

**Concerned Citizens of Tarpon Springs, Inc. Exhibit List  
11/9/21 Anclote Harbor Quasi-Judicial Hearing**

<b>1. Affidavit of Charles Andrew Roark.....</b>	<b>1</b>
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**AFFIDAVIT OF CHARLES ANDREW (DREW) ROARK, PE, CTL**

STATE OF FLORIDA  
COUNTY OF LEON

CHARLES ANDREW ROARK, being first duly sworn upon his oath deposes and states as follows:

1. I am over eighteen (18) years of age and am competent to testify to the contents of this Affidavit based upon my own personal knowledge of the facts and circumstances set forth herein.

2. I am a PE and CTL with over 25 years of experience in the transportation consulting industry with over 10 years of senior management experience in the transportation consulting industry. A true and correct copy of my resume is attached as Exhibit "1." I have experience from traffic data collection to directing the Transportation Sector for the Southeast US for large engineering firms. My experience is broad across many areas within the industry, with technical specialties primarily in the area of traffic engineering and planning. I have been directly involved with multiple Project Development and Environment (PD&E) studies, managed specialty projects such as the Florida Department of Transportation Central Office Transportation Statistics Data Support project and the Florida Statewide Motor Carrier Compliance General Consultant contract. I lived and worked in Tampa Bay for many years prior to relocating to Tallahassee.

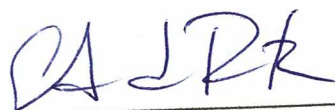
3. I was retained by Concerned Citizens of Tarpon Springs, Inc., (also known as Friends of the Anclote River), to evaluate the technical traffic engineering issues associated with the Morgan Group's Updated Traffic Impact Analysis dated July 2021, and Gap Study performed by Kimley-Horn for the Anclote Harbor project in Tarpon Springs.

4. I live in Tallahassee and am only available to testify remotely. Concerned Citizens' attorney notified the City of my request to testify remotely on several occasions in advance of the hearing. I have made a good faith effort to testify in person and cannot. I am happy to testify, take questions from the Commission, and be cross-examined virtually on November 9, 2021 at a time certain.

5. I wrote a report called "Anclote Harbor Apartments Traffic Impact & Gap Study Review." A true and correct copy of it is attached hereto as Exhibit "2."

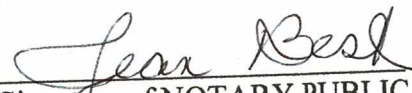
6. During the October 26, 2021 hearing, Morgan Group's consultant Christopher Hatton referenced and responded to my report on slides 47 and 48 of the Morgan Group powerpoint presentation. Because I was not able to testify virtually, I was not able to provide a response. Attached as Exhibit "3" are my responses to Mr. Hatton's slides. Again, I am making myself available virtually for questions from the Commission and cross-examination from the Morgan Group at a time certain on November 9, 2021.

FURTHER AFFIANT SAYETH NOT.

  
CHARLES ANDREW ROARK

STATE OF FLORIDA  
COUNTY OF LEON

Sworn to and subscribed before me, the undersigned authority, on this 8<sup>TH</sup> day of NOVEMBER 2021, by CHARLES ANDREW ROARK, who is ( ☒ ) personally known to me or ( ) who produced \_\_\_\_\_ as identification.

  
Signature of NOTARY PUBLIC

JEAN BEST  
Print Name of Notary

My Commission Expires: 3/15/2025



## **EXHIBIT 1**



**CHARLES ANDREW (DREW) ROARK, PE, CTL**

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**Experience**

Mr. Roark has over 25 years of experience in the transportation consulting industry with over 10 years of senior management experience in the transportation consulting industry. He has experience from traffic data collection to directing the Transportation Sector for the Southeast US for large engineering firms. As is shown below, although Mr. Roark's experience is broad across many areas within the industry, his technical specialties are primarily in the area of traffic engineering and planning. Mr. Roark has been directly involved with multiple Project Development and Environment (PD&E) studies, managed specialty projects such as the Florida Department of Transportation Central Office Transportation Statistics Data Support project and the Florida Statewide Motor Carrier Compliance General Consultant contract. Mr. Roark is experienced in preparation and review of transportation impact studies for numerous Developments of Regional Impact (DRI) throughout the state of Florida. His experience has included preparation and supervision of data collection programs, coordination with local review agencies, preparation of traffic signal warrant reports, modeling of future traffic volumes using the FSUTMS model, calculations of projected impact fees including independent impact fee studies and preliminary roadway planning and design.

Mr. Roark is also experienced in the planning for surface transportation roadways of airports. His experience in this area includes the development of software used as a planning tool for curb fronts, as well as general planning for airport circulation roadways.

