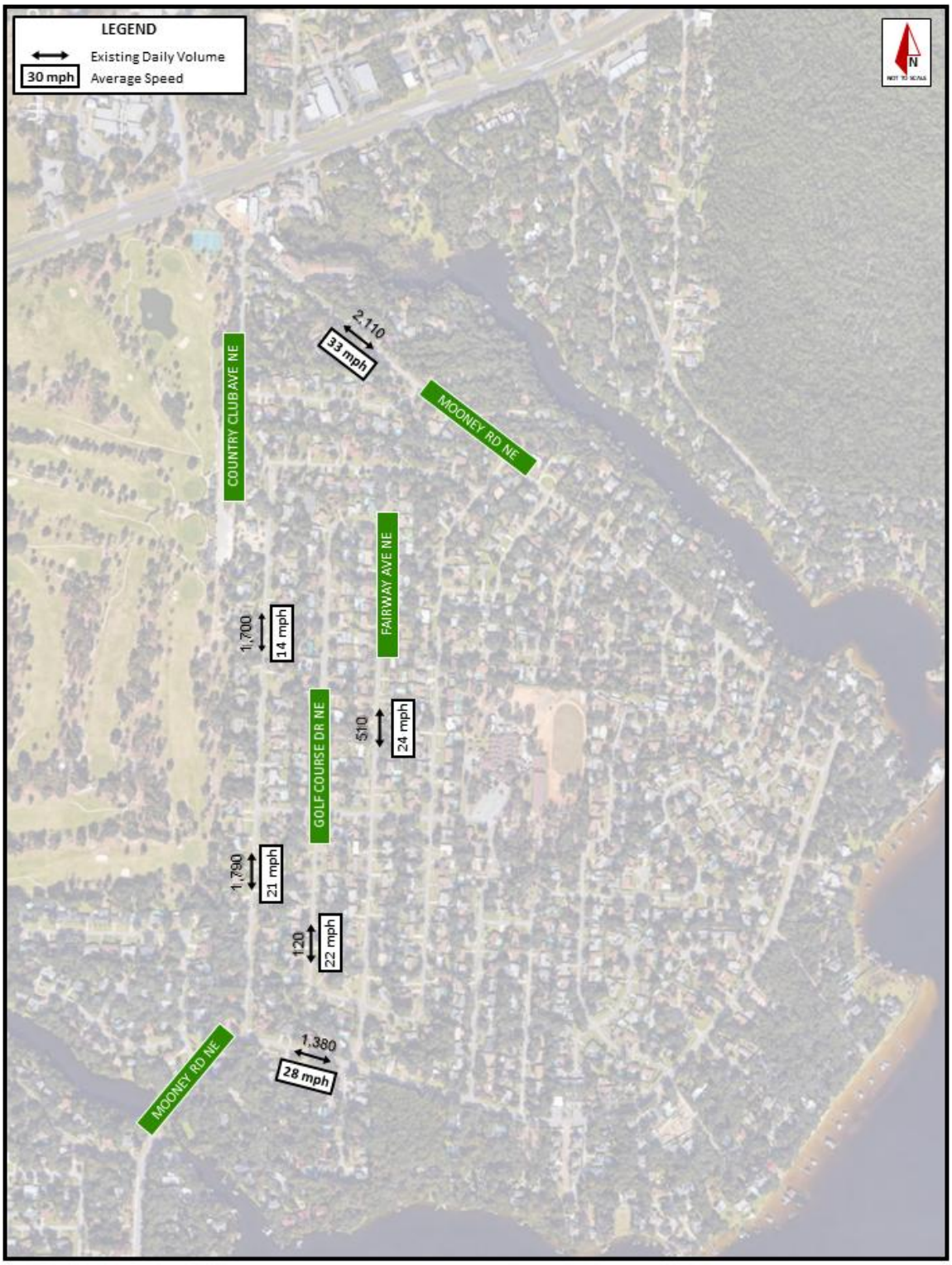

Figure 6: Summer Daily Traffic Volumes and Average Speeds

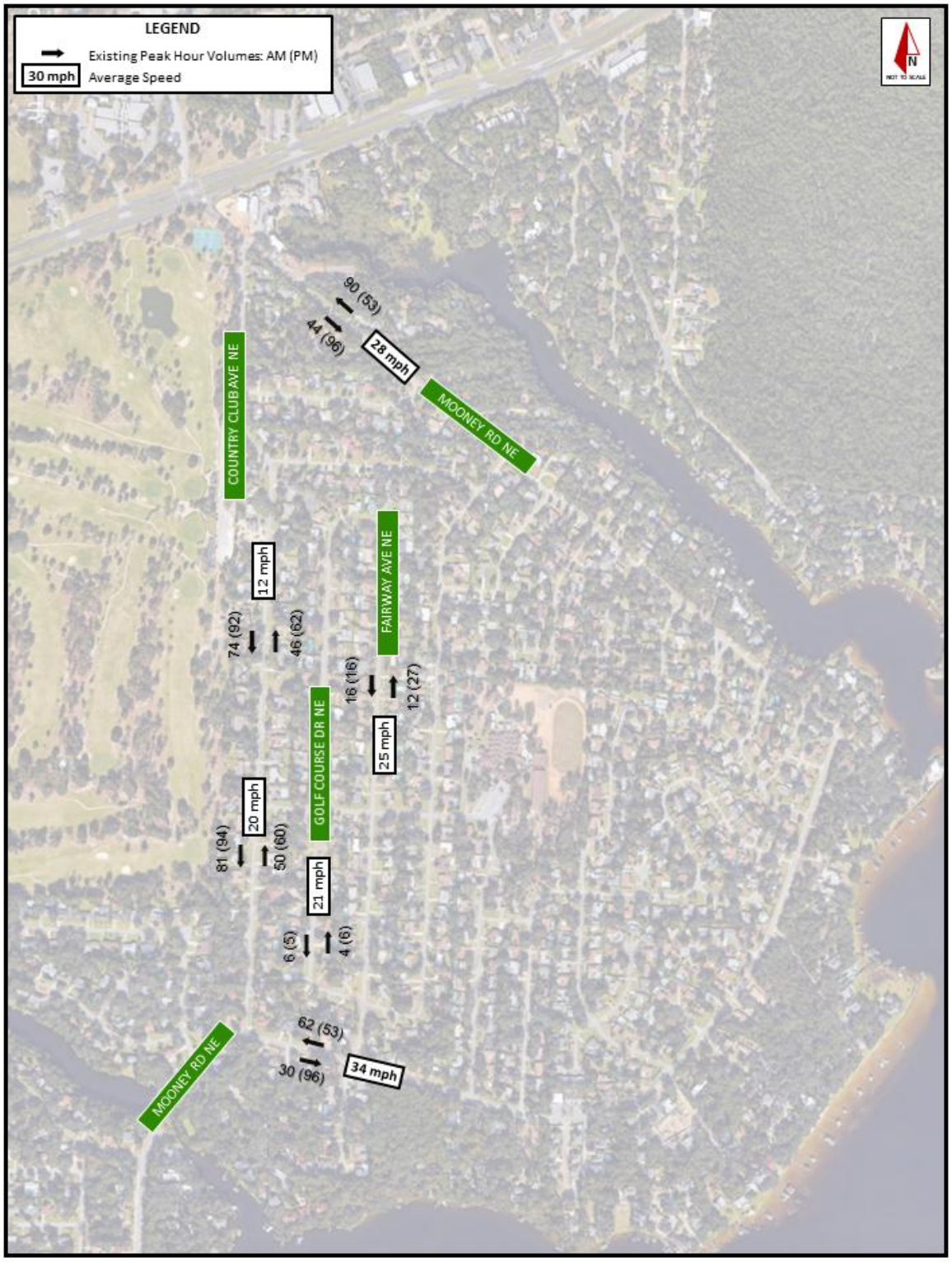

Figure 7: Summer Peak Hour Traffic Volumes and Speeds

5.1.2 FALL DATA COLLECTION

A more expansive collection of traffic volume and speed data was undertaken during the fall months, when Okaloosa County Schools were in session. Data collected in the fall included 24-hour directional speed and volume data from the 6 locations collected in the summer, plus an additional 7 locations throughout the Kenwood Neighborhood. Four (4) of the additional speed and volume data collection locations were determined based on public input received from the Community Workshop and from the online survey:

- Country Club Avenue NE north of Rue De Le Roi Street NE
- Fairway Avenue NE south of Eagle Street NE
- Powell Drive NE south of Eagle Street NE
- Stamford Avenue NE south of Mooney Road NE

The 24-hour fall data was collected on Tuesday, October 19, 2021. **Figure 8** illustrates the additional data collection locations and the daily volume and speeds collected in the fall and **Figure 9** illustrates the AM and PM peak hour volumes and speeds collected in the fall.

