



City Clerk
City of Key West
1300 White Street
Key West, Florida 33040

RE: RFQ 18-001: City of Key West General Traffic Engineering Services

Dear James,

Vision Engineering and Planning, LLC in association with Florida Keys Land Surveying and Coastal Risk Consulting is pleased to submit the following qualifications package in response to the City of Key West General Traffic Engineering Services RFQ. As the enclosed qualification package illustrates, the Vision team has the necessary depth and expertise to address all of the needs of the City of Key West. Vision celebrated its 10-year anniversary in 2017, illustrating our stability, and has developed a long client list throughout the Southeastern and Mid-Atlantic United States by providing high quality travel forecasting, traffic engineering, and traffic impact study services. We pride ourselves on approaching every project like we live in the impacted community, ensuring we truly "hear" the public and develop recommendations that safely address all modes of transportation and can be constructed in a context sensitive manner.

Vision staff have extensive experience working with regional travel demand models, traffic simulation models, and traffic signal controllers. The experience Vision staff have in FDOT District 6 is supplemented with experience conducting traffic studies throughout the Southeastern United States, including for Baltimore City, Howard, Charles, and Frederick Counties Maryland, District of Columbia, City of Aiken, SC, Fulton County, GA, Glynn County, GA, Birmingham Regional Planning Commission, and the City of Pahokee, FL. The experience gained from working with many agencies around the U.S provides Vision a broader perspective to the transportation challenges facing local governments like the City of Key West as well as a broader range of mitigation strategies to address the traffic impacts of future developments including mixed-use and transit oriented urban developments.

The project team that I assembled not only includes senior and principal level Traffic Engineers, travel forecasters, and CADD Designers, but also surveyors based in the Florida Keys and flood/environmental experts who will bring unique insight with regards to developing sustainable transportation improvements in Key West. All surveys and field inventories that are not traffic demand related will be conducted by Florida Keys Land Surveying under my direction as this will minimize costs to the city and provide the most responsive service. Coastal Risk Consulting was added to the team directly in response to the unique characteristics of Key West. Given the growing impacts of the urban built environment on flooding and stormwater runoff combined with the impacts of global warming, it is critical that transportation improvements are designed in the most environmentally sensitive fashion possible. Coastal Risk Consulting's unique experience in this area will be a value-added for the City, and would allow the

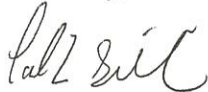
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Ft. Lauderdale, FL 33309
Ph: (407) 745-0644
www.visione-p.com

City of Key West to serve a model for other coastal cities in the U.S. and around the world with regards to sustainable design.

As the staff biographies illustrate, the team is both experienced and deep enough to respond to any requests the City would have throughout the duration of the contract; ensuring the city will receive a set of deliverables and recommendations that are accepted and embraced by the public, practical, and most importantly constructible as the Vision philosophy is to turn plans and visions into reality through practical, systematic, context sensitive planning and engineering.

The Vision Team is committed to providing the highest quality services in support of the City of Key West and has both the financial capacity to provide the services and measures of protection for the City against errors and omissions. Our past experience with on-call projects combined with the firm's low overhead as a small business ensures the city will receive the highest value and responsiveness on this contract. If you have any questions regarding this qualification package, feel free to contact me at pgilliam@vision-ep.com or 407-745-0644.

Sincerely,

A handwritten signature in cursive script, appearing to read "Paul Gilliam".

Paul Gilliam, PE, PTOE
President
Vision Engineering and Planning, LLC

RFQ 18-001

CITY OF KEY WEST GENERAL TRAFFIC ENGINEERING SERVICES

Proposal Submitted By:

VISION ENGINEERING & PLANNING





**FLORIDA KEYS
LAND SURVEYING**

19960 OVERSEAS HIGHWAY
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COASTAL RISK CONSULTING



FIRM OVERVIEW:**VISION ENGINEERING & PLANNING**

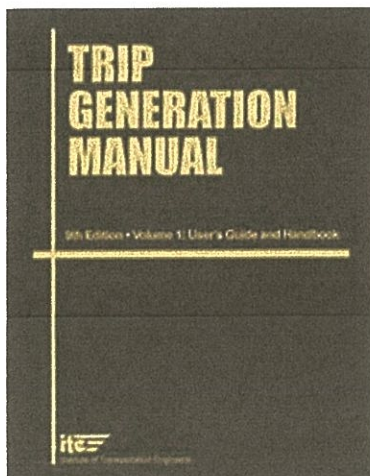
Vision specializes in multi-modal transportation studies and travel forecasting applications. Mr. Gilliam and his senior staff provide years of experience ranging from regional planning to construction, to help clients develop realistic, cost effective solutions to address traffic congestion while maintaining and/or improving vehicular and pedestrian safety. Vision is at the forefront of forecasting and planning for new trends and technologies including transit oriented and mixed-use developments, urban redevelopment, Smart Cities, Electric and Autonomous Vehicles, Bicycle Lanes, and Bus Rapid Transit.



the permitting process for new developments and transportation projects with local jurisdictions, state agencies, and Federal Highway Administration.

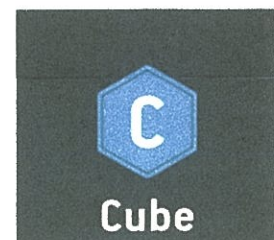
Vision has extensive experience in forecasting and evaluating multi-modal transportation networks and developing recommendations that are practical and context sensitive. We believe in a transparent approach to forecasting and traffic engineering that includes stakeholder involvement throughout the process and ensures project planning forecasts and traffic impact studies are well documented and vetted. This expedites

We will first successfully understand the problem and intended goal. We do not assume that we know the answers before we completely know the task at hand and related issues. We will carefully evaluate the task and devote the appropriate and best personnel for the completion of the task. We will interact regularly with our clients to provide the concepts and considerations that go into the recommended solution, being careful to obtain input from those who would operate and maintain the facility or respond to public inquiries.

VISION HAS USED BOTH CUBE FORECASTING SOFTWARE AND THE ITE TRIP GENERATION MANUAL TO CONDUCT TRAFFIC IMPACT ANALYSIS AND CORRIDOR STUDIES

established presence in South Florida having worked on a number of traffic studies in District 6 ranging from traffic impact studies for schools to preparing Traffic Information Reports for mixed-use developments. Vision has conducted numerous traffic impact studies using traditional Institute of Transportation Engineers (ITE) Trip Generational Manual methods and has recently developed a hybrid forecasting method that utilized both ITE and regional model forecasting procedures in support of a major mixed-use development. This approach is particularly useful in developing traffic forecasts in support of major mixed-use and urban developments. Vision staff also have extensive experience in data collection, including traffic counts, vehicle occupancy studies, pedestrian/bicycle counts, and truck occupancy

Vision was founded on a platform that minimizes company overhead while maximizing internal flexibility which has allowed us to provide highly responsive services to clients throughout the Southeastern and Mid-Atlantic United States. Vision has an



studies. Vision utilizes the latest technology for data collection to reduce costs and improve the quality of the data collected. Vision has an inventory of traffic cameras that would be utilized for field data collection, and a Senior Traffic Engineer would perform quality control on all traffic data. Vision also proposes a unique

approach to staffing for data collection. Based on past experience, we will utilize students from the Florida Keys Community College to collect traffic related data for all modes. This arrangement benefits everyone involved as the students gain valuable engineering experience while providing support to the project; and this arrangement adds to the local economy. Vision also has extensive experience in traffic capacity analysis

TRAFFIC COUNTS ARE THE MOST IMPORTANT INPUT INTO BOTH TRAFFIC CAPACITY/SIMULATION SOFTWARE AND INTERSECTION FORECASTS; VISION'S QUALITY CONTROL PROCESS ENSURES ACCURATE COUNTS ARE USED IN ALL ANALYSIS

using Synchro, traffic simulation and operational analysis using SimTraffic and VISSIM, traffic signal, traffic calming and signing and marking design using MicroStation, and traffic signal timing and field implementation including fine tuning and the development of evacuation signal timing plans. Vision's client list includes:

- ❖ St. Mary's College
- ❖ Lackland Air Force Base
- ❖ City of Brookhaven, Georgia
- ❖ Baltimore Metropolitan Council
- ❖ Fulton County Georgia
- ❖ Rappahannock-Rapidan Regional Commission
- ❖ Metropolitan Washington Council of Governments
- ❖ Charles County Maryland
- ❖ Howard County Maryland
- ❖ Richmond VA, MPO
- ❖ Maryland National Capital Park and Planning Commission
- ❖ Virginia Department of Transportation
- ❖ Birmingham Regional Planning Commission
- ❖ Glynn County Georgia
- ❖ DC Department of Transportation
- ❖ City of Aiken, SC
- ❖ Opelika AL, MPO
- ❖ City of Pahokee, FL
- ❖ Lansing MI, MPO
- ❖ Anne Arundel County, MD
- ❖ Montgomery County, MD
- ❖ Doral, FL
- ❖ Miami-Dade County, FL

FIRM OVERVIEW:

Florida Keys Land Surveying is an established land surveying firm serving Key West and the Florida Keys. The firm was established by Professional Surveyor and Mapper Eric Isaacs, and employs a team of the top land surveying professionals in the industry, with over 50 years of combined land surveying experience. Mr. Isaacs believes that Land Surveying clients in the Florida Keys deserve a firm that places a heavy emphasis on professionalism and customer service while being precise in what we do. As the firm continues to grow, Florida Keys Land Surveying has remained true to this ideal and strives to treat each client and their project with the respect that it deserves.

Land surveying is a professional occupation and is treated as such by Florida Keys Land Surveying. We believe that each project needs to be treated individually as opposed to the cookie cutter, assembly line approach that many other firms utilize. There is not a one size fits all approach to land surveying, especially in the Florida Keys. Trust that Florida Keys Land Surveying will look at your specific project needs to generate a scope of work that best fits your individual requirements. We will give you a realistic, accurate time line for completion as well as a true estimate of cost and we will strive hard to honor both.

Located in Sugarloaf Key, Florida Keys Land Surveying services are provided throughout the Florida Keys with an emphasis on the southern Keys from Big Pine Key to Key West. The professional, knowledgeable and fully equipped office staff, field crews and Auto-CAD draftsman strive to make the experience with Florida Keys Land Surveying as informative and enjoyable as possible. The surveying process starts with our expert field crews utilizing their knowledge along with the latest technology to complete the field work. Once the field work is completed, the data is returned to the office where it is analyzed with land development software. Once the data has been analyzed, all surveys are professionally drafted using the latest Auto-CAD software. The entire process, from start to finish, is designed to ensure that the survey project is completed with the highest degree of quality and accuracy. Accuracy is critical in the development of base plans that will be used for traffic signal and traffic calming designs, bicycle/pedestrian improvement designs, and intersection designs, as all improvements need to consider the grade and elevation impacts with respect to stormwater drainage and runoff. Some notable projects include:

- ❖ Staking and AsBuilt surveys for new sidewalk improvements in Key West (Atlantic Boulevard, Duck Avenue, Leon Street, Virginia Street, College Road)
- ❖ Staking and AsBuilt survey for reconstruction of Flagler Avenue in Key West
- ❖ Elevation survey at N.A.S.-Peary Court
- ❖ Hydrological elevation data over entire island of Boca Chica Key for engineering design of water flow
- ❖ Staking Florida Keys Overseas Heritage Trail (MM5.2-MM11.0, MM14.9-MM15.7, took over MM16.5-MM25.5)
- ❖ Florida Keys Land Surveying is currently contracted with the City of Key West to provide ongoing surveying solutions.