Project experience includes:

- City of Tallahassee Traffic Signal Management Plan (TSMP). Tallahassee, Florida. Traffic Engineer. The TSMP is a process developed by FHWA to provide a framework for delivery of high-quality service to the public through an efficient and well-maintained traffic signal system. The City of Tallahassee's goals were to develop a Traffic Signal Strategic Business Plan which would provide a succinct description of all activities required for City staff to manage the traffic signal program, offer a basis for introducing new staff to the processes relevant to their roles, both inside and outside the program or City, illustrate to management and outside funding agencies the structured approach to traffic signal management, specify an approach to strategically shift design, maintenance and operations from reactionary to proactive and to effectively plan for needed capital improvements, as well as other goals.
- Mobility Plan, City of Destin, Florida – 3TP, Traffic Engineer. Establishing an up-to-date mobility fee including a carrying capacity study, a full update and documentation of the City's mobility plans, an assessment of the role of land use in generating transportation demand, and mobility fee calculations tied to planned improvements. The outcome of the initiative will be to have a transportation strategy for the City that implements the Comprehensive Plan, supports current development decisions, mitigates the impact of new development, and promotes efficient, safe and convenient mobility options for Destin's residents, workers and visitors.
- Destin Traffic Signals Update, Destin, Florida – 3TP. This project included updating the phasing, timings, and geometries of all of the traffic signals within the City of Destin. As a sub to 3TP, Roark Engineering provided all of the services and deliverables including the updated Synchro files and models.
- US 319 at Songbird Avenue Traffic Signal Design. Crawfordville, Florida. Engineer of Record. Project includes a traffic signal design for an intersection on US 319, Crawfordville Highway. Mast arms were required and a unique design to avoid and minimize utility conflicts as well as voids found in the soil.

- First and Second Street Signal Designs, City of Fort Myers, Florida. Signal Design Lead. Project included the re-design of six traffic signals. Five of the intersections included mast arms, and one was strain pole. The intersections are located on First and Second Street, which were one-way pairs and were being converted back to two-way and taken over by the City of Fort Myers. Challenges included trying to re-use as much of the existing infrastructure as possible. Project included converting loop detectors to video detection and signal timings.
- Woodville Highway Safety Study. FDOT District 3, Tallahassee, Florida. Project Manager. Project included evaluation of five years of crash records to determine patterns and appropriate crash mitigation and crash modification factors using the Highway Safety Manual. Recommendations including conceptual designs and benefit cost analyses were included.
- Jasper Ocean Terminal, Jasper County South Carolina – Moffatt & Nichol. Project is the development of a roadway and rail construction concept to service the terminal operations for a 1,500-acre site including 7 million TEUs annual throughput capacity, berths for Post-Panamax ships, rail service, and highway access. Mr. Roark authored the Roadway and Rail Construction Concept Report.
- Maintenance Engineering and Inspection (MEI) Support, Florida Department of Transportation, District Three – Project Manager. This project supported the District Maintenance Office by providing the appropriate qualified staff of Inspectors, Inspector Aides, Quality Managers, etc. and the appropriate equipment to maintain the existing infrastructure within District Three. The project services included Plans Reviews, Advance Maintenance Contract Evaluation, Reporting System Maintenance, Utility Coordination, Permitting Inspection, Maintenance Inspection, CEI Support, Emergency Support, Safety Program, Document Control, Traffic Control Review, and other services.
- BluePrint 2000 General Engineering Consultant, Tallahassee, Florida. City of Tallahassee, Florida. Quality Assurance Manager. Support of the development, design, financing, and construction process for all projects administered under BluePrint 2000 Program, a 15-year sales-tax-funded transportation, floodway, and greenway improvement program. The program, which provides an effective and efficient infrastructure and natural resource management plan, has become one of the most successful community improvement efforts in the country and a model for environmental and economic consensus. The program has facilitated major corridor improvements, constructed stormwater and flood-control systems, helped preserve environmentally sensitive lands, and developed the first phase of a signature community park. The project also developed accurate construction cost estimates, facilitated necessary fieldwork, prepared project concept reports, and created a master plan to fit the anticipated sales tax revenue. Project team was also responsible for reviewing all plans, including bridge development reports, bridge hydrology reports, and construction plans, and for conducting value engineering studies for all disciplines, including structures.
- Transportation Statistics Data Support Contract, Florida Department of Transportation, Central Office (2012-2015) (multiple selections) - Project Manager/Officer. Involves a General Consultant contract supporting Central Office Statistics. This contract includes assignments in traffic monitoring (primarily relating to data extraction from the permanent count stations, teaching the Project Traffic Forecasting classes and development of the new Project Traffic Forecasting database), data collection (freight, RCI, RITA, SLD, Video Log, route sequencing and Quality Control processes), data analysis (HPMS, city-county mileage web site and VMT) and GIS Basemap (FREAC, Remote sensing, ArcGIS and ArcSDE application development and testing) areas.
- I-10 (SR 8) from Okaloosa County Line to East of SR 83 (US 331), Florida Department of Transportation, District 3, Walton County, Florida--Project Officer. Project is the design of resurfacing for over 18 miles of a four-lane interstate in Walton County, Florida. The project consists of milling and resurfacing the interstate, along with upgrades/additions to drainage facilities.