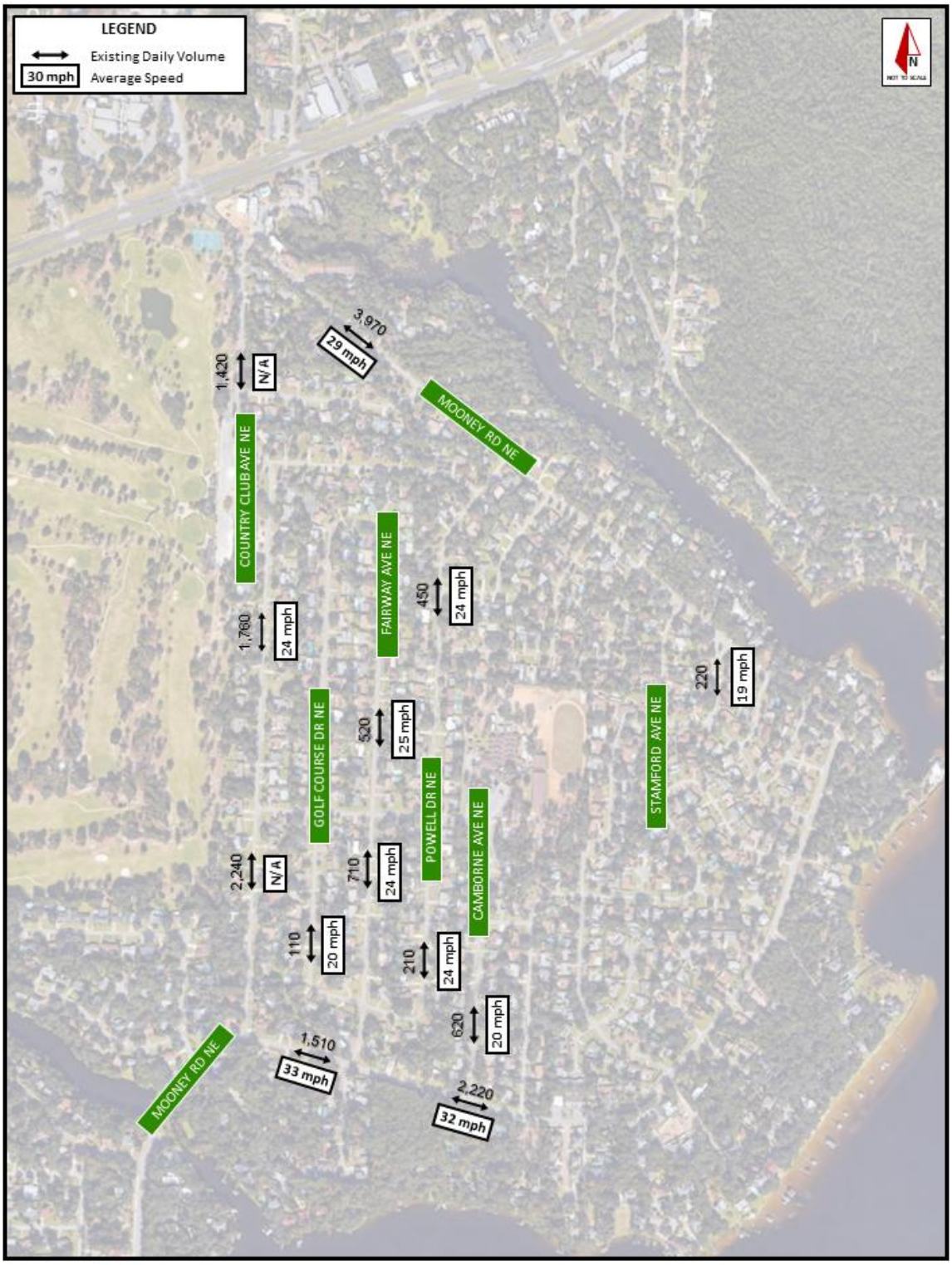

Figure 8: Fall Daily Traffic Volumes and Average Speeds

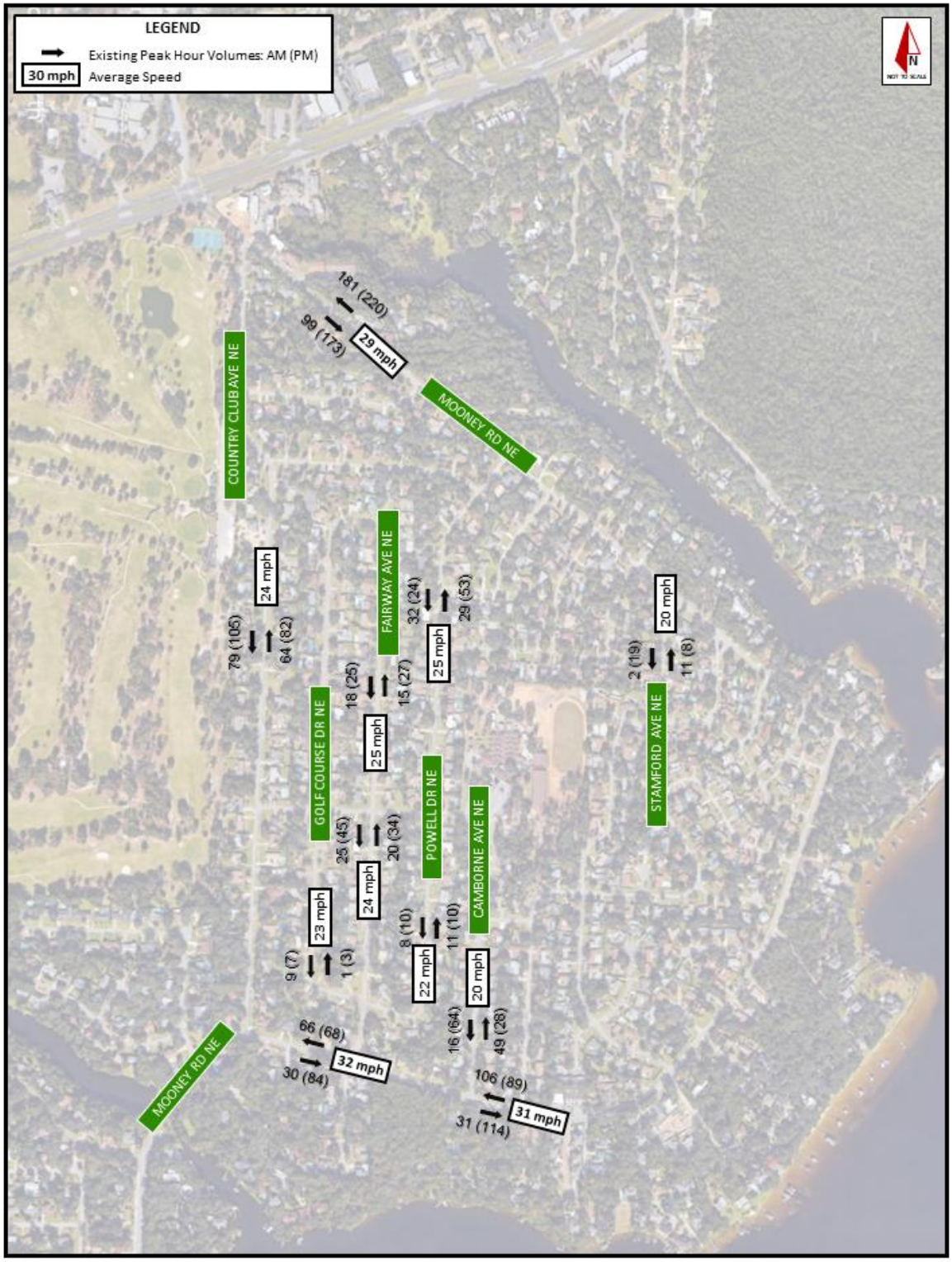

Figure 9: Fall Peak Hour Traffic Volumes and Speeds

5.2 TURNING MOVEMENT VOLUMES

Turning movement counts were collected at three (3) locations on Tuesday, October 19, 2021. Turning movement volumes were recorded from 7:00 AM to 9:00 AM and from 12:00 PM to 6:00 PM to account for the AM peak period, the PM peak period, and the afternoon peak period in relation to pick-up traffic to and from the Kenwood Elementary School. Turning movement data included heavy vehicles (including buses), pedestrians, and bicyclists. **Figure 10** illustrates the AM peak hour and PM peak hour turning movement volumes at the intersection of Country Club Avenue NE and Eagle Street NE and the intersection of Fairway Avenue NE and Golf Couse Drive NE/Powell Drive NE.

Since the operating hours of the Kenwood Elementary School do not necessarily match the peak hours of traffic on the surrounding roadway network, peak hour data at the school driveways were determined separately. **Figure 11** illustrates the AM peak hour turning movement volumes at the Kenwood Elementary School driveways and **Figure 12** illustrates the afternoon peak hour turning movement volumes at the Kenwood Elementary School driveways, at times consistent with the drop-off and pick-up operations at the school on a typical weekday.