- ❖ Mapping of wetlands and environmentally sensitive areas in lower keys, including out islands off the coast of the Florida Keys.

FIRM OVERVIEW:

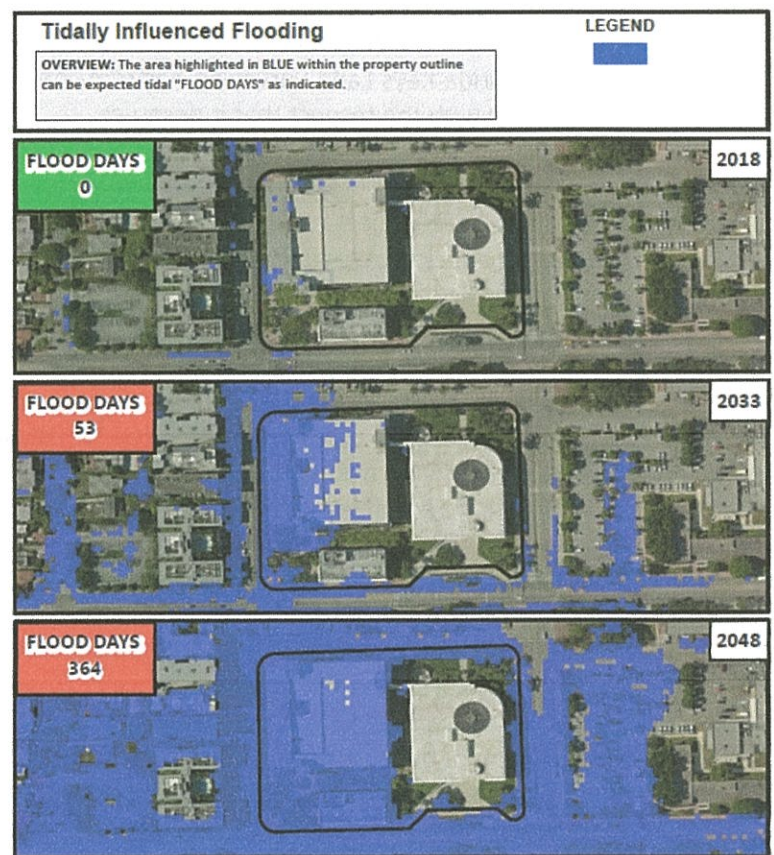


Coastal Risk Consulting, LLC (CRC) is a science-based company focused on assisting communities, businesses, and governments to quantify and adapt to current and future climate impacts. CRC's highly skilled team not only specializes in sea level rise (SLR), coastal flooding and storm surge modeling, but is also qualified to conduct climate vulnerability and adaptation studies for governments at the local, regional and state levels.

CRC's scientists are world-renowned experts in climate risk and SLR vulnerability and adaptation. Members of the CRC team have been directly involved in the pioneering work completed for the Southeast Florida Regional Climate Compact, given their expertise in climate mitigation and resilience building in the region. CRC is poised to respond to government and community needs at all levels and can be relied upon to serve as a bridge, bringing together diverse stakeholders and linking public and private sector's interests for capacity and resilience building. In addition, CRC was recently awarded a grant from the Coastal Partnership Initiative, a funding opportunity provided by National Oceanic and Atmospheric Administration (NOAA) and Florida Sea Grant to complete a five-month comprehensive SLR Vulnerability and Adaptation Assessment for the Village of Key Biscayne, Florida. By assimilating high-resolution Light Detection and Ranging (LiDAR) elevation data sets with SLR projections, CRC is the first company to provide individuals throughout the U.S. with a state-of-the-art flood risk assessment tool online. The FIRST Score™ screening assessment and in-depth Coastal Risk Rapid Assessment™ provide analyses of tidal flooding, SLR, hurricane storm surge and heavy rainfall at the parcel level over the next 30 years. CRC serves a diverse client base and has identified the climate vulnerability for historic properties, nuclear power plants, and the Parris Island military airbase (Parris Island, SC), to name a few.

What distinguishes CRC is its holistic and multi-disciplinary "dream team" of experts, which together possess the capabilities needed to provide clients with accurate data and reliable solutions to address today's climate change challenges.

The team includes experts in engineering, architecture, geospatial analysis, planning, meteorology, natural systems, regulatory and legal changes, and public health. CRC personnel are leaders in their fields and have



worked with government affiliates at national, state, regional and local levels for years, and have also applied their expertise internationally. CRC was added to the project team specifically to address the unique characteristics of Key West. While sound traffic analysis and engineering judgement is critical in developing concepts that will improve mobility and safety in the city, it is important to begin considering the impacts of transportation improvements on the environment and vice versa. Questions such as “what happens during a flood event if we widen the road?” can be answered by CRC, giving the City a unique resource, and the opportunity to pioneer traffic engineering analysis and the development of recommendations in coastal locations that are subject to storm surge and future global warming impacts.

KEY STAFF QUALIFICATIONS



Paul Gilliam, PE, PTOE is the President of Vision and has 24 years of experience performing and managing construction engineering, roadway and rail transit design, traffic engineering, and transportation planning projects in over a dozen states for a variety of public and private sector clients. Mr. Gilliam is an expert in Travel Demand Forecasting; particularly the interaction between Traffic Simulation and Travel Demand Modeling. Mr. Gilliam has extensive experience in highway and transit forecasting, Complete Streets studies, bicycle and pedestrian plans, intersection safety studies, traffic signal timing, capacity analysis, and Traffic Impact Studies. Mr. Gilliam is also involved in cutting edge research and applications of Dynamic Traffic

Assignment (DTA) models and Regional ITS Planning.



Sunil Gyawali, PhD is a Transportation Engineer at Vision Engineering and Planning with more than 10 years of experience in transportation engineering and research and development of transportation engineering projects. His experience ranges from traffic operations, traffic safety, and transportation planning to transportation infrastructure design/construction. Mr. Gyawali has experience in intersection and corridor safety/operations studies, traffic mobility studies, signal warrant studies, traffic signal operations, traffic impact studies, parking studies, project development and environment study and System Interchange Modification Reports.



Joe Ojeda is a Senior Modeler at Vision who specializes in computer applications of transportation planning and transportation engineering procedures, particularly travel demand modeling. He has more than 25 years of experience in the development of zonal, network and model input files; preparation and setup of scripts and batch files; execution of transportation planning models; and post-processing of model outputs. He has extensive experience in several microcomputer-based transportation models, including TP+, MINUTP, TRANPLAN, and SYSTEM II. He has experience in applying

MINUTP-based models and SYSTEM II-based models for numerous Northern Virginia projects, the Southeast Expressway in the Norfolk-Virginia Beach area, Prince George’s County, Maryland, the FSUTMS Model in Orlando, Florida, and MINUTP-based models in New Jersey and Vermont. Mr. Ojeda is highly skilled in the use and applications of graphics packages including ArcGIS, VIPER and SYSTEM II’s GEDIT. Mr. Ojeda is also experienced in the use of AUTOCAD, including quality control testing and data entry functions, and he is familiar with a variety of statistical analysis programs.

Wyvern Budram provides Vision with over 30 years of ITS and traffic operations experience from project management to overseeing staff involved in technical work and field activities. As manager of Traffic

Operations at Fulton County, Mr. Budram was instrumental in the design and construction of the Fulton County Traffic Management Center, including the development of the Fulton County ITS Architecture which included center to center communications with the Georgia Department of Transportation Traffic Management Center. Mr. Budram has extensive hands-on experience with a variety of traffic signal controllers, fine-tuning traffic signal timing plans in the field based on field conditions, and has utilized both fiber-optic and spread spectrum for signal communications.



Hilary Stevens is a geologist and environmental scientist with extensive experience in coastal resource management and a particular affinity for island communities. She serves as a member of the science team at Coastal Risk Consulting as well as the company liaison in Washington, DC. Prior to joining CRC, she worked at the Coastal Resources Center at the University of Rhode Island, where she developed climate change adaptation programs for coastal communities in West Africa and Southeast Asia. She has also worked on coastal resource management in Saipan, Northern Mariana Islands, and served as a Peace Corps volunteer in the Philippines.

She holds a Masters from Yale University and a BS from Wesleyan University.



Eric Isaacs, PSM & PLS is a licensed land surveyor who is key on details. He has managed multiple crews of various sizes. He loves being outdoors and retracing a previous land surveyor's footsteps. He is well versed in all aspects of land surveying including, construction staking, primary control networks, boundary resolution and drafting with Autodesk AutoCAD products. He is the President of Florida Keys Land Surveying.

PROJECT UNDERSTANDING

It is expected that project assignments would include field data collection including speed studies, traffic capacity analysis for isolated intersections, corridor traffic operational analysis, crash analysis, Wayfinding inventory and design, pedestrian and bicycle studies, parking studies, traffic signal and signal system/ITS design, and traffic signal timing optimization and field implementation.

Corridor Traffic Operational Analysis/Data Collection

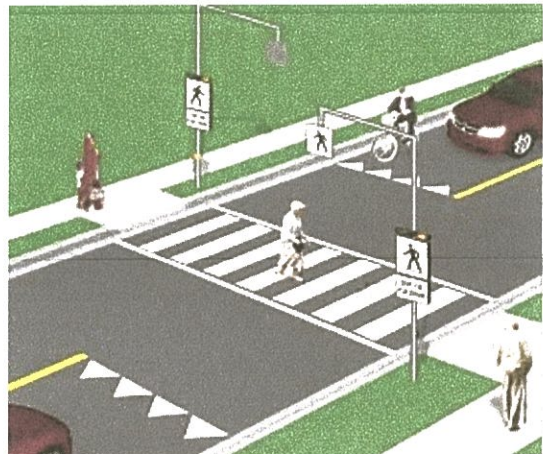


Vision's approach to conducting traffic studies is one that has always considered all modes. The expectation is that most of the corridor traffic studies will be traditional Institute of Transportation Engineers Trip Generation Manual based and will involve five to ten intersections. We begin every study with a detailed field inventory to ascertain the existing roadway geometry, speed limits, traffic control, sidewalk conditions, transit stop locations and conditions, and land use including driveway locations. This inventory is supported with peak hour

TRANSIT AND NON-MOTORIZED TRAVEL MODES ARE OFTEN OVERLOOKED IN TRAFFIC STUDIES

existing traffic counts to develop project planning forecasts has informed us that collecting quality counts is critical to the successful outcome of any traffic study. Therefore, we collect all turning movement counts on the same day to ensure volumes balance between intersections, and we abort the count immediately if there is a crash or other incident that would affect the count at one or more intersections. All turning movement counts are reviewed by both a Professional Engineer and Professional Traffic Operations Engineer to ensure accuracy and reasonableness. This process ensures the city will get a firm estimate of the baseline conditions for the study area prior to developing forecasts and conducting future conditions analysis.