- US 98 (SR 30) from CR 30F(Airport Road) to the Walton County Line, Florida Department of Transportation, District 3 – Project Officer. Project is the design of a capacity improvement from four to six lanes. Our portion of the project included traffic data collection, analysis and signal design, noise analysis, landscape architecture, and permitting.
- I-10 (SR 8) from Apalachicola River to West of SR 12, Florida Department of Transportation, District 3, Leon County, Florida--Project Director. Project is the design of resurfacing for a four-lane interstate in Gadsden County, Florida. The project consists of milling and resurfacing the interstate, along with upgrades/additions to drainage facilities.
- Pensacola Bay Bridge Project Development and Engineering (PD&E) Study, Florida Department of Transportation, District 3--Project Director. Involved a PD&E study to evaluate the widening of a four-lane bridge to six lanes. Project included development of alternatives, engineering and environmental analysis to determine impacts associated with the alternatives, public meetings, selection of preferred alternative and documentation.
- Bannerman Road Corridor Study, Leon County, Florida--Project Manager. Preparation of a corridor study to analyze a two-lane divided roadway and its applicability to be widened to four lanes. Project includes traffic analysis, development of alternatives, evaluation of the preferred alignment, review of potential environmental impacts, public participation and reports documenting the analysis completed.
- I-75 at Bill Gardner Parkway Interchange Modification Report (IMR), Locust Grove, Georgia--Project Engineer. Responsible for developing opening, interim and design year, design hour traffic volumes and interchange alternatives. Performed capacity, CORSIM and operational analysis for the No-Build and Build alternatives. Responsible for quality assurance of the Interchange Modification Report (IMR).
- Motor Carrier Compliance (OMCC) General Consultant, Florida Department of Transportation, Central Office--Project Manager. A General Consultant contract providing architectural and engineering services, including planning, environmental, building design, geotechnical, landscaping, developing design criteria for design-build, permitting and other necessary services to assist in the planning, construction and management of various projects and facilities around the state of Florida managed by the OMCC.
- Transportation Statistics Support Contract, Florida Department of Transportation, Central Office (2006-2013)--Project Manager. Involves a General Consultant contract supporting Central Office Statistics. This contract includes assignments in traffic monitoring (primarily relating to data extraction from the permanent count stations, teaching the Project Traffic Forecasting classes and development of the new Project Traffic Forecasting database), data collection (RCI, RITA, SLD, Video Log, route sequencing and Quality Control processes), data analysis (HPMS, city-county mileage web site and VMT) and GIS Basemap (FREAC, Remote sensing, ArcGIS and ArcSDE application development and testing) areas.
- Destin Traffic Study, Destin, Florida--Project Manager. Traffic study analyzing a new alignment extension of a roadway connecting two roadways. Project included traffic data collection and analysis using Synchro software and report.
- Comprehensive Plan Update, Southwest Florida International Airport, Fort Myers, Florida--Transportation Engineer. Involved a general planning study of the Southwest Florida International Airport (RSW) to update the local comprehensive plan and to remove RSW from the DRI process in Florida. Responsibilities included traffic and transportation analysis of roadway surrounding and within the airport, including airport trip generation, distribution, assignment and analysis.
- SR 70, 34th Avenue to Berman Road Project Development and Engineering (PD&E) Study, Florida Department of Transportation, District 1--Project Manager. Involved a PD&E study to widen SR 70

from two lanes to four lanes. Project included development of alternatives, engineering and environmental analysis to determine impacts associated with the alternatives, public meetings, selection of preferred alternative and documentation.

- Westside Boulevard from I-4 to Osceola/Polk County Line Route Study, Polk County, Florida--Project Manager. Preparation of a corridor study for a new segment of Westside Boulevard. Project includes traffic analysis, development of alternatives, evaluation of the preferred alignment, review of potential environmental impacts, public participation and reports documenting the analysis completed.
- SR 54 (West of CR 579 to East of Curley Road), Pasco County Government, Pasco County, Florida--Project Manager. Under the Pasco Continuing Professional Services Agreement, prepared a Project Development and Environment (PD&E) study to be carried forward as a State Environmental Impact Report to determine needed improvements to this roadway. Project includes traffic projection to the 2025 design year, engineering analysis to determine right-of-way requirements for alternatives developed, environmental evaluation and a public involvement program.
- Clinton Avenue Extension (McKendree Boulevard to East of Curley Road) Pasco County, Florida--Project Manager. Under the Pasco Continuing Professional Services Agreement, prepared a corridor study for the new segment of Clinton Avenue. Project includes traffic analysis, development of alternatives, evaluation of the best-fit alignment, review of potential environmental impacts, public participation and reports documenting the analysis completed. Right-of-way maps prepared to document existing conditions.
- CR 54 (US 27 to US 17/92), Polk County Government, Polk County, Florida--Project Manager. Under the Pasco Continuing Professional Services Agreement, prepared a corridor study for this segment of CR 54. Project includes traffic analysis of existing conditions, projection of traffic to the 2025 design year and determining of future laneage needs. Alternatives developed and analyzed to determine future right-of-way requirements.
- Florida's Turnpike at the Lake Worth Road Interchange Project Development and Environment (PD&E) Study, Florida's Turnpike Enterprise, Palm Beach County, Florida--Engineering Lead. Prepared a PD&E study to be carried forward as a State Environmental Impact Report to determine needed improvements to this Interchange. Project includes engineering and environmental analyses to determine impacts associated with alternatives developed.
- US 27 Weigh-in-Motion (WIM) Project Development and Environment (PD&E) Study, Florida Department of Transportation, District 1, Glades and Highland Counties, Florida--Project Manager. Prepared a PD&E study re-evaluation to locate two WIM stations on US 27 between SR 29 in Glades County and SR 70 in Highlands County. Project included a Site Selection Report and development of alternatives. The environmental evaluation included sand skink surveys to determine whether this species existed at several potential sites. The public involvement program included coordination with county officials, a Public Information Workshop and Public Hearing.
- I-4 Weigh-in-Motion (WIM) Project Development and Environment (PD&E) Study, Florida Department of Transportation, District 1--Transportation Engineer. Prepared a PD&E study to locate two WIM stations on I-4 between I-75 and US 27. Project included projection of traffic volumes on I-4 to the 2030 design year, preparation of a Site Selection Report, engineering analysis to determine site and ramp geometry, environmental evaluation of alternatives and public involvement program.
- Hillsborough County Signal Warrants – Hillsborough County Government, Hillsborough County, Florida – Project Manager. As part of an on-call contract this project included providing traffic signal warrant analyses at intersections specified by Hillsborough County. Field and traffic volume count data were collected at each intersection. Scope included analyzing dozens of intersections that were suspected of the need for a signal or were citizen inquiries.