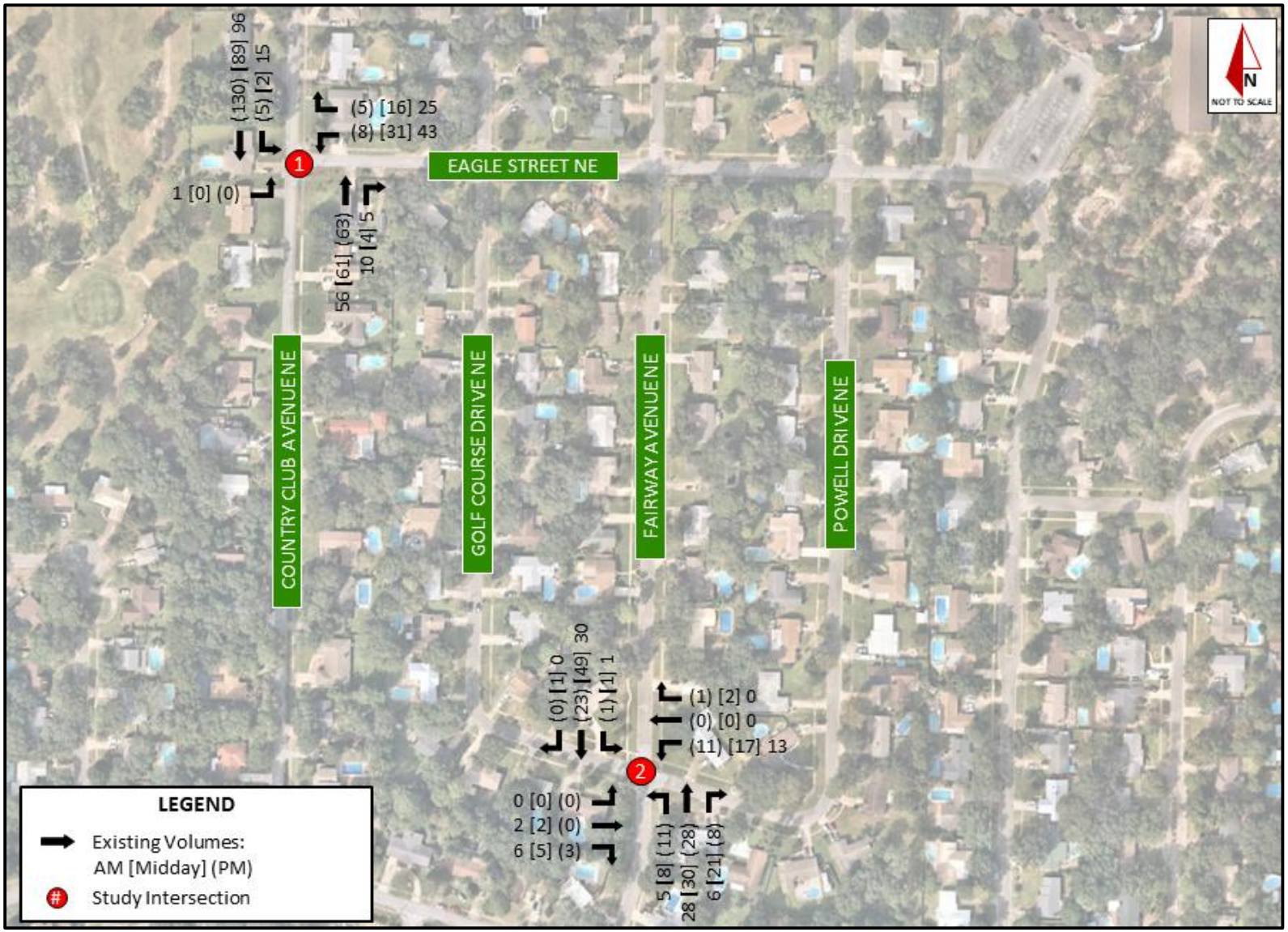

Figure 10: Intersection Turning Movement Volumes

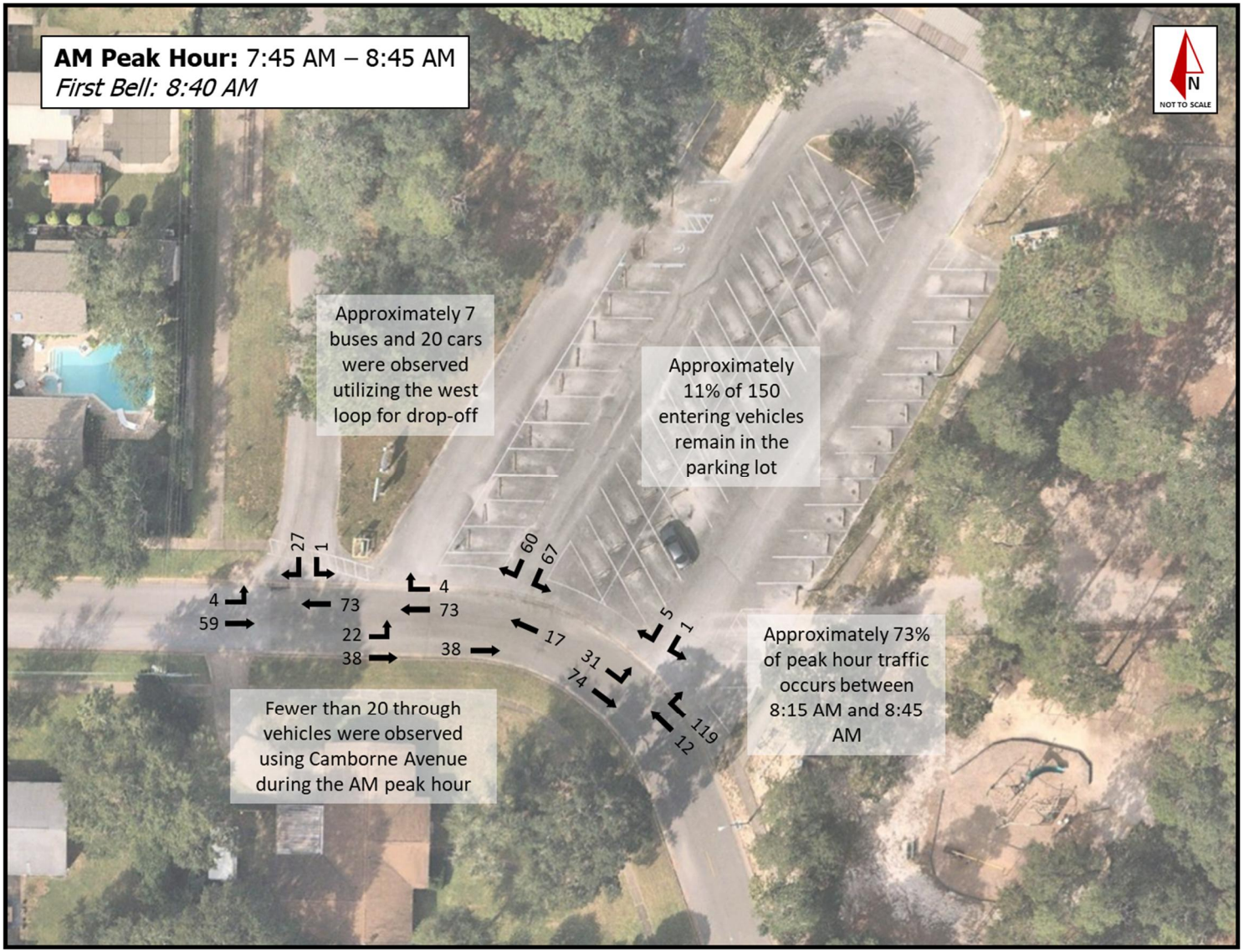

Figure 11: Kenwood Elementary School Driveway Volumes, AM Peak Hour

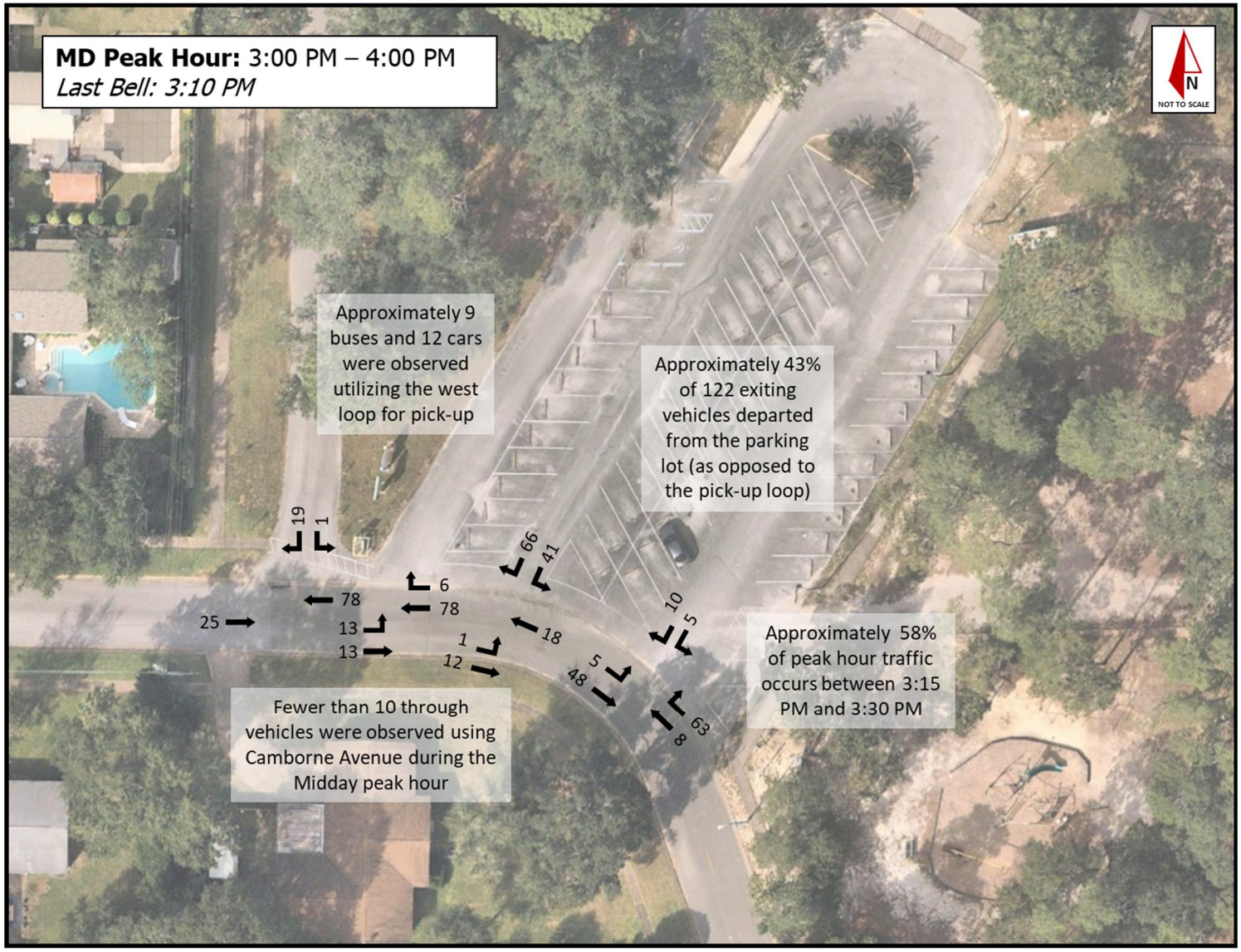

Figure 12: Kenwood Elementary School Driveway Volumes, Midday Peak Hour

5.3 ORIGIN-DESTINATION DATA

Bluetooth data sensors were utilized to collect origin-destination data at six (6) locations in and around the Kenwood Neighborhood. The Bluetooth sensors collect a randomized but unique code from individual vehicles and cell phones as they pass within 300 feet of a sensor, and a dataset is compiled of 'trips' matching individual devices that pass more than one sensor within the study area. The Bluetooth data are not comprehensive and are meant only to provide a representative sample of trips passing each of the origin-destination Bluetooth sensors.

Bluetooth origin-destination data was collected over a 7-day period from Monday, October 18, 2021 through Sunday, October 24, 2021. The following locations were included in the origin-destination data collection effort:

1. Mooney Road NE west of Country Club Avenue NE (south of Kenwood)
2. Country Club Avenue NE south of Eagle Street NE
3. Country Club Avenue NE north of Eagle Street NE – sensor malfunctioned; data not included in dataset
4. Mooney Road NE west of Country Club Avenue NE (north of Kenwood)
5. Mooney Road NE and Mooney Road NE (at eastern limit of Kenwood)
6. Kenwood Elementary School
7. Fairway Avenue NE and Golf Couse Drive NE

As noted, the Bluetooth sensor at location 3 malfunctioned during the data collection effort and was therefore excluded from the dataset. The origin-destination Bluetooth sensor locations are illustrated in **Figure 13**.

5.4 CRASH DATA

Crash data within the Kenwood Neighborhood were obtained from the University of Florida's Signal Four Analytics web application for crashes reported from January 1, 2016 through December 31, 2020. Twenty-one (21) crashes were recorded within the study area during the five-year analysis period. Individual crash reports for each incident were reviewed in order to understand the circumstances and contributing factors for each crash. A table summary of the raw crash data is included in **Appendix D**.

5.5 SCHOOL ZONE DELINEATION AND SIGNAGE

The locations of school zone pavement markings and signs were reviewed utilizing aerial photography and field review within the Kenwood Neighborhood. Additionally, information regarding the Kenwood Elementary School drop-off and pick-up procedures and the locations identified and/or utilized by queueing parents was reviewed.

Figure 13: Origin-Destination Bluetooth Sensor Locations

6.0 TRAFFIC ANALYSIS

The data collected in July 2021 and October 2021 were evaluated in order to better understand the traffic patterns within the Kenwood Neighborhood and identify deficiencies or areas for concern.

6.1 SPEED AND VOLUME ANALYSIS

The 24-hour directional speed and volume data from the summer was compared to that of the fall to understand how traffic patterns may change between the summer and the fall, when Kenwood Elementary School is in session. The fall data collection locations and their reference numbers are illustrated in **Figure 14**.

6.1.1 DAILY SPEED AND VOLUME ANALYSIS

Table 1 summarizes the daily speed and volume data collected within the Kenwood Neighborhood, allowing comparison between the summer data and the fall data at the six (6) shared data collection locations. **Figure 15** illustrates the daily speed and volume data variances noted in **Table 1**.

Count Location Number	Roadway	Posted Speed Limit	Summer Data		Fall Data		Summer to Fall Volume Variance
			85th Percentile Speed	Total Daily Volume	85th Percentile Speed	Total Daily Volume	
1	Country Club Ave NE	25	-	-	-	1,420	-
2	Mooney Rd NE	35	37	2,111	37	3,971	+88%
3	Country Club Ave NE	25	20	1,701	28	1,762	+4%
4	Powell Dr NE	25	-	-	29	454	-
5	Stamford Ave NE	25	-	-	24	215	-
6	Fairway Ave NE	25	30	510	30	520	+2%
7	Country Club Ave NE	25	25	1,793	-	2,241	+25%
8	Golf Course Dr NE	25	28	116	27	113	-3%
9	Fairway Ave NE	25	-	-	28	714	-
10	Powell Dr NE	25	-	-	30	205	-
11	Camborne Ave NE	25	-	-	25	615	-
12	Mooney Rd NE	25	40	1,384	38	1,512	+9%
13	Mooney Rd NE	25	-	-	38	2,219	-

[1]Speed shown in red text represents location where 85th percentile speed is equal to or greater than 5 mph over posted speed.

Table 1: Daily Speed and Volume Data

Locations where daily speed data indicated that the 85th percentile speed was 5 mph or greater in excess of the posted speed limit are highlighted in red. These locations include both count locations on Mooney Road NE near the southern end of the Kenwood Neighborhood, the northern count location on Fairway Avenue NE, and the southern count location on Powell Drive NE. The 85th percentile speeds along Mooney Road NE, in particular, suggest that traffic calming measures may be warranted to reduce travel speeds along the southern limit of the study area.