For most studies, the ITE methods will be sufficient as most developments are expected to be smaller in nature (i.e CVS, new restaurant, new subdivision, etc). The new ITE Trip Generation Manual 10th Edition would be used to calculate the future daily and peak hour trips for a proposed developed based on the appropriate land use code and the proposed square footage. The 10th edition of ITE has improved the sample size for urban areas and includes more of a focus on person trip-generation which makes this edition more applicable to urban conditions such as the City of Key West than previous editions of ITE which sampled primarily suburban areas which have different characteristics with regards to mode shares and person trip generation rates.



For mixed-use development plans that are small to mid-size in scale (trip generation < 10,000 daily trips), the appropriate internal capture rates will be applied that would effectively reduce the peak hour trip generation. Likewise, for proposed restaurants and retail establishments, the appropriate pass-by trip reduction will be applied. Finally, the appropriate modal share reduction will be applied (transit, bike, pedestrian, telecommute) to estimate the final peak hour trips. Instead of using default ITE transit and pedestrian reductions, Vision has successfully used and recommends using US Census data to estimate these mode shares, as this data is available at the census tract level which is consistent with the scale of traffic impact studies and is based on observed travel behavior in the local study area and therefore more reflective of local conditions.

Upon finalizing the future peak hour trips, the trips will be distributed based on existing traffic count patterns in the study area and then assigned to the existing and planned roadway elements including the entry points to proposed developments. These forecast trips will be added to the existing turning movement count which will be factored to the future year conditions based on historical daily count trends in the study area. If historical traffic counts illustrate a flat or declining trend, a default background (growth in regional traffic) growth rate of 1.02 or another value as determined by the city will be applied to the existing turning movement counts to be conservative.

Larger developments require a more robust forecasting and analysis approach as these developments cause shifts in regional traffic patterns that have to be factored into the analysis. If the development uses primarily existing roadway infrastructure (i.e. only new access points added), the regional model would yield the most reliable forecasts as the regional model will capture changes in people's destination choice (where people go to shop, work, and recreate), mode choice (transit or non-motorized) and the route choice (the path they travel to get there). A proposed development would be evaluated by coding in the respective number of employees (ITE can be used to calculate this for most land use types, or information can be obtained from the developer) in the appropriate Transportation Analysis Zone (TAZ) for the respective future year and the travel demand model run. The model results would then be post processed using the procedures from the *National Cooperative Highway Research Program (NCHRP) 765 report, Analytical Travel Forecasting Approaches for Project-Level Planning and Design* with the final results being future year intersection forecasts for the study area.

This approach is recommended for larger developments not only because of the changes they cause in regional traffic patterns, but also the horizon year for major developments is typically longer (10 or more years) which means new local and regional transportation projects will be constructed in that timeframe that would need to be considered in the analysis (ITE methods cannot do this). Likewise, there is likely to be a larger volume and magnitude of background developments in a longer timeframe that would also need to be considered and the regional model will also capture this.

For larger developments that would construct new roadways, such as new grid networks to accommodate future traffic circulation, a hybrid approach recently developed by Mr. Gilliam to support the evaluation of major mixed-use developments would be utilized. The hybrid approach combines the strengths of both the ITE and regional model methodologies and is summarized below by forecasting step:



Trip Generation: ITE is recommended for trip generation as trip generation can be estimated at the site level for specific land uses which the travel demand model would not explicitly do even with modifications to the TAZ structure. However, the regional model is recommended to be modified as necessary to reasonably replicate the total vehicle trips estimated by the ITE method as this will ensure overall consistency in trip generation results which is necessary for later steps in the forecasting process.

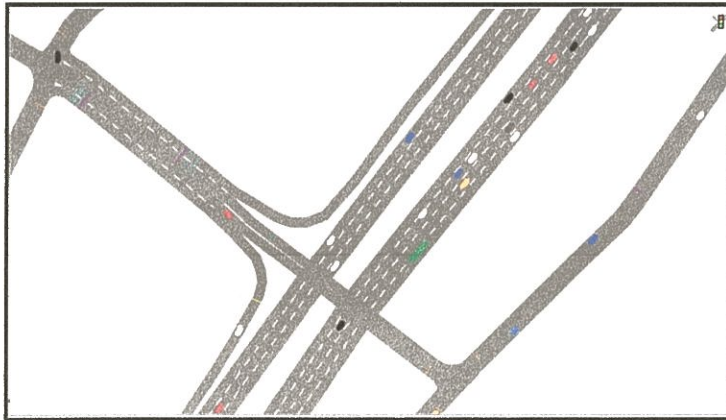
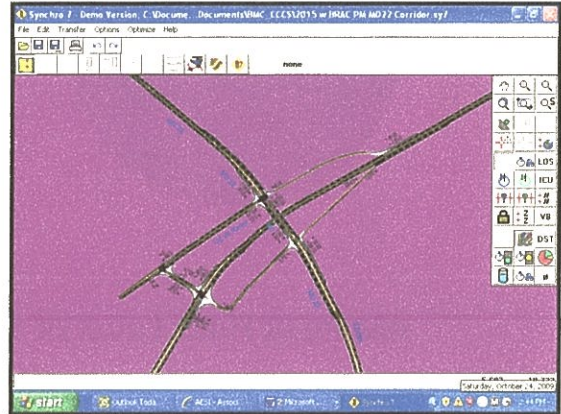
Trip Distribution: The regional model is recommended to estimate the trip distributions for major mixed-use developments with new transportation grid networks. The travel demand model will capture the regional impacts of the development to Trip Distribution and Destination Choice. The regional model select link or zone analysis can be supplemented with existing traffic count patterns as well.

Mode Choice: The ITE standard transit reduction can be used as the starting point for determining transit mode shares for new developments; however, this estimate should be adjusted if existing transit and non-motorized mode shares exceed the ITE standard reduction based on US Census data in the study area.

Assignment: Assignment would be conducted at the parcel level for the proposed development area including the existing and proposed intersections. The forecasts at major intersections in the core study area would be used as control points for the remaining intersection/interchange forecasts. The regional model would then be used to develop the remaining forecasts outside of the core development area using the NCHRP travel demand model post processing procedures.

Synchro/SimTraffic and/or VISSIM would be used for corridor analysis depending on the complexity of the assignment. In addition to collecting turning movement counts on the same day, Vision also collects travel time and queuing data at the same time as the turning movements are collected to ensure the traffic simulation models are fully calibrated to existing field conditions. This includes the collection of bicycle, pedestrian, and golf cart counts as applicable which would also be coded into the simulation models. Travel Time data would be collected using GPS units and the floating car method which averages 6 runs per direction.

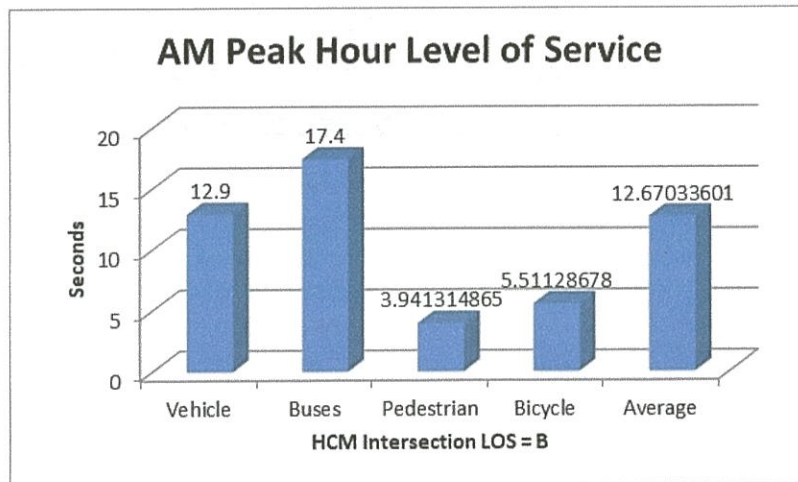
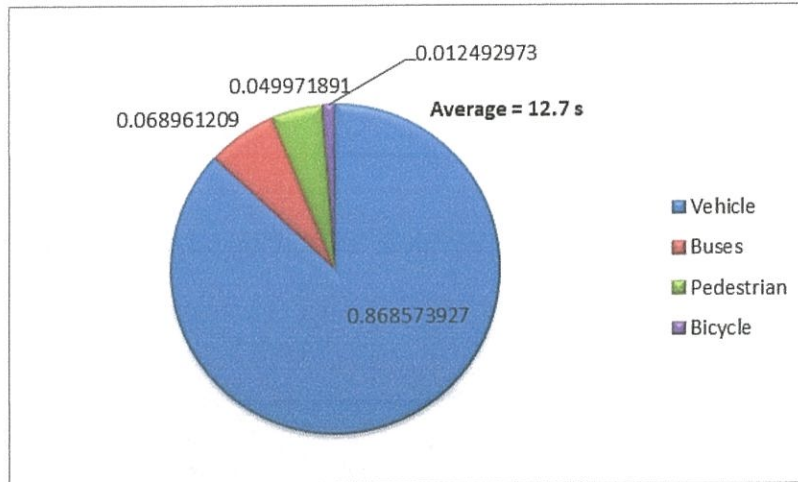
Vision will choose appropriate Measure of Effectiveness (MoEs) to evaluate the scenarios based on direct conversations with the city. Through the comparison of MoEs within the acceptable standards, Vision will identify the deficiencies (in terms of locations and period) in the roadway network. The simulation and modelling work will incorporate the land use, pedestrian/bicycle and transit information. For the evaluation



of traffic operations, VISSIM will be used in conjunction with Synchro. Synchro will be used to optimize the signal timing plans according to the current and future demands. Calibration of the VISSIM model will be done in the following the sequential steps: (i) identification of calibration parameters (car following parameters, parameters related with lane change, startup lost time, driver's factors, etc.); (ii) sampling of parameters and performing multiple runs; and (iii) observing the effect

on validation. The add-on module called Viswalk can be added to VISSIM to model pedestrians. Bicyclists and golf carts can be modelled by considering them as bigger pedestrians and adjusting the parameters.

Like the existing conditions analysis, Vision would present the future analysis results in person based performance measures that include Person Level of Service (PLOS) for the study intersections. This Person LOS will better capture the multi-modal assessment needed as the City is expected to continually increase in density which should lead to a more multi-modal environment with proactive planning. Vision in association with Fehr and Peers, Inc. has recently developed and used this performance measure to present the result of analysis for the Maryland National Park and Planning Commission (MNCPPC) Model Assessment project. The PLOS is one of a number of performance measures that will be utilized to robustly illustrate the existing and future conditions and provide a platform to conduct equitable, multi-modal transportation analysis for the City of Key West. A summary of the proposed performance measures and their relevance/benefit to the City of Key West is presented on the following page.



illustrates the total hours of system delay)

- ✚ **Vehicle Hours of Delay per Vehicle Mile of Travel** (this per-capita based performance measures illustrates the individual experience for vehicle travel in the City)

After evaluating future year conditions and determining deficiencies in the transportation network, recommendations will be developed to improve the LOS to D or better at all of the study intersections. In addition to traditional traffic engineering strategies such as signal optimization, turn lane modifications and/or additions, and reallocating lane use, Vision has extensive experience in developing, evaluating, and implementing Transportation Demand Management (TDM) strategies, bike and pedestrian strategies as well as transit improvement and parking strategies to assist with traffic mitigation. This in turn leads to planned improvements that will maximize the user comfort and experience for all modes of travel. An example of one of the corridor toolboxes developed in a previous study is presented on the following page and represents the full spectrum of strategies and recommendations available to the City of Key West.