- Hillsborough County Intersection Master Plan Program – Hillsborough County Government, Hillsborough County, Florida – Project Manager. As part of an on-call contract this project included providing cost effective solutions to specified issues at intersections in Hillsborough County. Traffic volumes and other data were collected at each intersection. Each intersection was analyzed to determine the issue and a cost-effective solution was developed and associated benefits were developed. All of the intersections were then prioritized based on b/c ratios.
- Hillsborough County Traffic Calming Program – Hillsborough County Government, Hillsborough County, Florida – Project Manager. Essentially a traffic count program to establish traffic volumes on local Hillsborough County roadways to determine appropriate traffic calming strategies. Traffic counts were at hundreds of locations around the county and included tube and magnetic card counters.
- Pauls Drive (Brandon Main Street) from Brandon Boulevard to Bandon Parkway, Hillsborough County Government, Hillsborough County, Florida--Transportation Engineer. Prepared a Project Development and Environment (PD&E) study to determine typical sections and alignment to Pauls Drive (Brandon Main Street). Project included traffic analysis, development of alternatives, evaluation of the best-fit alignment, review of potential environmental impacts, public participation and reports documenting the analysis completed. Right-of-way maps prepared to document existing conditions.
- Dover/Little/Durant Intersection Improvement Study, Hillsborough County Government, Hillsborough County, Florida--Project Manager. Preparing a study to examine existing and future traffic operations, document accident occurrences and review potential solutions to improve geometry at this intersection.
- I-275/SR 60/I-4 CORSIM Evaluations, Tampa, Florida--Transportation Engineer. Simulation and evaluation study using CORSIM to identify problem areas for opening-day traffic operations for the combined interim improvements on LINKS, I-275 and I-4.
- Busch Boulevard CMS Corridor Study, Tampa, Florida--Transportation Engineer. Corridor study to identify problem areas and potential low-cost solutions to improve mobility by reducing congestion and maximizing the potential for alternative modes.
- Multimodal Transportation Needs Plan, Plant City, Florida--Transportation Engineer. Study to develop an action plan for transportation improvements within the city of Plant City. Responsibilities included data collection and analysis, agency coordination and report preparation.
- CR 578/County Line Road Project Development and Environment (PD&E) Study, Pasco and Hernando Counties, Florida. Multilane improvements to CR 578 and an extension of CR 576. Responsibilities included transportation analyses of CR 578 and CR 576 for multiple development years with alternatives.
- SMATS Long-Range Transportation Plan Update, Sarasota and Manatee Counties, Florida. Aided in future land-use plans to be used in the development of the FSUTMS models. This project developed a cost-constrained multimodal transportation plan for Sarasota and Manatee Counties.
- Lee Roy Selmon Expressway Project Development and Environment (PD&E) Study, Tampa Florida. Reversible lanes on the expressway from Brandon to downtown Tampa. Responsibilities included analyses for the expressway and ramps for all alternatives.
- Lee Roy Selmon Expressway Reversible Lanes Study. Traffic Engineer. Tampa-Hillsborough Expressway Authority. Tampa, FL. Project was part of a General Engineering contract to analyze elevated reversible expressway lanes utilizing CORSIM modeling throughout the project.

- Bearss Avenue CMS Corridor Study, Tampa, Florida. Corridor study to identify problem areas and potential low-cost solutions to improve mobility by reducing congestion and maximizing the potential for alternative travel modes. Responsibilities included analyses for intersections within the study.
- Tampa Regional Goods Movement Study, Florida Department of Transportation, District 7--Transportation Engineer. Study to develop recommendations for actions which will improve the safety, efficiency and effectiveness of goods movement in the Tampa Bay area. This study identifies and addresses the major issues and concerns of goods movement in the area and provides a blueprint for actions that need to be undertaken to ensure an adequate and efficient system of freight movement in Tampa Bay.
- JFK International Airport Curbside Analysis. Curbside analyses for all nine terminals at John F. Kennedy International Airport. Responsibilities included data collection and development of a computer model to replicate existing and future conditions.
- Development and Enhancement of Impact Fee Schedule, Collier County, Florida. Performed studies to determine the trip rate and trip lengths for many existing and new land-use types to develop an impact fee schedule that would more accurately assess impact fees to multiple land uses.
- Transportation Impact Analyses. Conducted transportation impact analysis for the following projects as well as over a dozen others in the Tallahassee Area:
  - Florida Mall DRI, Orange County, Florida
  - Northbrook Development, Collier County, Florida
  - Riviera Dunes DRI, Manatee County, Florida
  - Sarasota Memorial Hospital, Sarasota County, Florida
  - Connerton DRI, Pasco County, Florida
  - Tampa Tech Park, Hillsborough County, Florida
- Development of Regional Impact Reviews, Florida. Conducted a thorough review of the DRI. Responsibilities included checking methodologies and procedures for reasonableness and accuracy, identifying errors and suggesting solutions or alternative procedures. Includes the following DRIs:
  - Saddlebrook, Pasco County, Florida
  - Independence Park, Hillsborough County, Florida
  - Westshore Areawide, Hillsborough County, Florida
  - Northwood, Pasco County, Florida
  - Cypress Creek, Pasco County, Florida
  - Tara, Manatee County, Florida
  - Long Lake Ranch, Pasco County, Florida
  - South Shore Corporate Park, Hillsborough County, Florida
  - Sunlake Centre, Pasco County, Florida
- CR 581 (Bruce B. Downs Boulevard) Corridor Study. Corridor study to identify problem areas and potential low-cost solutions to improve mobility by reducing congestion and maximizing the potential for alternative travel modes. Responsibilities included analyses for intersections within the study.