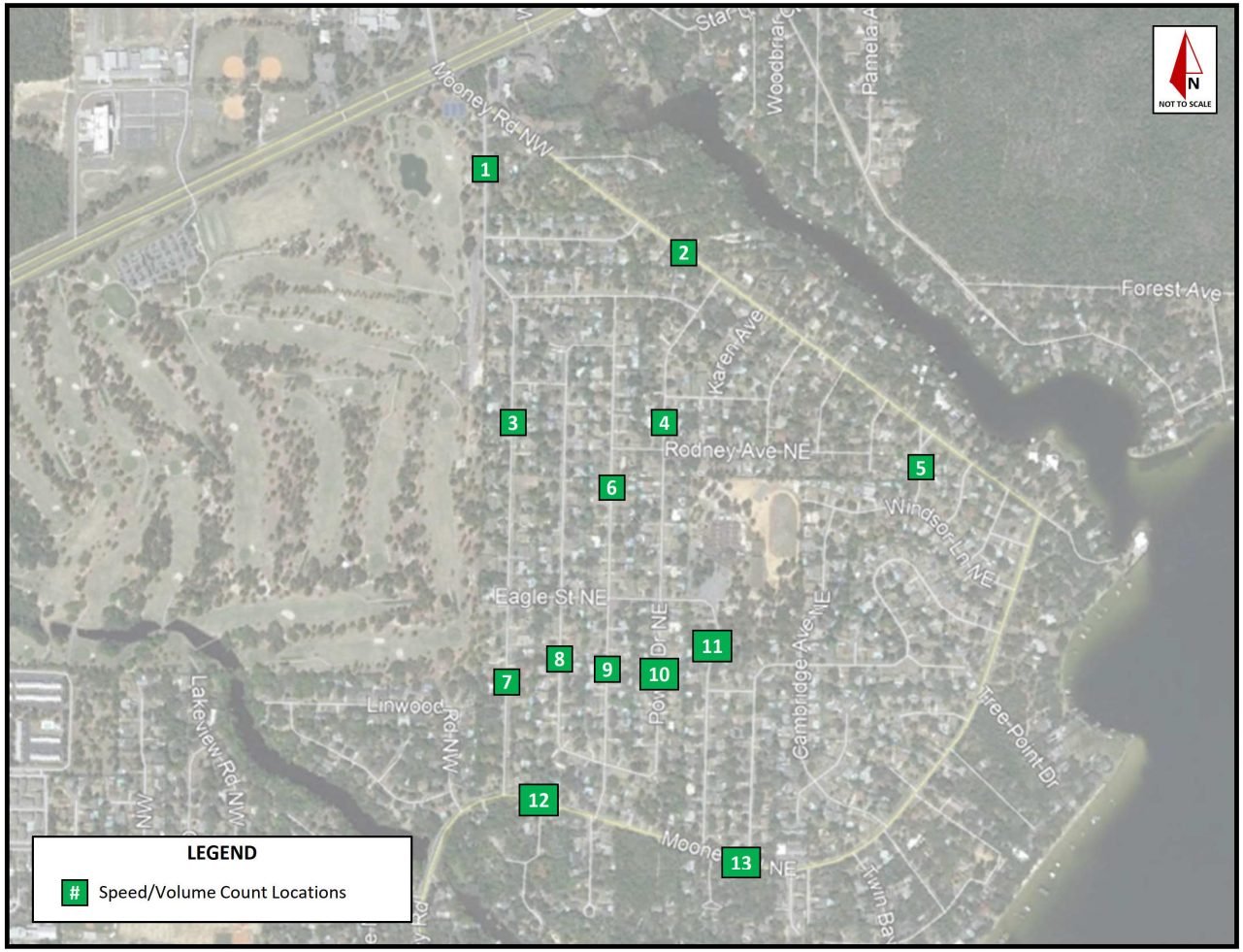

Figure 14: Fall Speed and Volume Count Locations

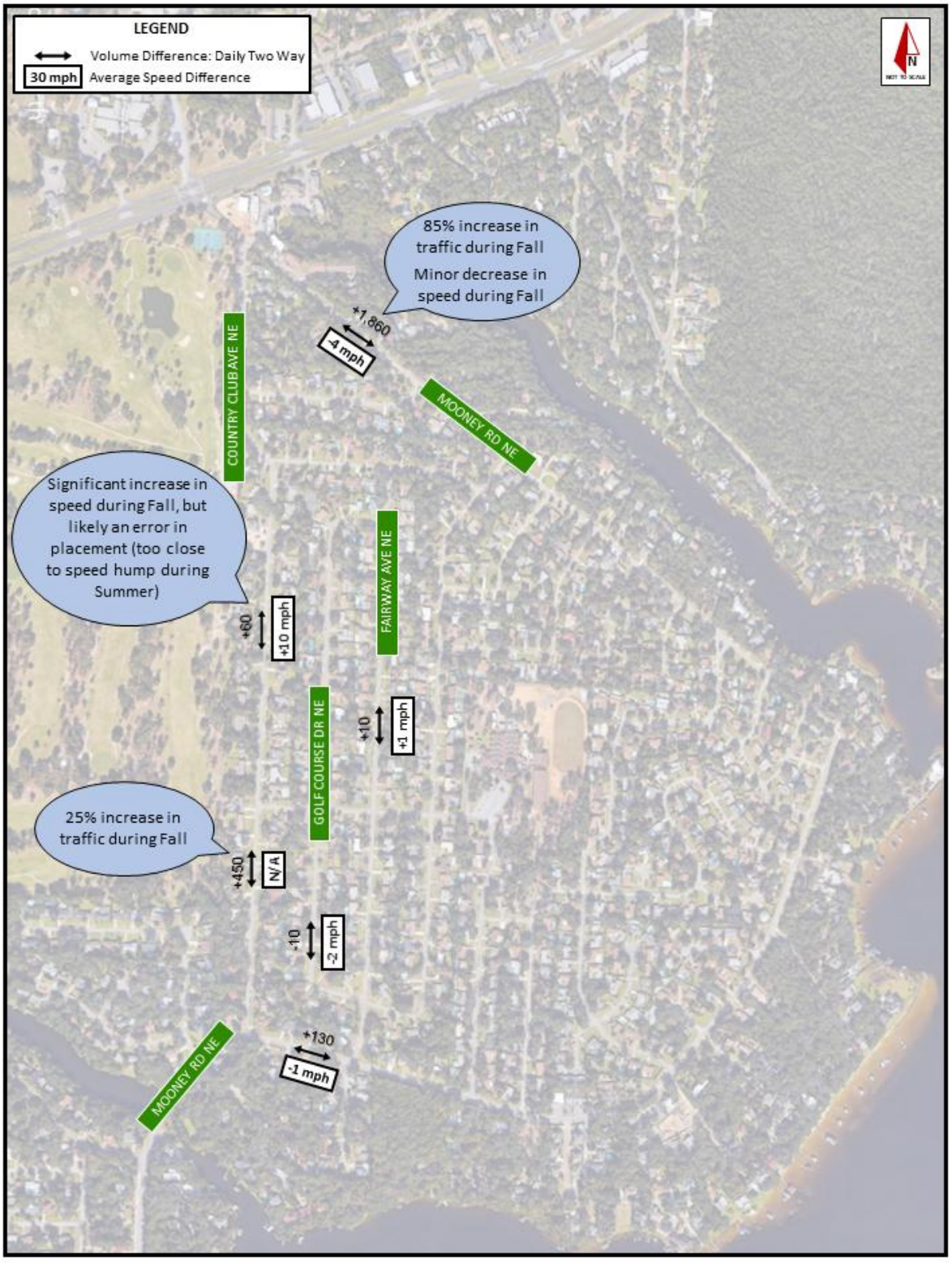

Figure 15: Daily Speed and Volume Data Comparison, Fall vs. Summer

The most significant increase in daily traffic volumes during the fall as compared to the summer was at the northern data collection location on Mooney Road NE, where the daily traffic volume increased by approximately 85% in the fall. The data collection location on Country Club Avenue NE south of Eagle Street NE also exhibited an increase in daily traffic volume by approximately 25%.

Overall, all of the local roadways within the Kenwood Neighborhood have sufficient capacity to accommodate the daily traffic volumes observed during the summer and the fall data collection periods. Based on the Florida Department of Transportation (FDOT) *Quality/Level of Service Handbook (2020)* generalized service capacity tables and adjusting for non-state roads (-10%) and roads without turn lanes (-20%), the daily LOS C capacity of all study roadways is 5,110 vehicles per day and the daily LOS D capacity of all study roadways is 10,360 vehicles per day.

6.1.2 PEAK HOUR SPEED AND VOLUME ANALYSIS

Table 2 summarizes the AM peak hour and PM peak hour speed data collected within the Kenwood Neighborhood, allowing comparison between the summer data and the fall data at the six (6) shared data collection locations. **Figure 16** illustrates the peak hour speed data comparisons noted in **Table 2**.

Table 2: Peak Hour Speed Data

Count Location Number	Roadway	Posted Speed Limit	Average Speed (mph)			
			Summer Data		Fall Data	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	Average Speed
1	Country Club Ave NE	25	-	-	-	-
2	Mooney Rd NE	35	27	29	29	28
3	Country Club Ave NE	25	11	12	24	23
4	Powell Dr NE	25	-	-	26	23
5	Stamford Ave NE	25	-	-	20	20
6	Fairway Ave NE	25	24	25	25	24
7	Country Club Ave NE	25	19	21	-	-
8	Golf Course Dr NE	25	20	21	24	21
9	Fairway Ave NE	25	-	-	25	22
10	Powell Dr NE	25	-	-	26	17
11	Camborne Ave NE	25	-	-	22	18
12	Mooney Rd NE	20	34	33	32	32
13	Mooney Rd NE	25	-	-	31	31

[1]Speed shown in red text represents locations where average speeds are equal to or greater than 5 mph over posted speed.

Locations where peak hour speed data indicated that average speed was 5 mph or greater in excess of the posted speed limit are highlighted in red. During the peak hours, only the count locations on Mooney Road NE near the southern end of the Kenwood Neighborhood were identified as having average travel speeds more than 5 mph in excess of the posted speed limit.

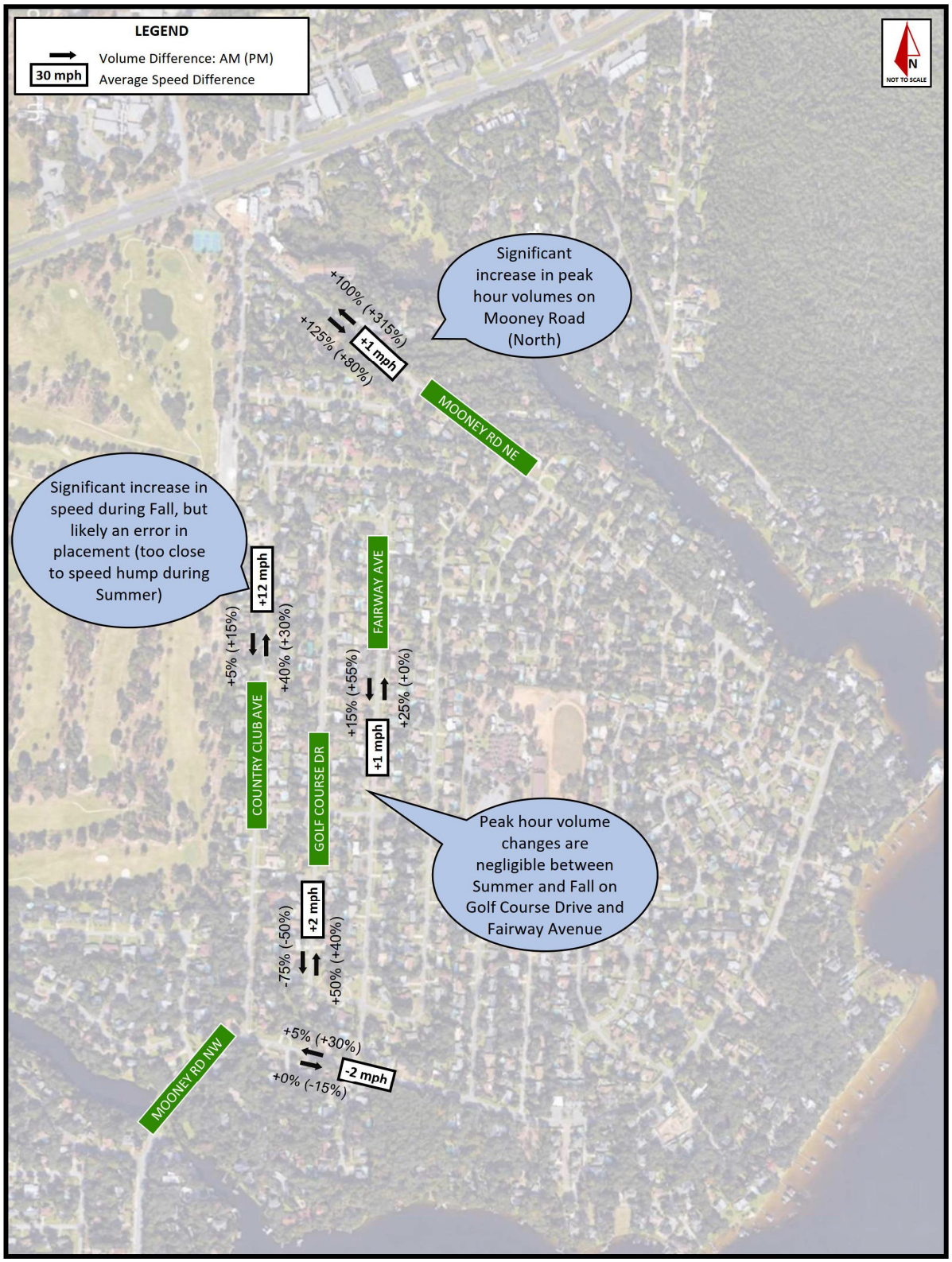

Figure 16: Peak Hour Speed and Volume Data Comparison, Fall vs. Summer

Table 3 summarizes the AM peak hour and PM peak hour volume data collected within the Kenwood Neighborhood, allowing comparison between the summer data and the fall data at the six (6) shared data collection locations. **Figure 16** illustrates the peak hour volume variances noted in **Table 3**.

Table 3: Peak Hour Volume Data

Count Location Number	Roadway	Summer Data		Fall Data		Summer to Fall Volume Variance	
		Peak Hour Veh/Hr		Peak Hour Veh/Hr			
		AM	PM	AM	PM	AM	PM
1	Country Club Ave NE	-	-	127	161	-	-
2	Mooney Rd NE	134	149	280	393	+109%	+164%
3	Country Club Ave NE	120	154	143	187	+19%	+21%
4	Powell Dr NE	-	-	61	77	-	-
5	Stamford Ave NE	-	-	13	27	-	-
6	Fairway Ave NE	28	43	33	52	+18%	+21%
7	Country Club Ave NE	131	154	192	182	+47%	+18%
8	Golf Course Dr NE	10	11	10	10	+0%	-9%
9	Fairway Ave NE	-	-	45	79	-	-
10	Powell Dr NE	-	-	19	20	-	-
11	Camborne Ave NE	-	-	65	92	-	-
12	Mooney Rd NE	92	149	96	152	+4%	+2%
13	Mooney Rd NE	-	-	137	203	-	-

The most significant increase in peak hour traffic volumes during the fall as compared to the summer was at the northern data collection location on Mooney Road NE, where the AM peak hour traffic volume increased by more than 100% in the fall and the PM peak hour traffic volume increased by more than 160%. The data collection locations on Country Club Avenue NE exhibited an increase in peak hour traffic volumes ranging from 19% to 48% and the data collection location on Fairway Avenue NE north of Eagle Street NE exhibited an increase of approximately 20% during the AM peak hour and the PM peak hour.

Overall, all of the local roadways within the Kenwood Neighborhood have sufficient capacity to accommodate the AM peak hour and PM peak hour traffic volumes observed during the summer and the fall data collection periods. Based on the FDOT *Quality/Level of Service Handbook (2020)* generalized service capacity tables and adjusting for non-state roads (-10%) and roads without turn lanes (-20%), the peak hour two-way LOS C capacity of all study roadways is 462 vehicles per hour and the peak hour two-way LOS D capacity of all study roadways is 931 vehicles per hour. All study roadways operate within the LOS D capacity and all, but the northern segment of Mooney Road NE operate within the LOS C capacity.

Note that there is adequate capacity to accommodate traffic from the Liza Jackson Preparatory School and from Freedom Beacon Park, despite the fact that their respective traffic studies likely underestimated the amount of project traffic that may travel to or through the Kenwood Neighborhood.

6.2 INTERSECTION CAPACITY ANALYSIS

Two stop-controlled intersections were evaluated during the AM peak hour and the PM peak hour using the *Synchro* (v11) software package, which implements the methodologies published in the latest *Highway Capacity Manual*. Both intersections operate with LOS A during AM, midday, and PM peak hours, indicating that vehicles experience an average of less than 10 seconds delay at these intersections during the peak periods. Synchro output reports are included in **Appendix E**.

6.3 CRASH ANALYSIS

Detailed crash data within the study area from 2016 through 2020 were reviewed and evaluated. For each of the 21 crashes included in the analysis, the crash report was reviewed to gain a better understanding of the crash and to ensure the details of the crash were coded correctly.

6.3.1 CRASH SEVERITY

Of the 21 crashes recorded in the 5-year analysis period, 1 involved a fatality, 5 resulted in one or more injuries, and 15 resulted in property damage only.

The fatal crash occurred on December 19, 2017 at approximately 8:00 AM when a northbound vehicle on Fairway Avenue NE ran off the road and struck a mailbox, a parked vehicle, and a utility pole. The crash occurred under daylight conditions with a dry surface, and no alcohol involvement was suspected by the reporting officer. It is not clear from the crash report whether a medical trauma was suffered prior to the crash or as a result of the crash.

Two (2) of the five (5) injury crashes reported in the five-year analysis period occurred as a result of excessive speeds and drug or alcohol impairment. No other significant trends were noted among the injury crashes. **Figure 17** illustrates the crash locations by severity.

Figure 17: Crash Locations by Severity

6.3.2 CRASH TYPES

The most common crash type reported in the five-year analysis period was off-road crashes, which accounted for 9 of 21 crashes within the study area. Three (3) of the recorded crashes were angle crashes, and two (2) each were bicycle, left-turn, rear-end, and sideswipe crashes. One recorded crash involved a vehicle backing into a driveway and being struck by a passing vehicle. **Figure 18** illustrates crash locations by crash type and year.