- ✚ **Intersection PLOS** (captures person delay and comfort for all modes of travel)

- ✚ **Person Throughput** (illustrate the number of people that traverse a corridor to better illustrate transit improvement impacts; also useful for HOV/HOT lane and evacuation analysis)

- ✚ **Trip Lengths** (summary of trip lengths output from travel demand model at TAZ level illustrates impacts of changes to land use at the local and regional level, and development of Complete Streets)

- ✚ **Vehicle Miles of Travel at LOS E/F** (illustrates the distance of travel at capacity and over/capacity conditions; minimizing this value is optimal and can be achieved through land use changes, Complete Streets development, transit, bicycle, and pedestrian improvements)

- ✚ **Vehicle Hours of Delay** (this is another excellent system performance measure which

Forest Drive Corridor Toolbox

	Tool	Overview	Highly Recommended	Possible	Not Applicable
1	Signal System Operations	Signal System Timing, Detection	X		
2	Traveler Information and Intelligent Transportation Systems	Real Time Travel Information, Changeable Message Signs	X		
3	Event Traffic Management	Sporting Event Planning, Evacuation Planning	X		
4	Demand Management Strategies	Mixed Use Development, New Urbanism Development	X		
5	Bus Rapid Transit	Ranges from limited bus stops to Light Rail Transit quality		X	
6	Paratransit	On demand transit service for persons with disabilities			X
7	Promote Transit Use/Transit Priority	Add service, modify existing service, reduce headways	X		
8	Promote Carpooling	HOV lanes, ridesharing programs	X		
9	Employer Based Incentives	Employee sponsored vanpools, rideshare matching	X		
10	Pedestrian and Bicycle Enhancements	On and off street bicycle and pedestrian facilities	X		
11	Traffic Calming	Raised crosswalks, chicanes, neckdowns			X
12	Complete Streets	Developing parallel roadway connections	X		
13	Access Management	Driveway consolidation, internal site circulation	X		
14	Time-of-Day Controls/Active Traffic Management	Traffic responsive signal timing, HOT lanes		X	

The ultimate outcome for every study Vision completes are a set of recommendations that are embraced by both public officials and residents as these are all the end users who will experience and more importantly enjoy the transportation network on a regular basis.

Traffic Capacity Analysis

Traffic Capacity Analysis is typically conducted at isolated intersections to evaluate the current and future delay, LOS and volume/capacity. Similar to corridor studies, Vision would collect peak hour turning movement counts for the study intersection; however travel time runs would not be needed. The intersection geometry including lane widths, speed limits, lane usage, and on street parking restrictions would be collected in the field. This data, along with existing traffic signal timing data would be input into Synchro where an HCM analysis would be performed. Saturation flow rates would be field measured in the historic parts of Key West as the saturation flow rates in these areas would vary significantly from the default values used in Synchro. Capacity analysis would be conducted to determine intersection improvement designs, signing and marking improvements, and optimal signal timing plans. All intersection and roadway design improvements would be vetted by CRC to determine coastal flooding and potential storm surge impacts, and the improvements modified as necessary (within the guidelines of the FDOT Green Book) to mitigate these impacts.



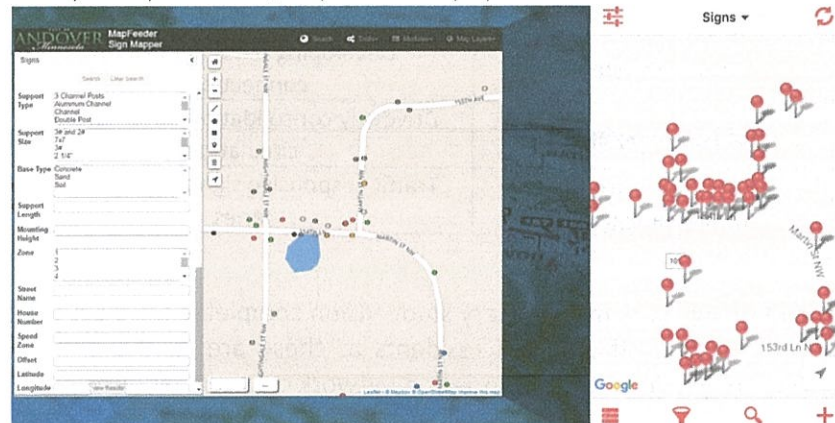
HISTORIC KEY WEST HAS UNIQUE CHARACTERISTICS THAT IMPACT INTERSECTION SATURATION FLOW RATES

Wayfinding/Bicycle and Pedestrians

Vision will use the Fulcrum application for the inventory of transit, roadway elements, pedestrian and bicycle facilities, location of school zones, and Wayfinding. Vision will customize the application inside the Fulcrum environment to collect project specific

information based in the form of questionnaires. This application can be downloaded to cell phones, iPad/Tablets or desktop that are portable to the field sites and can be effectively used for data collection purposes. Fulcrum records the temporal and spatial features of the data collection event and can be exported to other applications such as ArcGIS for further analysis and depiction. Vision recently used the Fulcrum application to collect information for the Hyattsville Transportation Plan project outside of Washington, DC, and the collected data was instrumental in depicting existing conditions and developing future year recommendations, particularly for Wayfinding, pedestrian and bicycle facilities in the city. Fulcrum was used for collecting roadway and pedestrian/bicyclist facility specific information as well as supplementary traffic information for that project.

Vision will transfer the data to an ArcGIS environment to effectively delineate the data as well as to perform further analysis. Vision will produce maps depicting the data for different spatial locations. Since GIS has the capability to develop a database, perform different database queries/analysis and depict the



results visually in the form of maps, it will also be a good platform to depict crash data, volume data, transit routes, roadway classifications, traffic signals and pedestrian and bicycle facilities related data. Vision's engineers and modelers have expertise in handling ArcGIS and Quantum GIS (QGIS).

Traffic Calming/Speed Studies

Traffic Calming requests are often generated at the neighborhood level, and must be evaluated on a case by case scenario in a responsive fashion. The most important step in developing a Traffic Calming plan is problem identification; the issues could range from lack of sidewalks for neighborhood children to walk to school to excessive speeds in tourist areas. Upon receiving a request for traffic calming, Vision will conduct a speed study using radar equipment to determine the observed 85th percentile speed which will be compared to the posted speed limit. Vision will collect 5 years of crash data from the Florida Department of Transportation (FDOT) and City of Key West Police Department. Vision will develop GIS based crash location maps with crash frequencies that will assist in locating potential hot spot locations. Detailed crash

analysis would involve (i) finding out the distribution of crashes by types, causal factors, severity, road surface condition, light condition and year, etc.; (iii) finding out the pattern: most predominant crash type and predominant causal factors; (ii) detailed review of predominant crashes; and (iii) developing the safety countermeasures to mitigate those crashes. Vision will develop a matrix showing the location of the crashes, frequencies, predominant crash category and recommended countermeasures. For the pedestrian crash analysis, the detailed review of causal factors will be performed to classify them into 13 divisions developed by FHWA: (1) Dart/Dash, (2) Multiple Threat/Trapped, (3) Unique Midblock, (4) Through vehicle at unsignalized location, (5) Bus Related, (6) Turning Vehicles, (7) Through Vehicle at Signalized Location, (8) Walking along Roadway, (9) Walking/Playing on Road, (10) Non-

Roadway, (11) Backing Vehicle, (12) Crossing Expressway, and (13) Miscellaneous. Crashes will also be analyzed according to injury severity, lighting condition and road surface condition. Based on all these factors, the potential countermeasures will be developed from a Traffic Calming Toolbox developed by Vision staff.

Traffic Signal/ITS Design

Every signal design, signal system design, or ITS design would begin with a field survey. Upon receiving the base mapping in MicroStation format, the signal layout would be prepared including traffic signal pole location, pull box location, loop detector or video camera locations, controller location which would



be coordinated with the City of Key West technicians, conduit runs, and signal system communication where applicable. Intersection design improvements could also include new sidewalks, ADA ramps, crosswalks, and turn lane additions or modifications which would be designed according to the standards in the FDOT Green Book which Vision has recently utilized in the City of Pahokee, FL streetscape design. Signal designs would also include standard sheets, phasing diagrams, standard specifications, and construction cost estimates. ITS designs could include the design of Changeable Message Signs, Traveler Information Systems, and updates to the city's ITS architecture. All designs would be reviewed and tested by CRC for flooding impacts and modified as necessary to mitigate the adverse impacts. Traffic signal and ITS designs would be coordinated with the City of Key West Engineering department, the City of Key West Technicians, FDOT, and local developers where applicable. Designs will be submitted to the City at 30%, 60%, 90%, and 100% design stages.

Signal Timing

Signal timing is a task that frequently involves coordinating activities of many different departments of the jurisdiction. For example, it is not unusual for the Planning Department to provide the traffic counts and mapping data, and for the Traffic Engineering Department to conduct the timing optimization analysis, with the Maintenance Shop performing the actual parameter installation. It is important to recognize that the signal timing process is not simply executing a computer program; rather, it is a continuing series of tasks that involve persons with many different skills. Two of the most prominent are the traffic engineer and the traffic signal technician. The engineer typically uses a software model, such as Synchro, to derive the timing plan, which is defined in terms of a cycle length, split, and offset. These data are then provided to the traffic signal technician who must convert these variables into the timing parameters used by the controller. The complete process is probably more complex than one might expect. **Figure 1** illustrates the major