## **Professional Credentials**

Bachelor of Science in Civil Engineering, University of South Florida, 1997

Registered Professional Engineer: Florida (No. 56826), 2001

Registered Professional Traffic Operations Engineer: (No. 1105), 2003 - 2009

Board Member, Tampa Bay Chapter Institute of Transportation Engineers, 2005 - 2007

Member, Institute of Transportation Engineers, Planning Council

**CHARLES ANDREW (DREW) ROARK**  
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Member, Leadership Tallahassee Class 26  
Board Member, Tallahassee Economic Development Council, 2014  
Certification in Transportation and Logistics (CTL), 2014 – Lifetime Member  
Public Relations Committee Member, ACEC FL - Current  
Transportation Committee Member, ACEC FL – Current  
Small Business Subcommittee Member, ACEC FL – Current  
Florida Engineering Society – Big Bend Chapter – Current

Updated 10/19/2021

## **EXHIBIT 2**



# ANCLOTE HARBOR APARTMENTS TRAFFIC IMPACT & GAP STUDY REVIEW

Tarpon Springs, Florida



By: Drew Roark, PE, CTL

[drew@roarkeng.com](mailto:drew@roarkeng.com)



## EXECUTIVE SUMMARY

A summary of the technical traffic engineering issues associated with the applicant's Updated Traffic Impact Analysis dated July 2021, and Gap Study performed by Kimley-Horn for the referenced project and dated September 1, 2021, are included below.

The overall theme from these traffic impact analysis issues in combination with the Gap Study issues is that the studies contain significant flaws to the point that the accuracy of the results of these studies are unreliable.

### Gap Study Summary:

1. The Gap Study evaluated available gaps, not accepted gaps.
2. The sample size was lower than what is required for a statistically significant sample.
3. The study incorrectly assumed the required movement was clearing of three lanes, and not merging into northbound traffic.
4. The study used current gaps with current traffic with no analysis of future conditions over the life of this development.
5. The study cited an Exhibit 19-10 from the outdated 2010 Highway Capacity Manual (HCM). The current version of the HCM is the 6<sup>th</sup> Edition which was released in 2016.
6. The study used the incorrect value for the Base Critical Headway.
7. The study erroneously did not include follow up headway.
8. The analysis did not include the total right turns coming out of the driveway.

After a basic revision of the analysis correcting some of these issues, it appears that sufficient gaps are not available. With insufficient gaps, potential risks are likely to occur that are different from what was presented in the studies.

The risks are associated with drivers getting frustrated to turn out of the development due to the lack of available gaps (openings in traffic). As the number of safe gaps reduce and the wait times increase, drivers will begin to accept shorter and shorter gaps and will attempt to "shoot" out into traffic or "shoot the gap." When this happens, a single misjudgment or a single inattentive driver can more easily cause a serious crash. With the speed limit of 55mph on US 19, that serious crash could result in a serious injury or worse.

## DETAILED GAP STUDY REVIEW ANALYSIS

### THE GAP STUDY EVALUATED AVAILABLE GAPS, NOT ACCEPTED GAPS

While the site does not exist today, making it impossible to collect accepted gaps for this site, it should be noted that there is a distinct difference between available gaps and accepted gaps. Accepted gaps are based on the real-world actual users and take into account many important factors like actual sight distance, driver mix/driver behavior, etc. By using available gaps, this analysis relies heavily on the theory of gaps, and not necessarily the actual performance of these intersections. Other factors, such as sight distance could play a significant role in the accepted gap.

### THE SAMPLE SIZE WAS LOWER THAN WHAT IS REQUIRED FOR A STATISTICALLY SIGNIFICANT SAMPLE

From FDOT MUTS 2021 Section 8.5.1 Estimating Critical Gap:

*"The engineer should determine in advance of the field data collection the bin size in seconds to be used. Per the ITE Manual of Transportation Engineering Studies, 2nd Edition, 2010, Chapter 6 (Page 109-112), a suggested sample size of 200 acceptances for a 2-second interval is provided. If a 1-second bin interval is used for the data collection, a 500-sample size of acceptances is suggested."*

The sample size for NB PM peak hour is 466. This is short of the 500-sample size needed for a statistically significant sample. The impact of this item on the analysis is not considered to be influential.