One of the bicycle crashes occurred on February 28, 2018 under daylight conditions when a westbound vehicle attempted to pass a motorized bicycle on Mooney Road NE on the northern end of the Kenwood Neighborhood. The motorized bicycle was struck by the passing vehicle when the bicyclist attempted to turn left into a driveway. The bicyclist suffered non-incapacitating injuries in the crash.

The other bicycle crash occurred on September 1, 2020 under daylight conditions when a westbound vehicle on Eagle Street NE struck a northbound bicycle on Powell Drive NE. There were no injuries reported as a result of the crash.

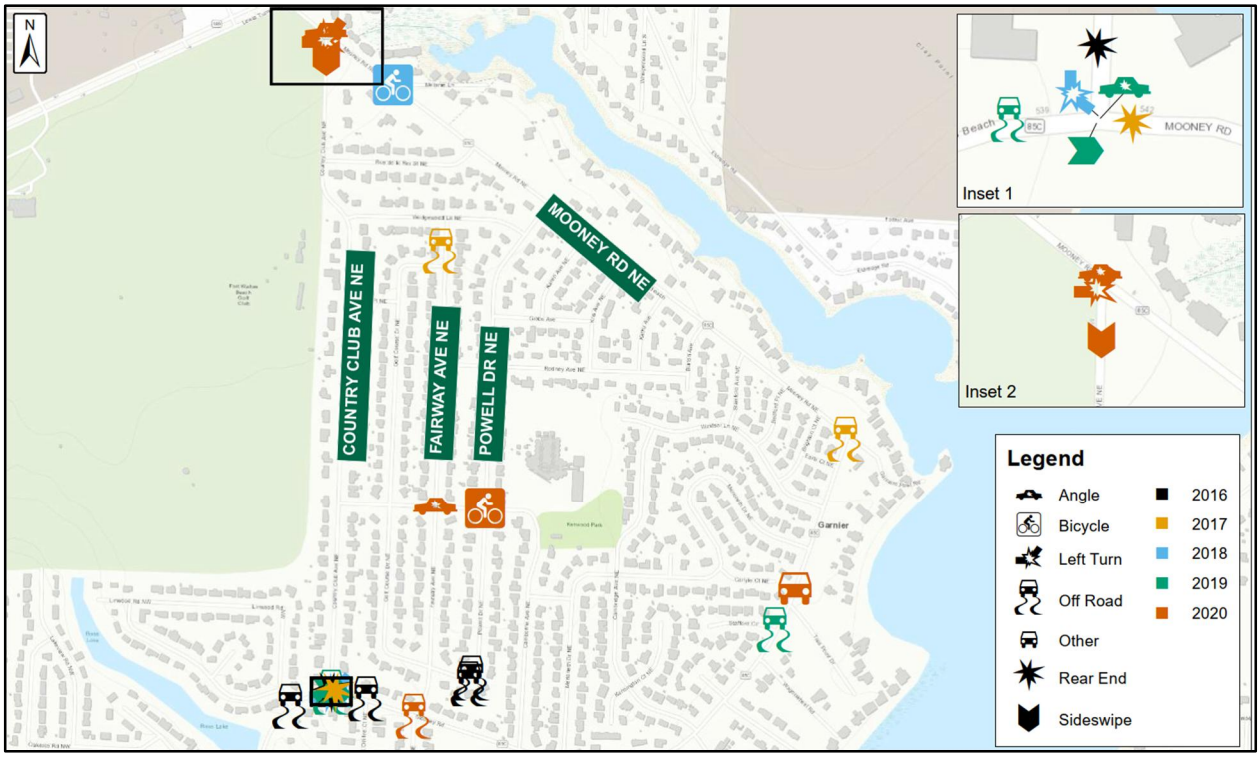

Figure 18: Crash Locations by Year and Type

6.3.3 CONTRIBUTING FACTORS

Contributing factors to crashes in the Kenwood Neighborhood were closely analyzed to identify potential trends susceptible to correction. Of the 21 crashes recorded in the 5-year analysis period, at least 5 were attributed to speeding. Three (3) of the five (5) speed-related crashes resulted in one or more injuries. Consistent with the vehicular speed data collected on Mooney Road NE at the southern end of the Kenwood Neighborhood, several of the speed-related crashes were reported on Mooney Road NE at or near the intersection with County Club Avenue NE. **Figure 19** illustrates the locations of speed-related crashes.

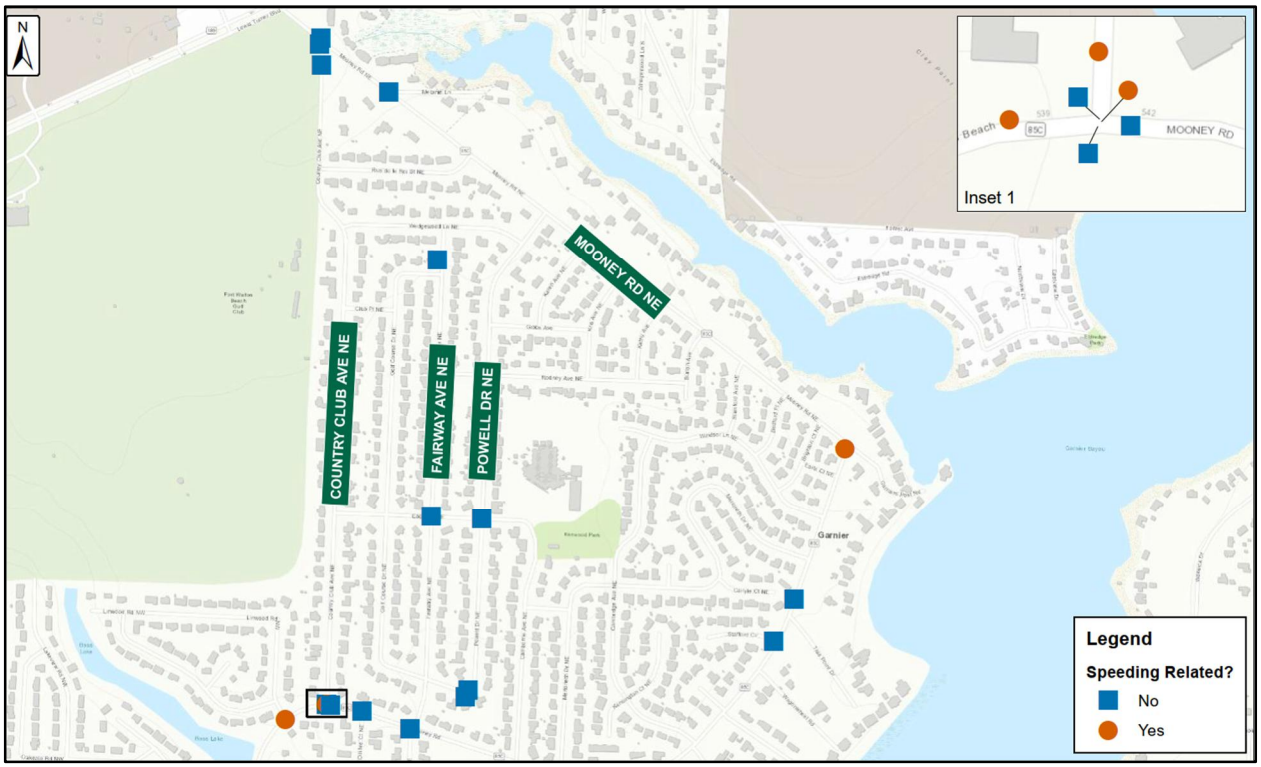

Figure 19: Speed-Related Crash Locations

6.4 ORIGIN-DESTINATION ANALYSIS

The origin-destination data collected for this Traffic Study, as outlined in Section 5.3, were utilized to understand travel patterns in and around the Kenwood Neighborhood. In particular, the origin-destination data was evaluated to determine the percentage of project trips attributed to cut-through traffic traveling between SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard) and to analyze the routes that cut-through traffic most commonly utilized to travel through the neighborhood. The Bluetooth sensor locations utilized to collect origin-destination data are illustrated in **Figure 13**, and are denoted as S1, S2, etc. herein.

6.4.1 MOST COMMON TRIP ROUTES

Based on the origin-destination data collected for this Traffic Study, the two most common trips within the study area were the northbound trip from S1 (Mooney Road NE south) to S4 (Mooney Road NE north) and the reverse trip from S4 (Mooney Road NE north) to S1 (Mooney Road NE south), which accounted for 20.3% of recorded trips and 15.0% of recorded trips, respectively. Combined, these results indicate that approximately 35.3% of traffic measured within the Kenwood Neighborhood could be attributed to cut-through traffic. **Figure 20** illustrates the most common trips recorded within the study area.

Figure 20: Most Common Origin-Destination Trips

6.4.2 NORTHBOUND CUT-THROUGH ROUTE SELECTION

The northbound cut-through trips from S1 to S4 were reviewed to better understand which routes the majority of trips utilized as they traveled through the Kenwood Neighborhood. **Figure 21** illustrates the "route selection" for the northbound trips that traveled between S1 and S4. Note that the percentages do not sum to 100% as some trips were not recorded at S2, S5, S6, or S7 between the times they were recorded at the southern and northern limits.

The Bluetooth detection sensors do not capture every device that passes, so these percentages should be compared to one another, not necessarily taken as a percentage of all trips utilizing that route. In other words, the 41.3% of northbound trips detected at S2 is approximately 7 times the 6.0% of northbound trips detected passing through S5, so it can be assumed that northbound cut-through traffic is approximately 7 times as likely to utilize Country Club Avenue NE as it is to utilize Mooney Road NE to travel around the Kenwood Neighborhood. Northbound cut-through traffic is approximately 19 times more likely to utilize Country Club Avenue NE than it is to utilize Fairway Avenue NE.

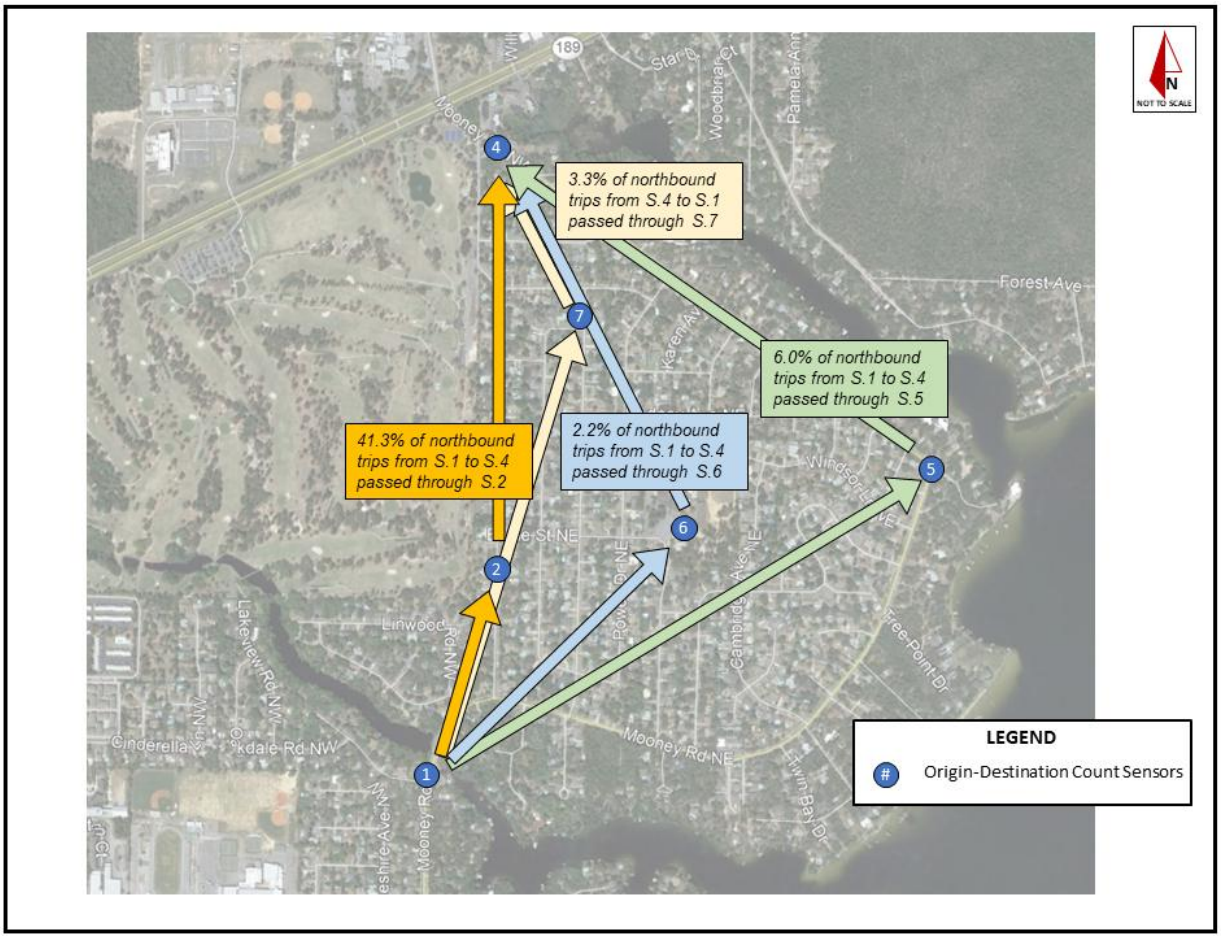

Figure 21: Northbound Cut-Through Route Selection

6.4.3 SOUTHBOUND CUT-THROUGH ROUTE SELECTION

The southbound cut-through trips from S4 to S1 were reviewed to better understand which routes the majority of trips utilized as they traveled through the Kenwood Neighborhood. **Figure 22** illustrates the "route selection" for the southbound trips that traveled between S4 and S1. In the case of southbound cut-through traffic, drivers are approximately 4 times as likely to utilize Country Club Avenue NE as they are to utilize Mooney Road NE to travel around the Kenwood Neighborhood. Southbound cut-through traffic is approximately 20 times more likely to utilize Country Club Avenue NE than it is to utilize Fairway Avenue NE.