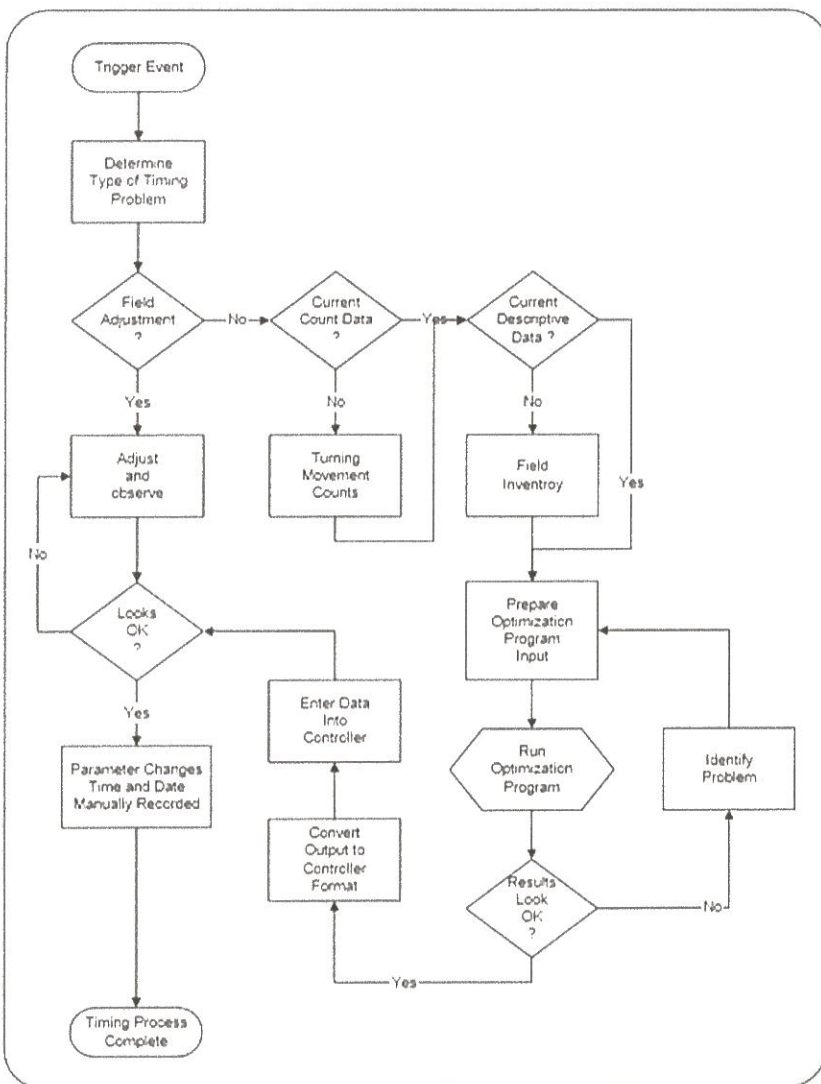


Figure 1. Classical Approach to Signal Timing.

response is usually a review of the existing timing and equipment to ensure there is no hardware failure. One of the most common signal timing complaints is that the phase time is too short. This is frequently a result of a detector malfunction. The initial response, then, is to confirm that the hardware is operational and the timing parameters are operating as planned. After the Trigger Event, there are two basic paths through the process: Field Adjustments and System Retiming. The "Field Adjustment" path is shown in Figure 1 as the path directly below the "Determine Type of Timing Problem" box. This path is entirely empirical and intuitive, and produces results only as good as the experience of the person performing the adjustments. The other path begins with a data collection effort and continues through an optimization process to generate and install new system timing parameters. There are three primary activities involved in the Classical Signal Timing Process: Data Collection, Optimization, and Installation/Evaluation.

Data Collection

Signal retiming is not making simple adjustments to a few timing parameters in a controller. Most jurisdictions follow a more complicated effort to retime a signal or group of signals using modern computer

activities and interfaces that are typically followed to update signal settings. Whether the process is applied to a single intersection or to an entire city, the steps are the same. It is also interesting to note that the same steps must be followed whether the process is entirely manual or completely automated. Each of the major activities of the signal timing process is described below. In the real world, the signal timing process begins with a "Trigger Event." This event may be as benign as a scheduled activity to retime the controller every few years. More likely, however, the impetus for new signal timing is a citizen complaint (e.g., "The light is too short"), a major change in the road network (e.g., widening of the existing arterial), or a significant change in demand (e.g., opening of a shopping center). Whatever the cause, the initial

programs and procedures. This path involves the more complex activities that are indicated in **Figure 1** to the right of the “Field Adjustment” path. There are two broad categories of data that are required by the process: turning movement counts and network descriptive data.

Turning Movement Counts

This path through the flow chart begins with a determination of whether there is adequate traffic count data. For the most part, the necessary data includes turning movement counts that reflect the traffic demand. Vision traffic engineers consider four plans to be the minimum required for proper signal operation: the AM peak plan, day plan, PM peak plan, and night plan. Therefore, a basic need is to have a turning movement count for each of these four periods. In areas near major shopping venues, there may be additional needs for unique timing plans that are related to shopping demand. While this seems simple enough, it is not inexpensive. Collecting these data typically costs in the range of \$500 to \$1,000 or more per intersection. Converting the raw count data into a format useful for analysis easily can double the cost. This is an area where significant progress has been made. For example, one vendor, Jamar Technologies Inc., makes an electronic data collection board that is easy to use, accurate, and reliable. Although an observer is still required to record the movements, once the observations are completed, the data are easily uploaded to a computer for further processing. The more elegant solution to this problem, however, is to collect the data using existing system and local detectors and derive a complete traffic volume network with all turning movement from these detector data. Several systems, such as QuicNet/4, MIST, Pyramids, and Actra, have the capability to export traffic count data from existing count stations. Traffic count data must be considered in two dimensions: temporal and spatial. In the temporal dimension, traffic count data at any one point varies from period to period as traffic demand ebbs and flows. In the spatial dimension, we frequently require traffic count data at many different intersections for the same time period. In addition, to accommodate certain flows through a series of intersections, we need to know the upstream origin of the demand for each turning movement at the downstream intersection. The need for traffic counts is not a unique demand for signal timing; most Traffic engineering endeavors require traffic count information. Traffic signal timing, however, does require accurate turning movement counts. Turning movement counts (or estimates) are fundamental to developing timing plans. These counts must be estimated in such a way as to represent traffic demand. In other words, one must be sure that the count information truly represents traffic demand and not just the traffic that was able to get through the intersection with the existing signal settings. A related issue to be aware of is the possibility that the traffic counted on a particular approach is actually constrained by the signal settings at the upstream intersection feeding that approach.

Descriptive Data

All signal optimization and simulation models, even manual signal timing procedures, require a physical description of the network. This description includes distance between intersections (link length), the number of lanes, lane width and grade, permitted traffic movements from each lane, and the traffic signal phase that services the flow. Building a network from scratch is a significant undertaking. But once the network is defined, in general, only traffic demand and signal timing parameters have to be updated to test a new scenario. An implied issue in this step is identification of which intersections are to be included in the system. While this is a trivial issue for many simple networks, it can be a difficult problem to resolve in the more complex networks. In general, signals should operate as a system when adjacent intersections have similar cycle length requirements and there are significant benefits to be derived from controlling the

offset. When the cycle length requirements are within 15 seconds of one another and the distance between intersections is less than 0.5 miles, our traffic engineers feel that the signals should be coordinated.

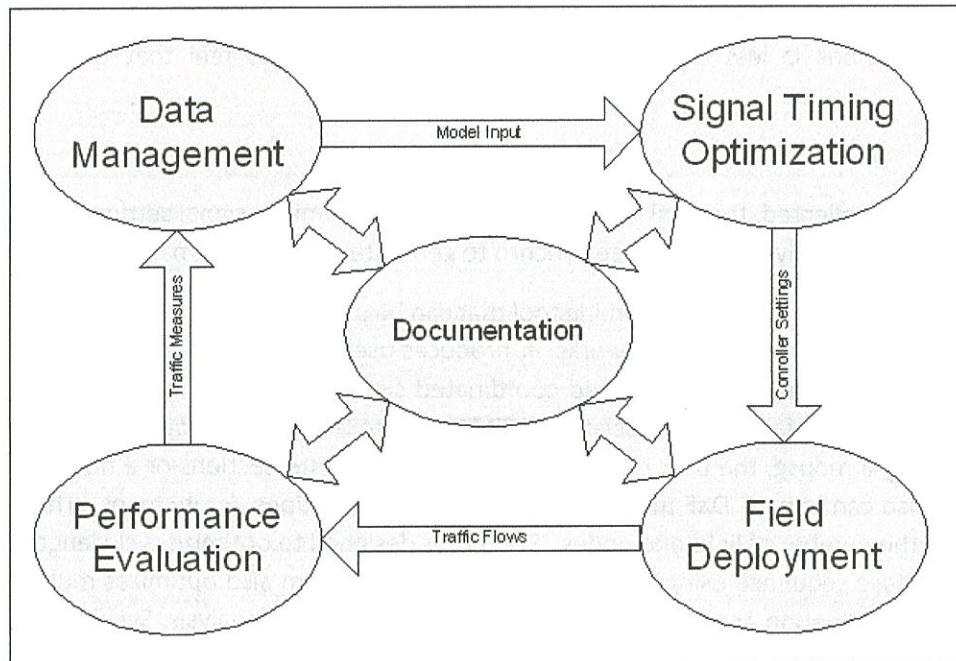
Optimization

Once the data are collected, the final step is to generate the optimized signal settings. While this task can be accomplished manually, Vision will use Synchro to generate signal timing parameters.

Synchro is a macroscopic traffic signal timing tool that can be used to optimize signal timing parameters for isolated intersections, arteries, and networks. It produces useful time-space diagrams for interactive fine-tuning. Synchro can analyze fully actuated coordinated signal systems by mimicking the operation of a National Electrical Manufacturers Association (NEMA) controller, including permissive periods and force-off points. Using a mouse, the user can draw either individual intersections or a network of intersecting arteries, and also can import .DXF map files of individual intersections or city maps. The program has no limitations on the number of links and nodes. Synchro is designed to optimize cycle lengths, splits, offsets, and left-turn phase sequence using proprietary logic. The program also optimizes multiple cycle lengths and performs coordination analysis. When performing coordination analysis, Synchro determines which intersections should be coordinated and those that should run free. The decision process is based on an analysis of each pair of adjacent intersections to determine the “coordinatability factor” for the links between them. Synchro calculates intersection and approach delays either based on the Highway Capacity Manual (HCM) or a proprietary method. The major difference between the HCM method and the Synchro method is treatment of actuated controllers. The HCM procedures for calculating delays and level of service (LOS) are embedded in Synchro; thus, there is no need to use HCM software. Synchro has unique visual displays, including an interactive traffic flow diagram. The user can change the offsets and splits with a mouse, then observe the impacts on delay, stops, and LOS for the individual intersections, as well as the entire network.

Installation and Evaluation (Field Adjustments)

Once the hardware is determined to be operating correctly, the last task is to evaluate how well the new signal settings are managing traffic demand. Often, a simple adjustment of one parameter is all that is necessary. It may be possible to accommodate longer queues on the main street, for example, by simply advancing the offset by several seconds. Other timing problems can be resolved by simple adjustments to the minimum green or vehicle extension parameters. These types of issues are resolved by a positive output from the “Field Adjustment” decision in **Figure 1**. In most jurisdictions, the entire sequence, from determining the type of problem, to making the adjustments, to evaluating the results, and to recording the changes, is a manual process that relies on the experience of a signal engineer (or signal technician) to provide a solution which is why Vision always works hand and glove with the local technicians and engineers in the field on every signal timing project. Before and After travel time runs are key performance measurements to determine the effectiveness of signal timing optimizations in the field. For situations where existing signal controllers are being upgraded, the Synchro signal timing plans will be download into Actra software which reads the timing data into the signal controller. This process is completed in the office, and the new controllers are then taken into the field where they are swapped out with the old controllers. If existing controllers are to remain in the place, a laptop with the Synchro timing plans will be taken out in the field, and the timing plans will be input directly into the controllers. All timing plans will be fine-tuned by a Professional Traffic Operations Engineer and an experienced Signal Timing Engineer.



