

Executive Summary

Calvin, Giordano & Associates, Inc. (CGA) was commissioned on May 8, 2012 by the Town of Surfside to complete a traffic study to assess existing and future traffic conditions throughout the Town. A Town-wide traffic analysis was performed to determine appropriate applications for traffic calming and traffic control measures. In addition to the traffic calming analysis, several signalized intersections along 96th Street, Harding Avenue, and Collins Avenue were evaluated to determine if modifications could improve the operational efficiency of the intersections. The signalized intersections analyzed for this traffic study include the following:

- 96th Street at 500 Block (Bal Harbour Shops)
- 96th Street at Byron Avenue
- 96th Street at Harding Avenue
- 96th Street at Collins Avenue
- 95th Street at Harding Avenue
- 95th Street at Collins Avenue
- 94th Street at Harding Avenue
- 94th Street at Collins Avenue

Turning movement traffic counts were collected during the AM (7:00-9:00) and PM (4:00-6:00) peak hours for seventeen intersections within the Town. Additionally, 24-hour bi-directional tube counts along with speed data were collected at ten locations throughout the Town. The traffic counts collected for this study are depicted in Figure 2.1. The traffic counts were conducted on a typical Tuesday through Thursday between August 28, 2012 and September 6, 2012 and on Tuesday, October 30, 2012. The traffic counts were utilized to analyze existing and future traffic operations of the major intersections and to develop new and upgrade existing traffic calming locations.

A computer-based traffic simulation of the Town's current roadway network was developed using the nationally recognized VISSIM micro-simulation modeling software. The VISSIM model was calibrated to match existing traffic conditions based on field reviews and traffic data collected for the study intersections. This VISSIM model will enable the Town to efficiently analyze future traffic conditions including intersection and roadway alternatives. Examples of the benefits of the VISSIM model include determining the net impact of future developments such as the expansion of Bal Harbour Shops and for future traffic flow modifications such as

street closures. Additionally, the VISSIM model has an advanced 3D interface which allows for accurate visual representation of existing and future traffic conditions.

OPERATIONAL ANALYSIS

Level of Service (LOS) is a term used to describe the conditions of a roadway in relation to vehicle delay and traffic congestion. LOS are broken down with six LOS designations (LOS A – LOS F). LOS A represents the most ideal situation with minimal if any delay at all while LOS F represents the worst conditions with high vehicular delay. The Town Comprehensive Plan identifies the LOS thresholds for state roads as LOS E+20% and LOS D for local roads. 96th Street, Harding Avenue, and Collins Avenue are each considered state roads.

Existing Conditions

The operational analysis for the aforementioned major intersections along 96th Street, Harding Avenue, and Collins Avenue demonstrated that each of the study intersections were currently operating at an acceptable LOS during the AM and PM peak hours when evaluating the overall intersection delay. However, several of the study intersection approaches had high vehicular delays resulting in a LOS E or LOS F for the intersection approach and long vehicular queues extending to the upstream traffic signal. Due to the close proximity of the signalized intersections, the operations of each signal are greatly affected by the upstream and downstream traffic signals. It was observed that vehicle queues would occasionally extend to and past the upstream traffic signals on 96th Street.

Optimized Conditions

CGA evaluated several alternatives to determine if improvements could help reduce vehicle congestion in the Town. It was determined that the most cost effective alternatives included signal timing improvements at each of the study signalized intersections. The signal timing improvements showed a substantial benefit to the side streets of Byron Avenue, 95th Street, and 94th Street.

The Town has been proactive in the past regarding improving signal timing in the Town to benefit the residents of Surfside. The northbound approach on Byron Avenue at 96th Street has historically been very congested with high delays and vehicle queues during school days and times. However, the Town was able to mitigate much of the vehicle delay by bringing it to the County's attention and requesting an adjustment in signal timing. A comparison of the existing average delay and LOS for the existing conditions and the optimized conditions is shown in Table A.