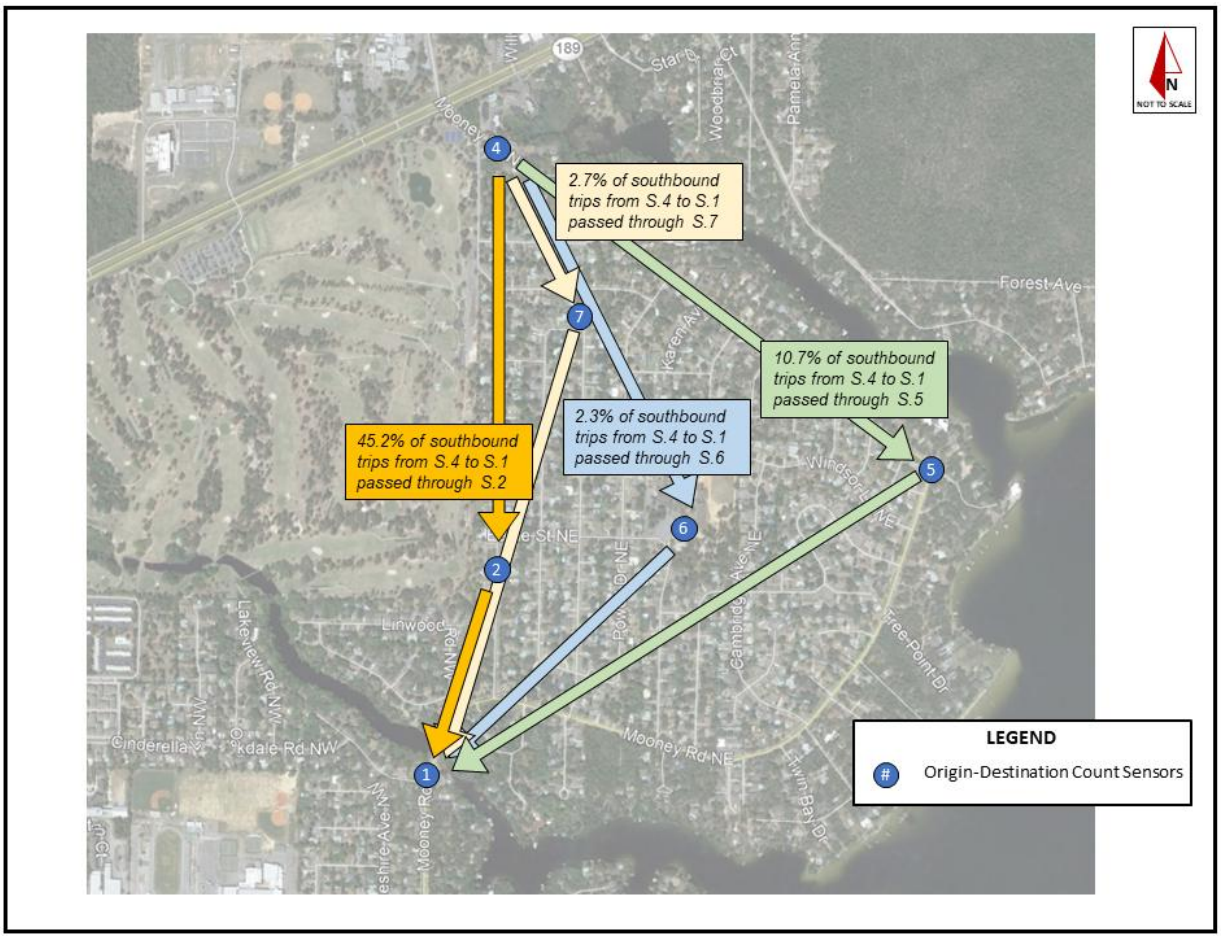

Figure 22: Southbound Cut-Through Route Selection

6.4.4 KENWOOD ELEMENTARY SCHOOL TRIPS

Origin-destination data was collected at Kenwood Elementary School (S6) in order to assess the origins and destinations of trips traveling to and from the school during the analysis period. Based on the trips recorded in the origin-destination data collection, approximately twice as many Kenwood Elementary School trips travel to and from the south than travel to and from the north. **Figure 23** illustrates the distribution of trips to and from S6 during the data collection period. The overall percentage of trips observed originating from or ending at S1 and S4 indicates that approximately 19% of entering trips and 24% of exiting trips recorded began and ended within the Kenwood Neighborhood.

Figure 23: Kenwood Elementary School Origins and Destinations

6.4.5 COUNTRY CLUB AVENUE NE AND MOONEY ROAD NE

The origin-destination data was reviewed to estimate what portion of traffic at certain points within the study area was attributable to cut-through traffic that started and ended outside of the Kenwood Neighborhood. **Figure 24** illustrates the results of the analysis. As noted in **Figure 24**, more than 60% of trips recorded passing S2 on Country Club Avenue NE started and ended outside of the Kenwood Neighborhood, meaning they started at S1 and ended at S4 or the reverse. Of the trips recorded passing S5 at the eastern connection intersection of Mooney Road NE with Mooney Road NE, approximately 43% started and ended outside of the Kenwood Neighborhood. Of the trips recorded passing S7 on Fairway Avenue NE, approximately 20% started and ended outside of the Kenwood Neighborhood.

Although there is not a technical threshold for an acceptable level of cut-through traffic, it is evident that the majority of traffic along Country Club Avenue NE is attributable to cut-through traffic, whereas less than a quarter of traffic on Fairway Avenue NE is. Measures intended to deter cut-through traffic should thus be focused on Country Club Avenue NE.

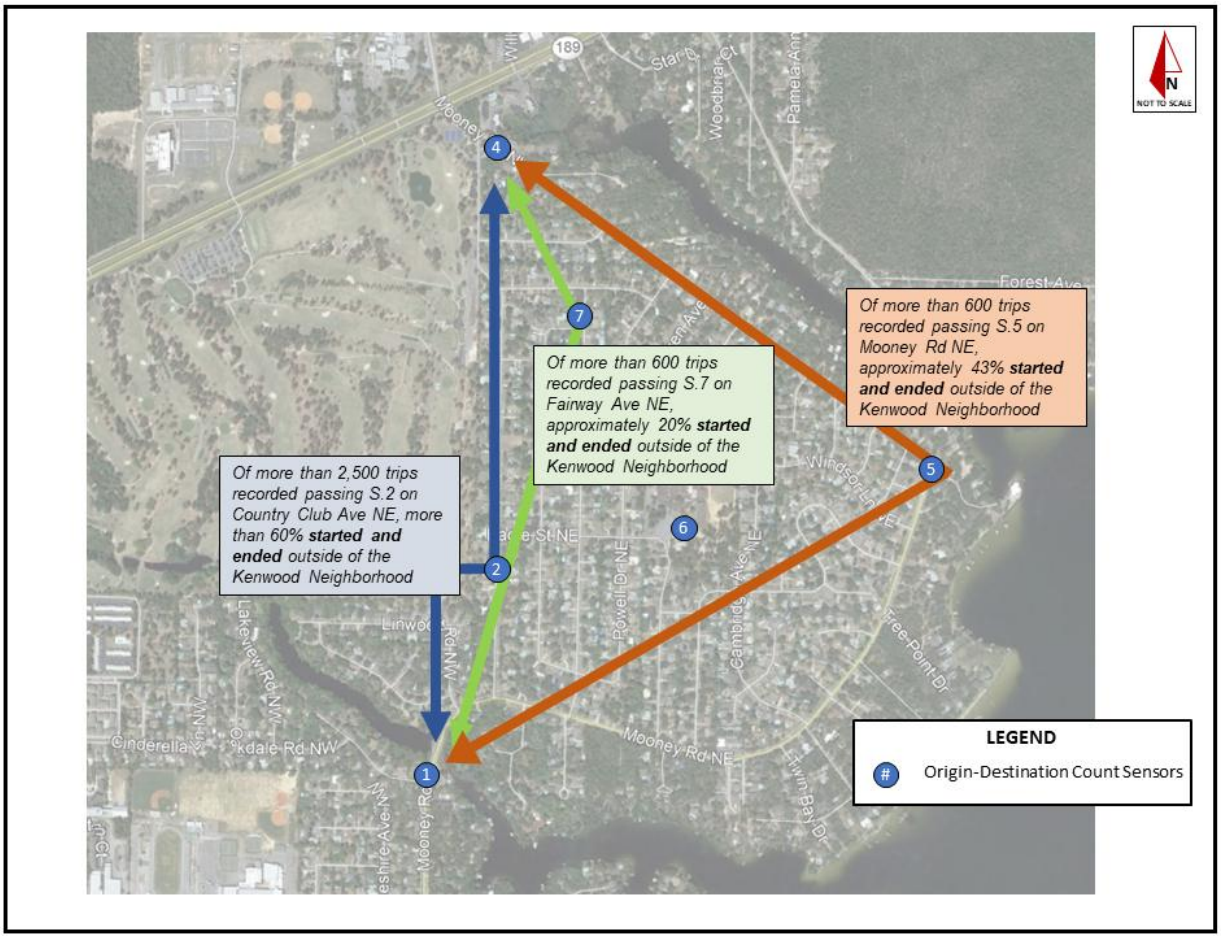

Figure 24: Country Club Avenue NE and Mooney Road NE Trips

6.4.6 OVERALL ORIGIN-DESTINATION CONCLUSIONS

Overall, the origin-destination data confirms what the residents of the Kenwood Neighborhood have long acknowledged, that Country Club Avenue NE is heavily utilized by cut-through traffic. The most common trips recorded within the study area originated from and were destined for locations outside of the Kenwood Neighborhood, and more than half of all trips recorded on Country Club Avenue NE started and ended outside of the Kenwood Neighborhood. The origin-destination data indicates that Country Club Avenue NE is utilized by cut-through traffic at a much higher rate than Mooney Road NE (or any other route through the neighborhood, for that matter), particularly in the northbound direction.

6.5 SCHOOL ZONE ANALYSIS

Traffic to and from Kenwood Elementary School has an inevitable impact on the surrounding roadway network. As part of this Traffic Study, the existing school zone delineation and signage were reviewed for conformance with industry standards, and the school pick-up and drop-off queues were assessed.

6.5.1 SIGNAGE

There is existing school zone signage along Eagle Street NE/Camborne Avenue NE from Powell Drive NE to Covington Place, Powell Drive NE at the intersection with Eagle Street NE, Mooney Road NE at the intersection with Fairway Avenue NE, and Country Club Avenue NE at the intersection with Eagle Street NE. **Figure 25** illustrates the existing school zone signage and pavement markings in the vicinity of Kenwood Elementary School. As illustrated in **Figure 25**, for the most part the school zone areas are fragmented and limited to areas immediately around certain intersections where school-aged pedestrians may be expected to cross a roadway.

The recommended limits of school zones are not clearly defined in the FDOT *Speed Zoning for Highways, Roads and Streets in Florida* (*Speed Zoning Manual*). However, it is noted that the extents of school zones should be minimized to encourage compliance; the longer a vehicle is traveling through a school zone, the less likely they are to remain at the advisory speed. The existing school zone markings on Country Club Avenue NE near Eagle Street NE and on Mooney Road NE near Fairway Avenue NE are not within the immediate vicinity of Kenwood Elementary School and are therefore not consistent with the FDOT *Speed Zoning Manual*.

On Mooney Road NE at the intersection with Fairway Avenue NE, there is a school zone speed limit posted as well as signage indicating a crosswalk for pedestrians to cross Mooney Road NE. In conjunction with recent roadwork through the area, Mooney Road NE was resurfaced through the intersection and the crosswalk markings were not re-applied. Although this school zone is recommended for removal based on its distance from Kenwood Elementary School, it is recommended that high-visibility crosswalk pavement markings be re-applied and the crosswalk signage be updated to increase driver awareness of potential pedestrians at this crosswalk.