Traffic Signal Timing Process

Parking Studies

Parking studies involve not only traditional parking occupancy studies that are conducted in the field during specified time periods, but also should include an evaluation of existing Wayfinding to determine if existing parking lots are clearly marked along major routes and intersections. The Wayfinding will also be evaluated for the appropriate scale, as drivers have to be able to read and interpret the Wayfinding while driving at free flow speeds. Understanding these issues as a whole is an essential part of completing a successful parking study. The following are some of the most important, and common, types of parking studies:

Supply / Demand

- ❖ Analyze current parking conditions and determine if they are sufficient to support growth and development
- ❖ Examine parking supply and anticipate future shortages
- ❖ Assess the ability of an existing supply to meet existing peak demand
- ❖ Project future demand
- ❖ Identify future deficit or surplus
- ❖ Develop parking demand ratios to calculate current and future parking demand

Financial Feasibility

- ❖ Determine the cost to add and operate new parking
- ❖ Predict types of parking revenue
- ❖ Assess proposed rates and market value
- ❖ Determine whether the parking facility will be self-supporting
- ❖ Establish fee structures, annual growth rates, and revenues

- ❖ Identify user types and rates, turnover, and hours of operation

Shared Analysis

- ❖ Identify actual parking demand and user characteristics to mitigate cumulative parking demand
- ❖ Analyze land uses including total square footages by land use, tenant mix, number of units, etc.
- ❖ Identify reductions in parking per unit of land use as a result of individuals patronizing more than one destination on a single trip
- ❖ Estimate potential vehicular occupancy of residential, restaurant, retail, and commercial uses
- ❖ Conduct a shared parking analysis and make recommendations for opportunities to reduce the parking development
- ❖ Assist in the presentation of the shared parking analysis and data to obtain land use approvals

Site Feasibility

- ❖ Review current local codes and ordinances
- ❖ Develop parking structure layouts
- ❖ Recommend the most cost-effective options to increase parking supply
- ❖ Investigate ways to reallocate parking supply to better accommodate user needs
- ❖ Incorporate needs of individual users into analysis of the sites and design concepts

Operational Analysis

- ❖ Assess current operations procedures and recommend improvements
- ❖ Assess new parking operational and management initiatives
- ❖ Evaluate alternative options, i.e. shuttle, valet, and long-term parking
- ❖ Analyze pedestrian and vehicular circulation for improvement and potential conflicts
- ❖ Evaluate and recommend alternative parking management practices
- ❖ Analyze parking rate structures for on-street, off-street, and residential parking

Project Management Plan

Vision understands the unique logistics in providing on call Traffic Engineering services to the City of Key West. Our project management plan along with our proposed staffing was developed specifically to provide the City of Key West the highest level of quality and responsiveness. The Project Director, Paul Gilliam, PE, PTOE is based in the Vision Ft. Lauderdale office, the President of Florida Keys Land Surveying, Eric Isaacs, PSM, PLS is based in Sugarloaf Key, and CRC support staff are located in their Ft. Lauderdale office.

Eric Isaacs, under Mr. Gilliam's direction will lead the collection of all transportation supply data. In addition to conducting surveys for traffic signal and ITS designs, Mr. Isaacs will be responsible for collecting roadway and intersection geometries for traffic and capacity analysis studies, Wayfinding locations and quality, parking restrictions, signing and marking, sidewalk and bicycle facility geometries and locations.

Mr. Gilliam will lead the collection of all transportation demand data including traffic counts, travel time runs, queuing observations, vehicle/truck occupancy studies, transit surveys, and bicycle/pedestrian counts. Mr. Gilliam will train Florida Keys Community College students on the appropriate processes to collect the data which will be reviewed by Mr. Gilliam, and a Senior Traffic Engineer, Mr. Gyawali. Mr. Gilliam will conduct all field observations on the same day the data is being collected, not only to ensure the observations are consistent with the traffic conditions, but also to terminate the counts and travel time

runs if an incident is observed in the study area. The observations will be conducted during the AM, Midday, and PM weekday peak hours. Weekend peak hour observations will be conducted for corridors with unique characteristics such as high concentrations of retail, entertainment, etc.

CSC will evaluate design improvements and recommendations using concept and preliminary designs developed by the study team. The flood analysis will give the City of Key West unique insight into the future flooding impacts with and without specific improvements; this analysis in turn will be used to improve the designs and recommendations and ultimately develop the most sustainable transportation network for the City of Key West.



PROJECT TEAM EXPERIENCE

New Jerusalem Primitive Baptist Church Traffic Study, Miami FL

Client:

Design2Form/Miami-Dade County
201 S Biscayne Boulevard, Suite 2800
Miami, FL 33131

Contact: Zamarr Brown

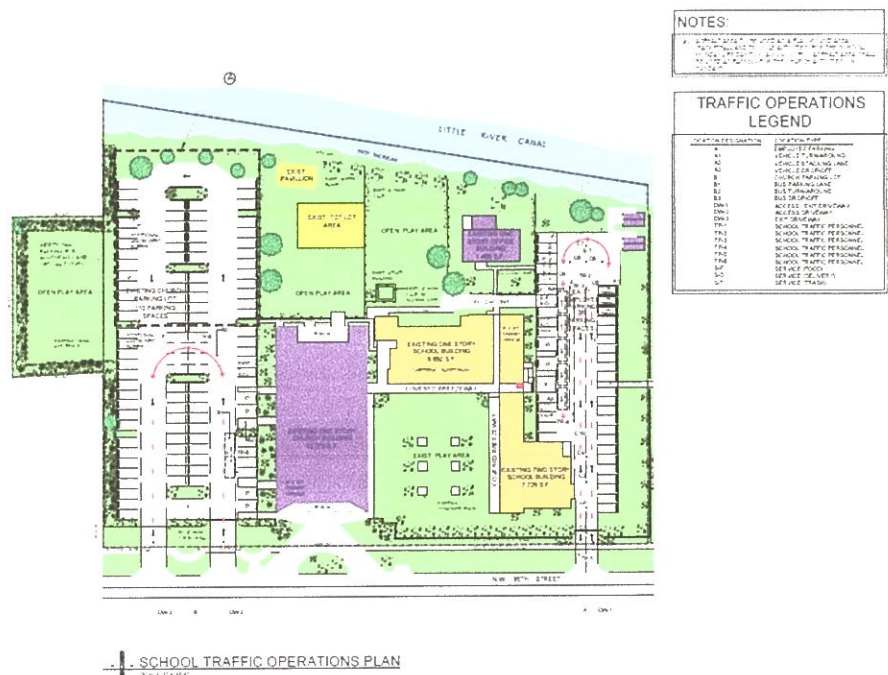
Phone: 305-670-4898, Ext. 1

Email: zbrown@design2form.com

Staff: Paul Gilliam, Sunil Gyawali, Corey Vernon

Fee: \$1200

Vision completed a traffic study for a school on the church site located in Northwest Miami. The study was unique from the perspective that the land use change had occurred prior to conducting the traffic study required for the permitting process. With a timeline of less than two weeks, Vision used video cameras to collect traffic data on NW 7th Avenue. The collected data actually represented the build conditions as a portion of the existing daycare on the church site had already been converted to an elementary school. The Background conditions were calculated using the difference in trip generation between the daycare and the elementary school, and the "existing conditions" were actually derived by backcasting the no-build forecast to last summer when the traffic study should have been initiated. This approach and associated School Traffic Chart was accepted by Miami-Dade County which allowed the school to obtain the necessary permits required to remain in operation. This is an example of how Vision approaches each project in an objective and innovative fashion as this approach had not been used previously in Miami-Dade County or District 6. The technicians even mounted the video camera to a palm tree to maintain the schedule!



Baltimore City DOT on Call Traffic Engineering

Client:

Baltimore City Department of Transportation

417 E. Fayette Street

Baltimore, MD 21202

Contact: Valorie Lacour

Phone: (410) 396-6856

Email: Valorie.Lacour@baltimorecity.gov

Staff: Paul Gilliam, Joe Ojeda, Thomas Carethers, Larrie Horky, Brandon Hawkins

Fee: \$100,000

Vision has been selected for this contract multiple times since 2007 based on performance. Vision has conducted traffic data collection, parking studies, traffic impact studies, corridor studies including the McCommas Street Study, and transit mode share analysis using Cube. Vision completed traffic calming designs at multiple locations in the City of Baltimore, including 33rd Street at Hillen Road, Kane Street at Pratt Street, Corse Avenue at Frankford Street, and Caroline Street in the Fells Point area of Baltimore. Tasks included field inventory and utility surveys, roadway plan design including curb and gutter design; signing and marking plans, erosion control plans and notes, quantity, and construction estimates.

Georgia State Route 25 at Canal Road Intersection Study Update

Client:

Glynn County Georgia/GDOT

700 Gloucester Street, Suite 200

Brunswick, GA 31520

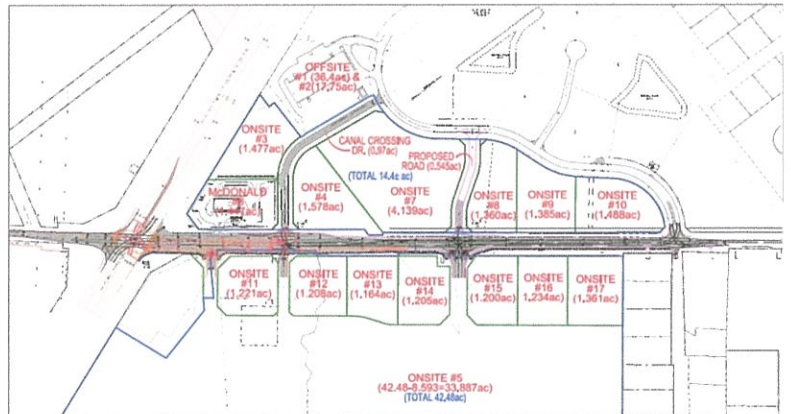
Contact: David Hainley, Director

Phone: (757) 514-4060

Email: Planningemail@suffolkva.us

Staff: Paul Gilliam

Fee: \$12,000



Vision completed an update to the Canal Road intersection study in Brunswick, Georgia previously completed by Vision. The study evaluated traffic operations and safety at the study intersection and three additional intersections that would be constructed as a part of a new shopping center development that includes Sam's Club. Tasks included traffic count data collection, ITE Trip Generation calculations, operational analysis using Synchro, crash analysis, and the development of operational and safety improvements for existing conditions, Year 2015 conditions, and Year 2025 conditions. Concept designs for recommended roadway improvements including signing/markings and signal designs were developed in MicroStation.