### THE STUDY INCORRECTLY ASSUMED THE REQUIRED MOVEMENT WAS CLEARING OF THREE LANES, AND NOT MERGING INTO NORTHBOUND TRAFFIC

The study assumed the clearing (driving across) of three lanes, however, traffic would need to stay in the left lane for a short distance to get to the channelized deceleration lane in the median. While this distance is short as shown in the analysis, there is a need to merge into cross traffic which could impact the gap acceptance. This is another item that would be captured in a real-world accepted gap versus available gap. With a higher gap acceptance time required, the number of available gaps will be reduced, therefore there may not be enough gaps for the demand for gaps from the traffic generated by the

development. Or drivers who become impatient may try to "shoot the gap" and create a dangerous situation.

## THE STUDY USED CURRENT GAPS WITH CURRENT TRAFFIC WITH NO ANALYSIS OF FUTURE CONDITIONS OVER THE LIFE OF THIS DEVELOPMENT

As traffic continues to grow, congestion will increase, and available gaps will decrease. The driveways should be shown to operate sufficiently and safely beyond the year that the project is built. For roadway projects, this is typically 20 years. By only considering the current conditions, this analysis is not considering how this intersection may perform during the life of this development or the driveway intersections.

## THE STUDY CITED AN EXHIBIT 19-10 FROM THE OUTDATED 2010 HIGHWAY CAPACITY MANUAL (HCM). THE CURRENT VERSION OF THE HCM IS THE 6<sup>TH</sup> EDITION WHICH WAS RELEASED IN 2016

The study cited Exhibit 19-10 from the 2010 Highway Capacity Manual (HCM). The current version of the HCM is the 6<sup>th</sup> Edition which was released in 2016. The values in the referenced table, however, did not change from the 2010 version to the 6<sup>th</sup> Edition, therefore there is no impact of this on the analysis. However, the latest version of traffic engineering manuals should be utilized for all analyses.

## THE STUDY USED THE INCORRECT VALUE FOR THE BASE CRITICAL HEADWAY

The referenced Exhibit 19-10 from the 2010 HCM is shown below.

Vehicle Movement	Base Critical Headway, $t_{c,base}$ (s)		
	Two Lanes	Four Lanes	Six Lanes
Left turn from major	4.1	4.1	5.3
U-turn from major	N/A	6.4 (wide) 6.9 (narrow)	5.6
Right turn from minor	6.2	6.9	7.1
Through traffic on minor	1-stage: 6.5	1-stage: 6.5	1-stage: 6.5*
	2-stage, Stage I: 5.5 2-stage, Stage II: 5.5	2-stage, Stage I: 5.5 2-stage, Stage II: 5.5	2-stage, Stage I: 5.5* 2-stage, Stage II: 5.5*
Left turn from minor	1-stage: 7.1	1-stage: 7.5	1-stage: 6.4
	2-stage, Stage I: 6.1 2-stage, Stage II: 6.1	2-stage, Stage I: 6.5 2-stage, Stage II: 6.5	2-stage, Stage I: 7.3 2-stage, Stage II: 6.7

\* Use caution; values estimated.

Note: "Narrow" U-turns have a median nose width < 21 ft; "wide" U-turns have a median nose width ≥ 21 ft.

**Exhibit 19-10**  
Base Critical Headways for TWSC  
Intersections



The value for the Base Critical Headway used in the Gap Study was 6.9 seconds. The 6.9 second value is for right turns from a minor street onto a four-lane facility. US 19 is six lanes. The six-lane base critical headway is 7.1 seconds. Also, while the right turn base critical gap is 7.1 seconds, this analysis includes vehicles that must cross all three northbound lanes to get into the turn lane to make a u-turn. Therefore, at a minimum, for all of these vehicles, the left turn from minor for six lanes stage 1 of the 2-stage left turn should be used. This is 7.3 seconds. This is a significant error in the analysis. This will increase the assumed gap required and result in fewer available gaps.

## THE STUDY ERRONEOUSLY DID NOT INCLUDE FOLLOW UP HEADWAY

The study did not include follow up headway. Follow up headway is the time for the 2nd vehicle in queue to move up to the major road cross street. The Base Follow Up Headway for Right turns on a 6-lane road is 3.9 seconds. Total base critical headway for right turns, beginning with the second vehicle in a queue onto a six-lane facility is 11.2 seconds. This does not mean that a single vehicle would require an 11.2 second headway. However, if there are multiple vehicles in a queue, the follow up headway would have to be included. Therefore, if there were a 30 second available gap, the number of assumed accepted gaps would be three  $(7.3 + (7.3 + 3.9) + (7.3 + 3.9))$ , not 4  $(7.3 * 4)$ . Also, this assumes there is a consistent and continual queue. This may not be the case in reality. Both this follow up headway and the critical headway (7.3 seconds) are both base numbers that are not adjusted for heavy vehicles. If they were adjusted, they would be longer, and the resulting number of available gaps would be less than what the analysis indicates.

## THE ANALYSIS DID NOT INCLUDE THE TOTAL RIGHT TURNS EXITING THE DRIVEWAY

The analysis only compared the right turns that were then u-turns and did not include the total right turns coming out of the driveway. The right turns that exited the driveway but continued north were not included in the analysis. These exiting driveway vehicles will impact the performance of the driveway and cause additional delay by requiring the critical and follow-up headway time. The total volume of traffic at the driveway should be included in the analysis. While the base critical headway for the right turning vehicles that do not need to get into the left lane to make a u-turn will be lower (7.1 seconds vs. 7.3 seconds), this will result in a higher demand at the driveways and significantly impact the performance.