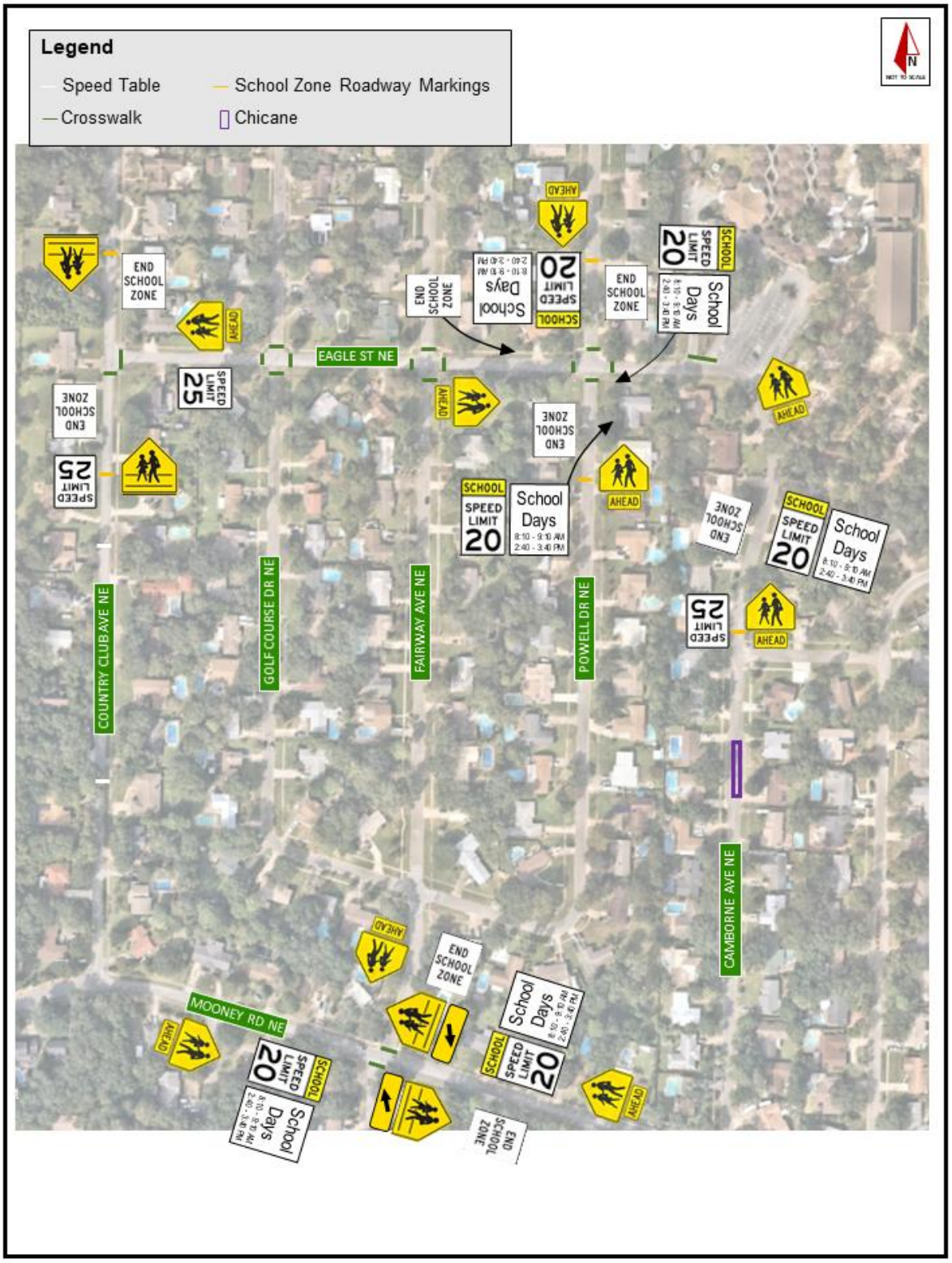

Figure 25: Existing School Zone Signage and Pavement Markings

The school zone signage was generally observed to be outdated and not in compliance with the latest FDOT *Speed Zoning Manual* nor the latest *Manual on Uniform Traffic Control Devices* (MUTCD). The latest recommendations for school zone signage are to include flashing beacons to increase driver awareness of reduced speed limits during the morning drop-off and afternoon pick-up periods. Additionally, crosswalks within the school zones (and elsewhere within the Kenwood Neighborhood) would benefit from supplementary In-Street Pedestrian Crossing signs (MUTCD R1-6a) with supplemental SCHOOL plaques (MUTCD S4-3P), illustrated in **Figure 26**.

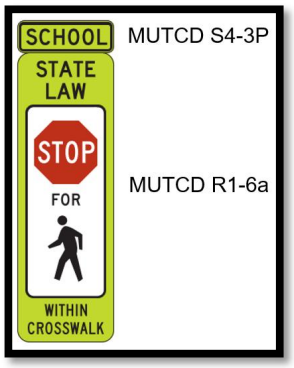

Figure 26: Recommended School Zone Signage

6.5.2 Pick-Up/Drop-Off Queuing

Drop-off operations at Kenwood Elementary School are fairly efficient, based on the turning movement counts collected at the school driveways in October 2021. Although more vehicles are entering the drop-off driveway during the AM peak hour than during the afternoon peak hour, they are spread out over a longer time period, and thus do not result in lengthy queues as have been observed during the afternoon pick-up period.

Queued vehicles on Camborne Avenue NE during afternoon pick-up from Kenwood Elementary School were cited in Petition 3 (Section 3.11) and Study 10 (Section 3.13) as a significant concern of Kenwood residents. The queued school pick-up vehicles on Camborne Avenue NE were also an issue raised at the Community Workshop held in August 2021.

Petition 3 noted queued vehicles were commonly observed blocking residential driveways along Camborne Avenue NE, on occasion leading to conflicts between residents and parents waiting for afternoon pick-up. City Staff coordinated with Kenwood Elementary School faculty to issue reminders to parents that they should not block driveways while queued for afternoon pick-up.

As illustrated in **Figure 12**, only 63 vehicles were observed entering the eastern school driveway during the afternoon peak period around the last bell time (3:10 PM), but nearly 60% of the traffic occurred in one 15-minute period from 3:15 PM to 3:30 PM. If all of the ingress vehicles during that 15-minute period (37 vehicles) queued along Camborne Avenue NE, they would extend approximately 925 feet south of the school driveway (assuming 25 feet per vehicle, not accounting for gaps at residential driveways). Queues that long would extend past Covington Place and even beyond the chicane in Camborne Avenue NE.

Additionally, input received during the Community Workshop suggests that many students leave the Kenwood Elementary School campus to get picked up on one of the immediately surrounding roadways, so that their parents do not have to wait in the pickup line traveling through the school parking lot. Cambridge Avenue NE, east of the school, was identified as one location where some parents waited at pick-up to avoid the longer queues near the school.

7.0 POTENTIAL IMPROVEMENTS

Based on the prior studies reviewed in Section 3.0, the public participation outlined in Section 4.0, the data collection summarized in Section 5.0, and the traffic analysis completed in Section 6.0, a menu of improvement alternatives has been developed for consideration by the City of Fort Walton Beach to address existing issues and concerns in the Kenwood Neighborhood. The improvements are sorted into three categories of varying timeframe and cost.

7.1 Short-Term Improvements

Short-term improvement alternatives are generally low-cost and can be completed without further study. Funding for these improvements would most likely come from the City Engineer's Streets Budget within the General Fund in the current year or the year following.

7.1.1 Remove School Zones from Country Club Avenue NE and Mooney Road NE

The existing school zone signing and pavement markings on Country Club Avenue NE near the intersection with Eagle Street NE and on Mooney Road NE near the intersection with Fairway Avenue NE should be removed. These school zones are not in the immediate vicinity of Kenwood Elementary School and are therefore not consistent with the FDOT *Speed Zoning Manual*. Standard crosswalk signage and pavement markings may be installed at these locations instead.

7.1.2 Pavement Markings at Mooney Road NE and Fairway Avenue NE

The marked crosswalk on Mooney Road NE at Fairway Avenue NE was not re-applied after recent construction on Mooney Road NE, leaving a condition in which signage indicates the presence of a crosswalk even though it is no longer marked. It is recommended that a high-visibility crosswalk be installed at the former marked crosswalk location, consistent with the existing signage.

7.1.3 In-Street Pedestrian Crossing Signage

Existing crosswalks throughout the Kenwood Neighborhood, and in particular within the areas marked as school zones in the vicinity of Kenwood Elementary School, would benefit from the addition of high-visibility In-Street Pedestrian Crossing signs (MUTCD R1-6a), with a supplemental SCHOOL plaque (MUTCD S4-3P) where appropriate.

7.1.4 Cut-Through Traffic Guide Sign

The origin-destination data collected for this study confirmed that much of the traffic along Country Club Avenue NE is cut-through traffic that starts and ends outside of the Kenwood Neighborhood. A short-term, low-cost improvement to potentially reduce cut-through traffic would be to install signage at the northern and southern intersections of Mooney Road NE with Country Club Avenue NE, with a message stating 'THRU TRAFFIC – USE MOONEY ROAD NE.' Field review of the travel time between the northern terminus of Country Club Avenue NE and the southern terminus of Country Club Avenue NE determined that the more circuitous route via Mooney Road NE is only about 50 seconds longer than the direct route along Country Club Avenue NE. Although the signage would not be expected to re-route all cut-through traffic, it may be effective in re-routing a portion of the cut-through traffic around the Kenwood Neighborhood instead of through it.

7.1.5 Rumble Strip Approaches at Stop Signs

Several residents noted issues on Country Club Avenue NE with drivers running stop signs. There were also multiple crashes involving vehicles running stop signs. To improve compliance, rumble strips could be installed on stop-controlled approaches of concern.

7.1.6 Enforcement During School Pick-up

As noted in Study 10 (Section 3.13), one way to prevent queueing pick-up vehicles from blocking residential driveways is to increase the presence of law enforcement reminding parents not to block driveways. Since the queues are limited to a small window of time each weekday, an officer would only need to drive down Camborne Avenue NE for 15 to 30 minutes a few times a week to improve this condition and reduce the occurrence of conflicts with residents on Camborne Avenue NE who need to enter or exit their driveways during the afternoon peak period. Additionally, if queues continue to be an issue along Camborne Avenue NE, a law enforcement officer could facilitate ingress traffic from the west so as to distribute the queues in both directions from the school driveways, instead of requiring ingress from the south along Camborne Avenue NE.

7.1.7 Double Yellow Center Lines

Several crashes recorded from 2016 through 2020 involved vehicles attempting to pass another vehicle on the local undivided streets within the Kenwood Neighborhood. Aggressive drivers may assume that if there are no double yellow centerlines prohibiting them from passing a slower vehicle, they are permitted to do so. Adding double yellow centerlines to segments of Mooney Road NE and Country Club Avenue NE that are not currently striped would improve safety for all road users.

7.2 Mid-Term Improvements

Mid-term improvement alternatives are more costly than short-term improvement alternatives but may still be implemented without further study. Funding for these alternatives may take longer to acquire or may require approval of the City Council, as they may exceed annual operating budgets.

7.2.1 Install Speed Feedback Signs

Speed feedback signs can be an effective means to reduce travel speeds on roadways where the context of the roadway itself has been ineffective in maintaining the posted speed limit. Given the crash history near the intersection of Mooney Road NE and Country Club Avenue NE at the southern end of the Kenwood Neighborhood, a speed feedback sign is recommended for northbound/eastbound traffic on Mooney Road NE entering the neighborhood.

7.2.2 Raised Crosswalks

Raised crosswalks were the second most commonly favored traffic calming technique at the Community Workshop held in August 2021. Raised crosswalks are an effective tool both for traffic calming and for improving pedestrian safety. Raised crosswalks could be considered at such locations as: Country Club Avenue NE at Eagle Street NE, Mooney Road NE at Fairway Avenue NE, Country Club Avenue NE at Rue de le Roi Street NE.

7.2.3 Update to the Residential Traffic Calming Handbook

The Residential Traffic Calming Handbook, reviewed in Section 3.14, was last updated in July 2011. Since 2011, methodologies for gathering public input and collecting data have updated, and several new mechanisms have been devised for traffic calming on neighborhood streets. It may be beneficial to conduct an update to the Residential Traffic Calming Handbook to update the guidance and keep the Handbook relevant.

7.2.4 Update All School Zone Signage

The school zone signage throughout the Kenwood Neighborhood is outdated, faded, and not in compliance with the latest guidance provided in the FDOT *Speed Zoning Manual* nor the latest *MUTCD*. Speed zone signs should include flashing beacons indicating when the school zone speed limits are effective, and all signs should feature the fluorescent yellow-green school zone sign panel color.

7.2.5 Off-Road Crash Mitigation

Off-road crashes were the most commonly reported crash type within the study area during the five-year analysis period from 2016 to 2020. Several off-road crashes were reported on Mooney Road NE at the southern limit of the study area and on Powell Drive NE near its southern terminus with Fairway Avenue NE. Potential mitigation techniques that could be considered to reduce the incidence of off-road crashes include raised pavement markers, edge line rumble strips, and more vertical curbing.