PAST PROJECT PROFILE

PROJECT NAME:

City of Key West – Topographic Survey of 5th Street
Key West, Florida

CLIENT:

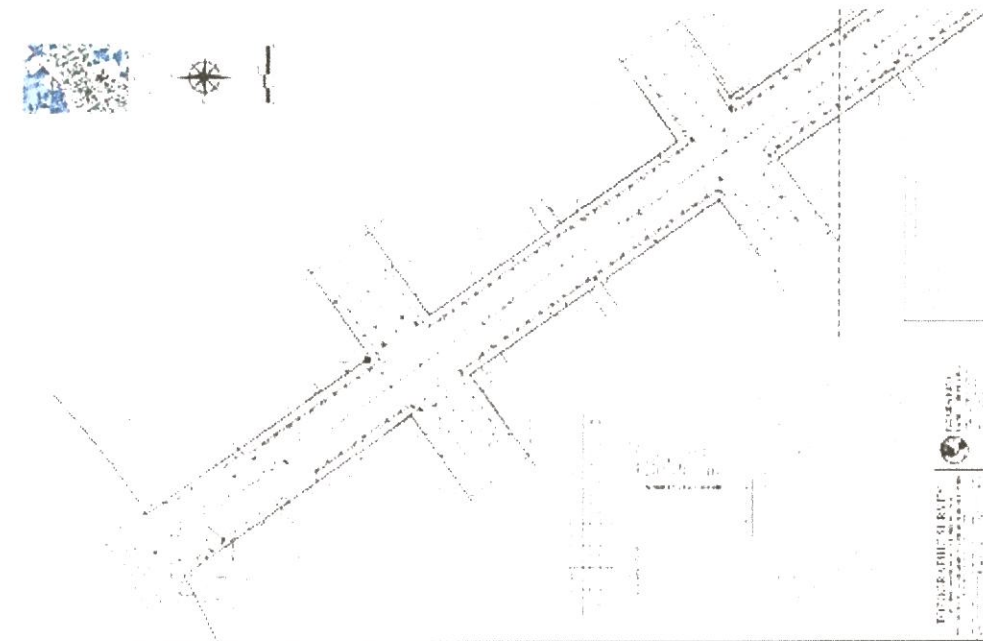
The City of Key West
Karen Olson, the City of Key West Engineering Services – (305) 809-3963

FKLS'S FEES:

Topographic Survey: \$23,520.00

DATE OF COMPLETION:

April, 2014



PROJECT DESCRIPTION:

This project was a Topographic Survey to illustrate the monumented Right of Way lines of 5th Street, from N. Roosevelt Blvd. to Flagler Avenue, in Key West. FKLS's services included establishing the monumented Right of Way lines of 5th Street, provide cross section topo data every 10 feet, locating existing utilities, provide elevations on existing utilities, locating all improvements within the Right of Way lines of 5th Street and monumenting a survey baseline every 100 feet within the project.



FLORIDA KEYS LAND SURVEYING

19960 OVERSEAS HIGHWAY, SUGARLOAF KEY, FL 33042

PHONE: (305) 394-3690

EMAIL : FKLSemail@gmail.com

www.floridakeyslandsurveying.net

PROJECT PROFILE

PROJECT NAME:

City of Key West – Topographic Survey of Jose Marti Drive Right-of-Way
between Truman Avenue and Virginia Street
Key West, Florida

CLIENT:

The City of Key West

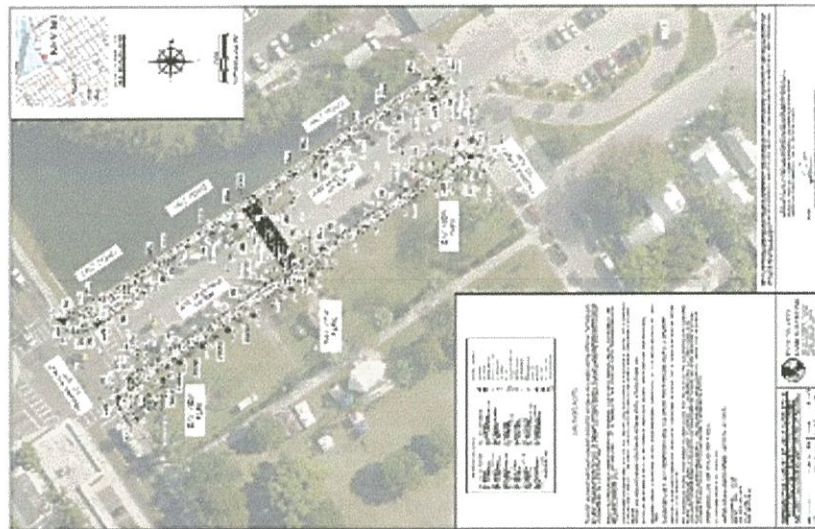
Jim Bouquet, The City of Key West Engineering Services – (305) 809-3963

FKLS'S FEES:

Specific Purpose Survey: \$2,840.00

DATE OF COMPLETION:

December 2015



PROJECT DESCRIPTION:

This project was a Topographic Survey of the Right-of-Way of Jose Marti Drive, from Truman Avenue to Virginia Street, in Key West. FKLS's services included locating all improvements and providing topographic data for design purposes.



**Paul L. Gilliam,
P.E., PTOE**

.....
President

.....
New Jerusalem Primitive Baptist Church Traffic Study

Completed a traffic study for a school on the church site located in Northwest Miami. The study was unique from the perspective that the land use change had occurred prior to conducting the traffic study required for the permitting process.

Georgia Department of Transportation Statewide TE Studies

Project Manager on statewide project involving the evaluation of isolated intersections, interchanges, and other special studies as required by GDOT; a typical task order included sight distance studies, crash analysis; a review of traffic control, signal warrant evaluation, signing and marking; and operational and capacity analysis.

Hyattsville Transportation Plan

Project Manager responsible for field inventories and GIS mapping of existing traffic calming, sidewalk conditions and gaps, wayfinding, and bicycle facilities. Developed recommendations to address sidewalk gaps and improve wayfinding and bicycle lane markings.

Arlington SCOOT, Arlington Virginia

Assisted with the development of evacuation signal timing plans for two major arterials in Arlington, Virginia. Input existing signal timing in Synchro and assisted with the development of traffic signal coordination timing plans on Glebe Road and Lee Highway to provide optimum progression away from the Arlington area in the event of an emergency.

Fulton County ATMS

Prepared optimized signal system timings for various corridors in Fulton County, Georgia using Synchro/SimTraffic. Downloaded timing data into new 2070 controllers.

Howard County On Call Traffic Engineering

Project manager responsible for scheduling and staffing peak hour traffic counts at over a dozen locations in Howard county. Other assignment include travel time data collection using GPS equipment in support of before and after studies.

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Education

M.E., Transportation, University of Maryland-College Park

B.S., Civil Engineering, University of Wisconsin-Milwaukee

Affiliations

Institute of Transportation Engineers

Registration

Professional Engineer: Maryland, Virginia, Georgia, Florida

Professional Traffic Operations Engineer

Mr. Gilliam is the President of Vision and has 24 years of experience performing and managing construction engineering, roadway and rail transit design, traffic engineering, and transportation planning projects in over a dozen states for a variety of public and private sector clients. Mr. Gilliam is an expert in Travel Demand Forecasting; particularly the interaction between Traffic Simulation and Travel Demand Modeling. Mr. Gilliam has extensive experience in intersection safety studies, traffic signal timing, traffic signal design, signal warrant analysis, capacity analysis, and Traffic Impact Studies. Mr. Gilliam is also involved in cutting edge research and applications of Dynamic Traffic Assignment (DTA) models and Regional ITS Planning.

.....

Sunil Gyawali, PhD

P. Eng. (AB, CA)
EIT (ND, USA)

.....
Senior Transportation
Engineer

..... Access Management of SR 9/NW 27 Avenue, Miami, Florida

Developed Synchro model to evaluate the operations under different volume conditions and performed Level of Service Analysis.

Intersection analysis of SR 994/Quail Roost Dr.@SW 167 Ave., Miami, Florida

Performed field review, speed study, signal warrant study, sight distance study, crash analysis, provided recommendation for improvement and prepared a report.

Districtwide Investigation of Vulnerable Road Users High Crash Locations (Section 87038000/SR 932), Miami, Florida

Performed field review, performed crash analysis to identify crash clusters/patterns, developed cost feasible and constructible countermeasures and prepared a report.

Districtwide Investigation of Lane Departure High Crash Locations (Section 9010000/SR 932), Miami, Florida

Performed field review, performed crash analysis to identify crash clusters/patterns, developed cost feasible and constructible countermeasures and prepared a report.

Fatal Crash Analysis in different Locations under FDOT District 6 Jurisdiction, Miami, Florida

Performed the review of hard copy police crash reports, analyzed crash history to identify cause and pattern, recommended countermeasures.

Leon Medical Center (Physical Therapy Center) - Access Permit Study

Performed field review of existing conditions, evaluated the driveway from the view point of access management guidelines adopted by the Florida Department of Transportation and provided recommendations for permit.

..... Education

Doctor of Philosophy, Civil
Engineering/Transportation Engineering
University of Nebraska Lincoln

Master of Science, Civil
Engineering/Transportation Engineering
North Dakota State University

Bachelor in Civil Engineering
Institute of Engineering,
Tribhuvan University

Mr. Gyawali is a Senior Transportation Engineer at Vision Engineering and Planning with more than 10 years of experience in transportation engineering and research and development of transportation engineering projects. His experience ranges from traffic operations, traffic safety, transportation planning to transportation infrastructure design/construction. Mr. Gyawali has experience in intersection and corridor safety/operations studies, traffic mobility studies, signal warrant studies, traffic signal operations, traffic impact studies, parking studies, project development and environment study and System Interchange Modification Reports.

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Birmingham CBD Study

Using the Birmingham Model, the effect of I-20 closure between 15th St N and 23rd St N was studied.

US 29 BRT Study

Mr. Ojeda utilized the MWCOG model to develop future year 2040 forecasts in support of the US 29 Bus Rapid Transit Study in Montgomery County, MD. The project limits are from MD 198 to MD 193.

Fort Belvoir Master Plan Update

Mr. Ojeda performed model calibration and validation of the subarea model developed for Fort Belvoir based on the Metropolitan Washington Council of Governments (MWCOG) Version 2/TP+ traffic model network. He also processed the model outputs in the preparation of traffic forecasts for three alternative scenarios for the short-range component year 2010 and the long-range component year 2025.

Northern Virginia Corridor Studies

Mr. Ojeda was responsible for the calibration of the 1998 Northern Virginia highway network used in the Dulles Toll Road HOV Lane Implementation Study, Capital Beltway Improvement Study, I-66 Widening Project, the I-95 4th Lane Widening Feasibility Study and Design, and the Route 1 Corridor Study in Fairfax and Prince William Counties in Northern Virginia. He also developed a peak hour travel demand model for the Capital Beltway multi-lane alternatives.

Orlando Urban Area Transportation System

Mr. Ojeda used GIS database manipulation procedures to combine the previously calibrated "I-4" and "O-3" networks together, creating a 1619-zone structure of the Orlando Metro Area. The FSUTMS model was used to review calibration of the new network and to develop future ADT forecasts.

Southeast Federal Center EIS

Mr. Ojeda assisted in implementing the SYSTEM II GMS package to develop peak hour traffic forecasts and level of service data for 35 intersections in a waterfront redevelopment project in the District of Columbia.

Education

B.S., Mechanical Engineering, University of the Philippines, Diliman, Quezon City, 1968

Mr. Ojeda specializes in computer applications of transportation planning and transportation engineering procedures, particularly travel demand modeling. He has more than 25 years of experience in the development of zonal, network and model input files; preparation and setup of scripts and batch files; execution of transportation planning models; and post-processing of model outputs. He has extensive experience in several microcomputer-based transportation models, including TP+, MINUTP, TRANPLAN, and SYSTEM II. He has experience in applying MINUTP-based models and SYSTEM II-based models for numerous Northern Virginia projects, the Southeast Expressway in the Norfolk-Virginia Beach area, Prince George's County, Maryland, the FSUTMS Model in Orlando, Florida, and MINUTP-based models in New Jersey and Vermont.