## TRAFFIC IMPACT ANALYSIS ISSUES

1. Figure 2, Project Traffic Distribution on page 8 shows the percentage distribution of the project traffic. The applicant shows 35% of the project traffic travels to and from the north. The remaining 65% travels to and from the south. However, the FSUTMS model shows 33% to and from the north and 67% to and from the south.
2. Also on Figure 2, the northbound uturn and through movement at the location between the two project driveways show distribution percentages of 65% and 35%, respectively. However, only 90% of the project traffic is sent to this location northbound. Therefore, the through movement percentage should be 25% not 35%. The volumes developed did not carry this error.
3. On Figure 10, AM Peak Hour Seasonal Total Traffic Volumes, on page 23 shows a northbound through volume at both project driveways of 472 and 495 for the southern and northern driveways, respectively. The AM Peak Hour northbound background traffic is 1,501.
4. There are no LOS analyses for the project driveways provided in the report. The methodology agreement provided states, "A Level of Service (LOS) analysis will be included for the unsignalized project driveway." Although a Synchro LOS reports are provided in the appendices (pages 237, 239), it is not included in the body of the report. These analyses also included significant errors including only four northbound through volume (page 237) in the AM Peak Hour, and 27 northbound through traffic volume (page 239). This is different than the error identified in #3 above. Additionally, it appears that the PM Peak Hour analyses for the project driveway intersections were either not included in the appendices or were mislabeled as AM Peak Hour.

## DISCUSSION

Correcting base critical headway and including the base follow-up headway error (without making any other adjustments) the pm peak hour (4-5pm) for northbound appears to have a total of 53 available gaps that meet the required base critical headway and the base follow up headway. The volume assigned (without any other corrections) is 63.

While it is generally recognized that Right-Turn/U-Turn (RTUT) movements are safer than a Direct Left Turn (DLT), the RTUT design should demonstrate it will operate safely. With other adjustments including future growth, it is likely that acceptable gaps will not be available at buildout or in the future and gap acceptance will be forced to reduce which could cause an unsafe condition of vehicles attempting to "shoot the gap."

### **EXHIBIT 3**

## **Response to Mr. Hatton's "Mr. Roark's Gap Study Review – Response"**

### **A. Available Gaps vs. Accepted Gaps**

- **Actual "in-field gap evaluation" was conducted to evaluate sight distance/real-world users**

Sending out one vehicle to do a couple of test runs is not representative of the spectrum of drivers and vehicles that are in the general traveling public and is therefore not representative of "real-world users." There are many different capabilities and behaviors of both drivers and vehicles, therefore a real world sample would require a sampling of multiple driver types and vehicles.

### **B. Required Measurements of Crossing 3 Lanes/Merging**

- **Our analysis was a real world in-field evaluation that included merging.**

No comment.

- **Our data collected only gaps with no traffic in all 3 lanes**

If the analysis were to only include the vehicles that were turning right then making a uturn, this is acceptable. However, the gap times (with no traffic in all three lanes) would also be consumed by both follow up headway and the other right turning vehicles that continue north.

### **C. Current Traffic vs. Future Traffic**

- **Our data showed 70% more gaps than required (NB from 4-5 P.M.) and over 290% more gaps than required (NB 7-8 A.M.)**

Not sure what this comment is saying or how it is relevant to "Current Traffic vs. Future Traffic." The point of the current traffic vs. future traffic comment in my review was they only evaluated opening year traffic (2023), but this development would exist and operate well past 2023.

With respect to the gap analysis results, my analysis was quick based on the data provided in the appendix. My basic analysis was based on a corrected estimate of the gaps required from Table 19-10 in the HCM including follow up headway and the provided available gaps. This may need to be reevaluated to separate the analysis into two parts, one for right turn/uturn and another for just right turns, then summed together.



#### **D. Base Critical Headway**

- **Our analysis include a theoretical/more conservative 7 second gap requirement**

The theoretical gap is actually 7.1 seconds. An incorrect 6.9 seconds (for four lane highway) was used and follow up headway was not included, nor were the right turns that continued northbound.

#### **E. Follow-Up Headway (FUH)**

- **FUH is not relevant in cases such as ours where data collected with “gaps with no traffic” (due to the significant platooning from downstream signal)**

FUH is relevant as it will take time for the second (and subsequent) vehicle to move forward to the stop bar. This time consumes part of the available gap.

#### **F. Right Turns Exiting from Driveway**

- **Vehicles continuing northbound will be able to use gaps in outermost lane (easternmost lane) as well**

There was no time included in the analysis for this occurrence.

#### **G. Number of Gaps to Operate Acceptably**

- **70 accepted gaps (not 53, excluding not relevant FUH) meet even all right-turn measurements (63)**

Using the correct 7.1 seconds for Base Critical Headway and including Follow Up Headway, the apparent number of available gaps is 53, not 70.

**AFFIDAVIT OF RICHARD E. GEHRING**

STATE OF TENNESSEE  
COUNTY OF SEVIER

RICHARD E. GEHRING, being first duly sworn upon his oath deposes and states as follows:

1. I am over eighteen (18) years of age and am competent to testify to the contents of this Affidavit based upon my own personal knowledge of the facts and circumstances set forth herein.