7.2.6 LED Lights for Stop Signs

Several residents noted issues on Country Club Avenue NE with drivers running stop signs. There were also multiple crashes involving vehicles running stop signs. To improve compliance, stop signs with LED lights around the border could be installed on stop-controlled approaches of concern.

7.3 Long-Term Improvements

Long-term improvement alternatives are the most costly improvements that may require additional study before they can be implemented. Funding for these alternatives may be sought from FDOT or federal funds through grants or fund-matching programs in order to reduce the burden on the City budget.

7.3.1 Alternative North-South Route

The origin-destination data collected for this study confirmed that much of the traffic along Country Club Avenue NE is cut-through traffic that starts and ends outside of the Kenwood Neighborhood. A long-term, effective solution would be to provide an alternative north-south connection between SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard) that would allow drivers to travel between the two major arterials without ever entering the Kenwood Neighborhood. Such an alternative route has long been contemplated within the City, including consideration for the potential extension of Denton Boulevard northward through the Fort Walton Beach Golf Club.

Although the origin-destination data from this study clearly indicates a pattern of cut-through traffic that would likely use an alternative north-south corridor, a comprehensive traffic modeling and future conditions analysis should be conducted to determine the optimal alignment for the corridor and minimize impacts to the natural or human environment, to the extent feasible. Funding for an alternative north-south route could be sought through FDOT since the connection would serve as a critical connection between SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard).

7.3.2 Kenwood Elementary School Operational Analysis

The Kenwood Elementary School faculty who attended the August 2021 Community Workshop indicated that faculty and staff are overflowing the existing parking lot and utilizing an adjacent lot. In addition to the parking limitations, public comment and prior petitions made clear that queueing vehicles waiting for afternoon pick-up are causing conflicts with residents along Camborne Avenue NE and elsewhere in the vicinity of Kenwood Elementary School. An operational analysis should be conducted to understand the total parking needs of the school and determine if any of the adjacent properties can be re-purposed to accommodate the parking. The study should also include an analysis of the on-site queueing space available and determine if a more efficient layout in the parking lot could accommodate more of the vehicle queues on-site to reduce the number of vehicles idling on neighborhood roadways before the afternoon pick-up period.

7.3.3 Roundabout Traffic Control

The most highly rated traffic calming measure according to the attendees of the Community Workshop in August 2021 was a roundabout. A particular intersection was not identified on the traffic calming measures board, but several comments indicated a desire for a roundabout at the southern intersection of Mooney Road NE and Country Club Avenue NE. Due to the curve in Mooney Road NE west of the intersection and the bridge less than 700 feet south, there may be significant geometric and environmental constraints to constructing a roundabout at this intersection. Additionally, roundabouts require considerable right-of-way beyond that which is required for a stop-controlled intersection.

A roundabout (or mini roundabout) may be considered at the intersection of Country Club Avenue NE and Rue de le Roi Street NE to slow traffic, improve safety, and increase travel time along Country Club Avenue NE. A roundabout may also be considered at the intersection of Mooney Road NE and Mooney Road NE at the eastern end of the Kenwood Neighborhood to improve safety and operations over the existing all-way stop control. A mini roundabout may be considered at the intersection of Fairway Avenue NE and Eagle Street NE, where the existing two-way stop control has been noted as confusing to drivers and has resulted in minor crashes.

8.0 CONCLUSION AND RECOMMENDATIONS

8.1 PRELIMINARY RECOMMENDATIONS

Based on public input from the Community Workshop in August 2021 and the data collected in the Kenwood Neighborhood in October 2021, the following improvements are recommended for implementation:

Short-Term Improvements

- Remove school zone signing and pavement markings on Country Club Avenue NE
- Remove school zone signing and pavement markings on Mooney Road NE
- Re-paint crosswalk at the intersection of Mooney Road NE and Fairway Avenue NE
- Install a 'THRU TRAFFIC – USE MOONEY ROAD NE' sign at the northern and southern intersections of Mooney Road NE and Country Club Avenue NE
- Request law enforcement presence during school pick-up to prevent queued vehicles from blocking residential driveways on Camborne Avenue NE

Mid-Term Improvements

- Update school zone signage to include flashing beacons when school zone is active
- Install a speed feedback signs on Mooney Road NE at the southern end of the Kenwood Neighborhood

Long-Term Improvements

- Initiate a comprehensive areawide study to identify a potential north-south alternative route connecting SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard) outside of the Kenwood Neighborhood

8.2 COMMUNITY WRAP UP

A second community workshop was held on Wednesday, February 16, 2022 at 6:00 PM at the Fort Walton Beach Golf Club for the project team to share the findings of Kenwood Neighborhood Traffic Study and preliminary recommendations for improvements. Approximately 30 people attended the Community Workshop, including representatives from the City of Fort Walton Beach, Jenkins Engineering, and Kimley-Horn. A copy of the sign-in sheet is included in **Appendix B**.

Photo 2: Kenwood Neighborhood Traffic Study Community Wrap Up

City staff began by welcoming the attendees to the public meeting and outlining the intent of the Community Wrap Up. Representatives from Kimley-Horn elaborated on the data collection efforts, the results of the analyses, and the recommended improvements within the neighborhood. An exhibit was shared illustrating the locations recommended for the preliminary improvement options. A copy of the exhibit is shown in **Figure 27**.

Throughout the Community Wrap Up, attendees asked questions about how data was collected, how issues that were identified would be addressed, and when they could expect to see improvements implemented within the neighborhood to address those issues. City staff and the Kimley-Horn team discussed the phasing of the recommended improvements (short-term, mid-term, and long-term) and fielded questions about the effectiveness of the various improvements.

Many of the comments and concerns that were expressed were consistent with those shared during the August 2021 Community Workshop. Concerns that were not previously discussed during the August 2021 Community Workshop included:

- Travel speeds on Mooney Road NE on the northern end of the neighborhood
- Jurisdictional challenges between Fort Walton Beach Police and Okaloosa County Sheriff since part of the neighborhood is outside of Fort Walton Beach city limits
- Additional school pick-up parking on Fairway Avenue NE, Golf Course Drive NE, and Powell Drive NE
- Speed humps should be made taller/rougher/more effective on Country Club Avenue NE

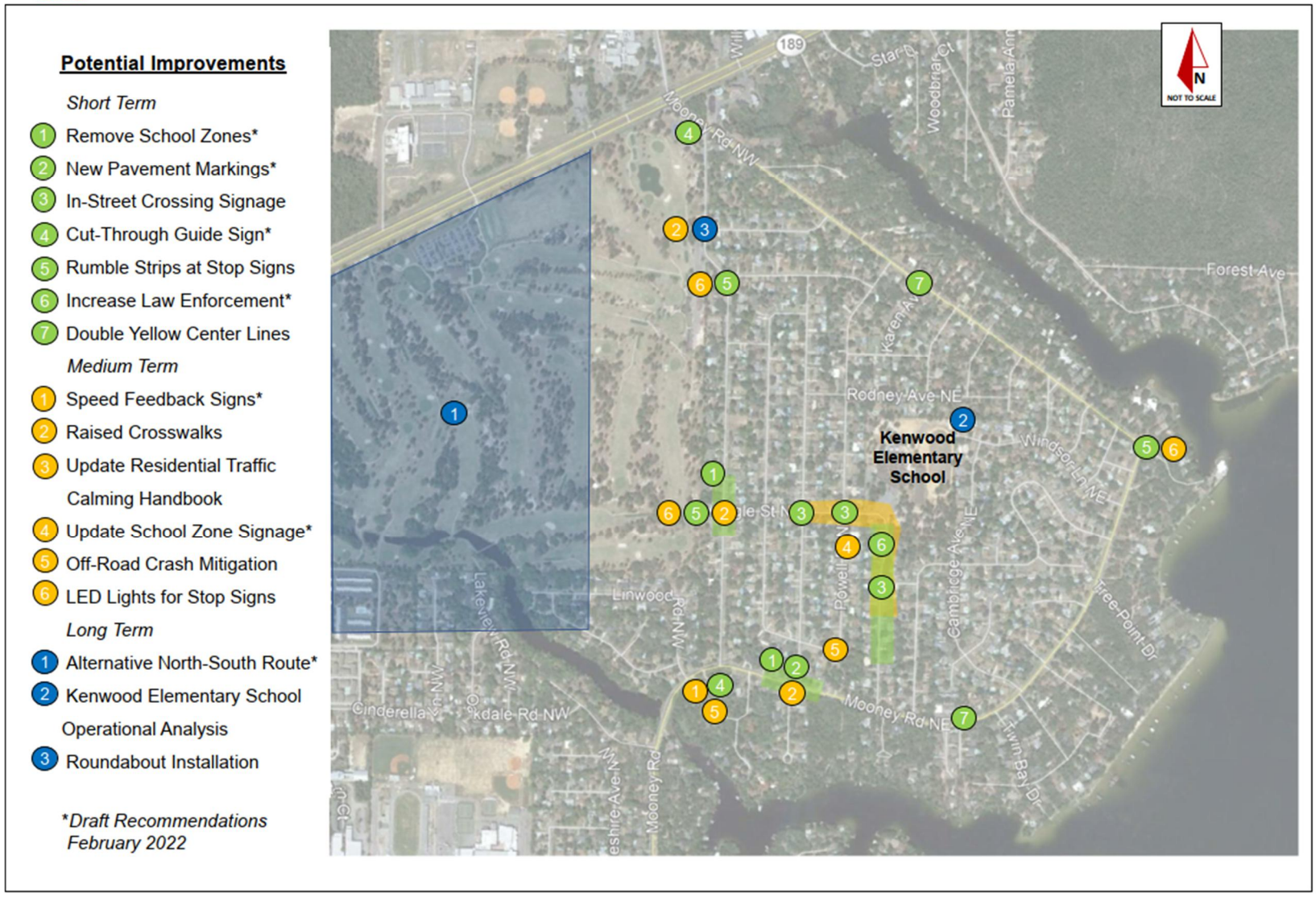

Figure 27: Preliminary Improvement Recommendations, Community Wrap Up Workshop

8.3 FINAL RECOMMENDATIONS

The preliminary recommendations in Section 8.1 were presented at the Community Wrap Up on February 16, 2022 and discussed with the attendees. Based on the feedback received at that meeting, it is recommended that all of those preliminary recommendations are implemented, as well as the following additional recommendations (new recommendations signified by an asterisk*):

Short-Term Improvements

- Coordinate with Okaloosa County Public Works on the portions of County roads within the study area where improvements are recommended*
  - Ensure concurrence between municipalities regarding the proposed improvements
- Remove school zone signing and pavement markings on Country Club Avenue NE
  - Improve compliance with school zone near Kenwood Elementary School
- Remove school zone signing and pavement markings on Mooney Road NE
  - Improve compliance with school zone near Kenwood Elementary School
- Re-paint crosswalk at the intersection of Mooney Road NE and Fairway Avenue NE
  - Improve safety for pedestrians and bicyclists
- Install a speed limit sign on the northern end of Mooney Road NE, south of Country Club Avenue NE*
  - Increase awareness of the posted speed limit for southbound vehicles from SR 189 (Lewis Turner Boulevard)
- Install a 'THRU TRAFFIC – USE MOONEY ROAD NE' sign at the northern and southern intersections of Mooney Road NE and Country Club Avenue NE
  - Encourage cut-through traffic to utilize Mooney Road NE rather than Country Club Avenue NE or Fairway Avenue NE
- Request law enforcement presence during school pick-up to prevent queued vehicles from blocking residential driveways on Camborne Avenue NE
  - Reduce conflict between residents and queued vehicles during school pick-up
- Recommend coordination between the Fort Walton Beach Police Department and the Okaloosa County Sheriff Department regarding cross-jurisdictional enforcement within the Kenwood Neighborhood*
  - Improve law enforcement's ability to patrol all parts of the Kenwood Neighborhood
- Install speed tables or raised crosswalks at the intersection of Fairway Avenue NE and Rodney Avenue NE*
  - Reduce travel speeds on Fairway Avenue NE north of Eagle Street
- Engage in discussions with Kenwood Elementary School and Okaloosa County School District staff on implementing short-term improvements for staff parking and school pick-up and drop-off*
  - Reduce the occurrence of queued vehicles on Camborne Avenue NE and other surrounding residential roadways during school pick-up and drop-off periods

- Periodically deploy portable speed feedback trailers within the Kenwood Neighborhood
  - Increase compliance with the posted speed limits and discourage cut-through traffic from utililzing residential roadways

Mid-Term Improvements

- Update school zone signage to include flashing beacons when school zone is active
  - Increase school zone speed limit compliance
- Install a speed feedback signs on Mooney Road NE at the southern end of the Kenwood Neighborhood
  - Reduce travel speeds and improve safety conditions at the southern intersection fo Country Club Avenue NE and Mooney Road NE

Long-Term Improvements

- Initiate a comprehensive areawide study to identify a potential north-south alternative route connecting SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard) outside of the Kenwood Neighborhood
  - Evaluate large-scale improvements to significantly reduce the occurrence of cut-through traffic utilizing Kenwood Neighborhood roadways to travel between SR 188 (Racetrack Road) and SR 189 (Lewis Turner Boulevard)