ERIC ISAACS, PSM & PLS

24760 Park Drive, Summerland Key, FL 33042 | H: 305 394-2363 | FKLSEmail@gmail.com

Professional Summary

Ambitious, licensed land surveyor who is key on details. I have managed multiple crews of various sizes. I love being outdoors and retracing previous land surveyor's footsteps. I am well versed in all aspects of land surveying including, construction staking, primary control networks, boundary resolution and drafting with Autodesk AutoCAD products.

Skill Highlights

- Project management
- Due diligence
- Client interaction
- Deed research
- Total Stations
- Robotic Total Stations
- GPS/GNSS
- AutoCAD Civil 3D
- Trimble Geomatics Office
- Trimble Access
- Tripod Data Systems- Survey PRO
- Digital level loops
- Multi-crew management

Professional Experience

President

Florida Keys Land Surveying, LLC

11/2010 to Present
Sugarloaf Key, Florida

- Responsible in charge Professional Surveyor and Mapper
- Control and oversee all survey operations for this company
- Manage and oversee all employees

Survey Manager

Charley Toppino and Sons

01/2009 to 11/2011
Key West, Florida

- Controlled all survey operations for this company.
- Reported directly to the owners of the company on all surveying projects

Party Chief

O'flynn Surveying

05/2007 to 01/2009
Key West, Florida

- Controlled all field operations
- Drafted field line work utilizing AutoCad
- Calculated and prepared coordinates for field staking
- Consulted with clients regarding our services.

Survey Manager

Isaacs Surveying

06/1998 to 05/2007
Key West, Oklahoma

- Controlled 1-4 man field crews
- Produced design survey AutoCAD files
- Researched deeds and wrote legal descriptions
- Worked in the field with GPS, Robotics, Total Stations, Digital Levels, etc.
- Worked on projects from the federal to the private level.
- Traveled across the United States providing surveying services.

Hilary J. Stevens

8508 Leonard Dr, Silver Spring MD 20910 | 302-379-3771 | HilaryStevens@CoastalRiskConsulting.com

Education

- University of Delaware** **2006 – 2011**
- Completed coursework and qualifying exams for a Ph.D. in Geological Sciences
 - Research focus: Morphodynamics of Fetch Limited Barrier Beaches in Delaware Bay
- Master of Forest Science, Yale University** **1999**
- B.A. in Earth and Environmental Sciences, Wesleyan University** **1996**

Experience

- Science Team Member & National Capitol Representative, Coastal Risk Consulting** **2017 - Present**
- Provide technical guidance on coastal adaptation and resilience for municipal and regional climate change and sea level rise planning reports.
 - Serve as representative to federal agencies and corporate partners.
- Adjunct Professor, Roger Williams University** **Spring 2017**
- Coastal Geologist, Coastal Resource Center** **2011 – 2014**
- Developed and implemented coastal climate change vulnerability assessments for foreign aid programs in West Africa and Southeast Asia.
 - Provided technical assistance such as land use planning, shoreline change monitoring, and relocation planning, in developing climate change adaptation strategies.
 -
- Pacific Islands Technical Assistant, Coastal Resources Management Office** **2004 – 2006**
- Wrote natural resource management plans for Coastal Resources Management Office.
 - Served on interagency working groups managing wetlands, watersheds, storm water, and zoning.
- Coastal Resources Management Volunteer, U.S. Peace Corps** **2001 – 2003**
- Served as technical advisor to municipal government in natural resource management and eco-tourism development.
- Program Coordinator, Quebec Labrador Foundation** **1999 – 2000**
- Managed conservation and community outreach program in northern New England.
- Development and Education Associate, Earthwatch** **1996 – 1997**
- Researched and assisted drafting proposals for international science and education programs.

[illegible]

I, the undersigned hereby duly sworn, depose and say that no portion of the sum herein bid will be paid to any employees of the City of Key West as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: Paul H. Liu

Sworn and subscribed before me this

26 day of FEBRUARY, 2018.


NOTARY PUBLIC, State of Florida at Large

My Commission Expires: 5/22/19

INDEMNIFICATION

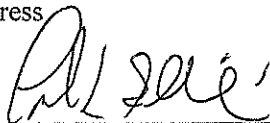
To the fullest extent permitted by law, the CONSULTANT expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents, and employees (herein called the "indemnitees") from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONSULTANT, its Sub-consultants or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONSULTANT's insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONSULTANT under workers' compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONSULTANT or of any third party to whom CONSULTANT may subcontract a part or all the Work. This indemnification shall continue beyond the date of completion of the work.

CONTRACTOR: Vision Engineering and Planning, LLC

SEAL: Jacqueline M. Salcedo Romo
NOTARY PUBLIC
Prince George's County, MD
Commission Exp 05/22/2019

1451 W. Cypress Creek Rd, Suite 300
Address


Signature

Paul L Gilliam
Print Name

President
Title

2/27/18
Date



**SWORN STATEMENT UNDER SECTION 287.133(3)(a)
FLORIDA STATUTES ON PUBLIC ENTITY CRIMES**

**THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICE
AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted with Bid, Bid or Contract No. 18-001 for
City of Key West General Traffic Engineering Services
2. This sworn statement is submitted by Vision Engineering and Planning, LLC
(Name of entity submitting sworn statement)
whose business address is 1451 W. Cypress Creek Rd, Suite 300
Ft. Lauderdale, FL 33309 and (if applicable) its Federal
Employer Identification Number (FEIN) is 26-0484574 (If the entity has no FEIN,
include the Social Security Number of the individual signing this sworn statement.)
3. My name is Paul L Gilliam and my relationship to
(Please print name of individual signing)
the entity named above is President.
4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any Bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.
5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means
 1. A predecessor or successor of a person convicted of a public entity crime: or
 2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which Bids or applies to Bid on contracts for the provision of goods or services

let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

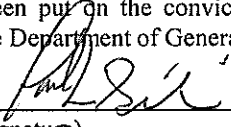
☒ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

☐ There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

☐ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

☐ The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)


(Signature)

Paul L. Gilliam

STATE OF MARYLAND (Date)

COUNTY OF ANNE ARUNDEL

PAUL LAMONT GILLIAM

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

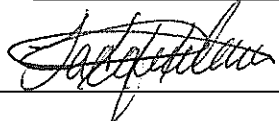
JACQUELINE SALCEDO

(Name of individual signing)

who, after first being sworn by me, affixed his/her signature in the

space provided above on this 26 day of FEBRUARY, 2018.

My commission expires:
NOTARY PUBLIC

 5/22/19

NON-COLLUSION AFFIDAVIT

[illegible]

I, the undersigned hereby declares that the only persons or parties interested in this Proposal are those named herein, that this Proposal is, in all respects, fair and without fraud, that it is made without collusion with any official of the Owner, and that the Proposal is made without any connection or collusion with any person submitting another Proposal on this Contract.

By: Pauline

Sworn and subscribed before me this

26 day of FEBRUARY, 2018.

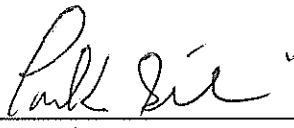

NOTARY PUBLIC, State of Florida at Large

My Commission Expires: 5/22/19

CONE OF SILENCE AFFIDAVIT

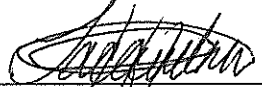
STATE OF MARYLAND)
 : SS
COUNTY OF ANNE ARUNDEL)

I the undersigned hereby duly sworn depose and say that all owner(s), partners, officers, directors, employees and agents representing the firm of Vision Engineering and Planning have read and understand the limitations and procedures regarding communications concerning City of Key West issued competitive solicitations pursuant to City of Key West Ordinance Section 2-773 Cone of Silence (attached).


(signature)
2/26/18
(date)

Sworn and subscribed before me this

26 Day of FEBRUARY, 2018.

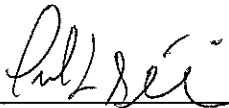

NOTARY PUBLIC, State of MARYLAND at Large

My Commission Expires: 5/22/19

EQUAL BENEFITS FOR DOMESTIC PARTNERS AFFIDAVIT

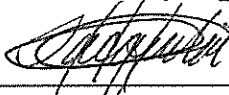
STATE OF MARYLAND)
 : SS
COUNTY OF ANNE ARUNDEL)

I, the undersigned hereby duly sworn, depose and say that the firm of
Vision Engineering and Planning provides benefits to domestic partners of its employees on the same
basis as it provides benefits to employees' spouses per City of Key West Ordinance Sec. 2-799.

By: 

Sworn and subscribed before me this

26th day of FEBRUARY, 2018.


NOTARY PUBLIC, State of MARYLAND at Large

My Commission Expires: 5/22/19

Detail by Entity Name

Florida Limited Liability Company
VISION ENGINEERING AND PLANNING, LLC

Filing Information

Document Number L14000076215
FEI/EIN Number 26-0484574
Date Filed 05/12/2014
State FL
Status ACTIVE

Principal Address

1451 W. CYPRESS CREEK RD
SUITE 300
FORT LAUDERDALE, FL 33309

Mailing Address

5850 Waterloo Road
Suite 140
Columbia, MD 21045

Changed: 08/05/2016

Registered Agent Name & Address

GILLIAM, PAUL L
1451 W. CYPRESS CREEK RD
SUITE 300
FORT LAUDERDALE, FL 33309

Authorized Person(s) Detail

Name & Address

Title CEO

GILLIAM, PAUL L
1451 W. CYPRESS CREEK RD
FORT LAUDERDALE, FL 33309

Annual Reports

Report Year	Filed Date
2016	08/05/2016
2017	04/18/2017
2018	01/23/2018

Document Images

01/23/2018 – ANNUAL REPORT	View image in PDF format
04/18/2017 – ANNUAL REPORT	View image in PDF format
08/05/2016 – ANNUAL REPORT	View image in PDF format
02/22/2015 – ANNUAL REPORT	View image in PDF format
05/12/2014 – Florida Limited Liability	View image in PDF format

2018 FLORIDA LIMITED LIABILITY COMPANY ANNUAL REPORT

DOCUMENT# L14000076215

Entity Name: VISION ENGINEERING AND PLANNING, LLC

Current Principal Place of Business:

1451 W. CYPRESS CREEK RD
SUITE 300
FORT LAUDERDALE, FL 33309

Current Mailing Address:

5850 WATERLOO ROAD
SUITE 140
COLUMBIA, MD 21045 US

FEI Number: 26-0484574

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

GILLIAM, PAUL L
1451 W. CYPRESS CREEK RD
SUITE 300
FORT LAUDERDALE, FL 33309 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE:

Electronic Signature of Registered Agent

Date

Authorized Person(s) Detail :

Title CEO
Name GILLIAM, PAUL L
Address 1451 W. CYPRESS CREEK RD
City-State-Zip: FORT LAUDERDALE FL 33309

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am a managing member or manager of the limited liability company or the receiver or trustee empowered to execute this report as required by Chapter 605, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: PAUL L GILLIAM

PRESIDENT

01/23/2018

Electronic Signature of Signing Authorized Person(s) Detail

Date