2. I was retained by Concerned Citizens of Tarpon Springs, Inc., (also known as Friends of the Anclote River), to assess the Morgan Group's Anclote Harbors applications.

3. I testified on behalf of Concerned Citizens of Tarpon Springs, Inc. (also known as Friends of the Anclote River) during the October 27, 2021 quasi-judicial hearing for the Anclote Harbor project.

4. I am making myself available remotely for questions from the Commission and cross-examination from the Morgan Group at a time certain on November 9, 2021. I have good cause to appear remotely due to medical issues.

5. I would like to provide the following clarification to my testimony regarding the comprehensive plan districts for the Anclote Harbor project:

There is a clear pattern of inconsistency with the intent and structure of the Tarpon Springs Comprehensive Plan Districts and the adopted LDC. These districts are primarily defined as a combination of commercial and non-commercial uses intended to be intensive on a major arterial Road network. Converting highway oriented mixed-use commercial districts into a standalone residential development project is inconsistent with the intent and purpose of the plan districts and is such a major impact. Therefore, it

should be preceded by a land-use plan amendment to accomplish a standalone residential project.

The three principal policy areas being abrogated are as follows:

- a. Failure to aggregate into a consolidated mixed-use project for over 40-acre sites.
- b. Failure to follow the requirements of Residential/Office General (R/OG) Comp Plan district for a mixed-use project linking employment and residential use.
- c. Failure to provide a Mixed-Use Center by a complete restructuring of the intent and purpose of the General Commercial (CD) district, utilizing only the secondary use of residential and abandoning the primary uses allowed in the district thereby creating a monolithic residential project.

Tarpon Springs Comp Plan requires the aggregation of uses on large parcels located on arterial roadways creating FLUM commercial centers. Policy 1.1.11 of the Future Land Use Element provides, “*Require large scale development / redevelopment (40 acres or more) to adhere to mixed use and livable community objectives and policies set out in Goal 5 of this element.*” The larger parcel is Commercial General (26.65 acres) and the smaller parcel is Residential Office General (15.44 acres). The total site is 76.2 acres with 42 acres of upland, therefore it should adhere to mixed use and livable community objectives of Goal 5.

The Tarpon Springs Planning Director did not adhere to this requirement. She stated in her line-by-line policy review, “While not a mixed-use project” which clearly defines her understanding that the project is not in compliance with Policy 1.1.11. She then provides a description of developer proposed amenities including reducing

external trips. . But review of the requirements of mixed use and design criteria (some 58 policies) in Goal 5 are clearly being abandoned.

The Comprehensive Plan district policy structure mandates and requires a mixed-use format for the development of the plan categories on the subject site consisting of Residential/Office General (R/OG) and Commercial General (CG).<sup>1</sup> The Residential/Office General (R/OG) district requires Mixed-Use.<sup>2</sup> In the R/OG District, there is a Conjunctive Use Required and the wording is specific for BOTH uses to be provided. There is NO (and/or) in the defined use.

A unified plan of mixed-use within the proportional limits is required by the R/OG District. In my cross examination on October 27th, Attorney Scott McLaren, of HWH asked questions to clarify my objections to Residential Density flowing from the Land Use Districts of the Site. He quizzed me on the GC district and the R/OG District. My Compatibility Study concentrated on the predominant density of 400 DU coming from the CG secondary use list. I told him I did not concentrate on the R/OG district. He claimed there was Primary residential use in that R/OG District. Since that district was a lesser contributor to the 489 DUs claimed it was not prominent in my analysis. He treated this as my oversight, when there is Applicant and Planning Staff misunderstanding of the R/OG district. It has NO units because no plan was submitted

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<sup>1</sup> See *Objective 2.3* ("Mixed Use Land Use Categories: The mixed land use categories are provided to allow and encourage a range of complimentary uses in close proximity to facilitate shorter vehicle trips and alternative transportation choices such as walking and cycling. All mixed-use land categories shall require a mixture of uses distributed as follows within each category: Residential (5 percent to 30 percent), and Non-residential (70 percent to 95 percent). This requirement may be waived for parcels less than one acre.")

<sup>2</sup> See *Policy 2.3.1* ("Residential/Office General (R/OG): This category is generally appropriate to locations where it would serve as a transition from and urban activity center or more intensive non-residential use to low-density residential or public/semi-public use; and in areas where the size and scale of office and residential use is appropriate to free standing office, medium density residential or a combination thereof)...(a)" The primary uses shall be business/professional offices and residential uses.



with the required Conjunctive use of “Professional Office and Residential”. So, in my professional opinion there are no units to argue about because none were secured with an appropriate site plan submittal for “Mixed-Use” as required by Policy 1.1.11 for sites over 40 acres, the Mixed-Use Objective 2.3 and the requirements of the R/OG mixed use District. The applicant claims that there is a 75DUs and a density transfer of 23 DUs on the R/OG. But uses the 15.44 Acres site was never established because no such mixed-use plan was ever submitted.

The Commercial General (CG) district has Mixed-Use requirements. See Objective 2.4 and Policy 2.4.3 Internal to the (CG) District. The CG district’s primary structure is for a Mixed-Use District of BOTH primary and Secondary Uses. The proposal of the Applicant is contrary to the entire policy framework and eliminates Primary Uses and only has Secondary uses which are defined as follows: *Secondary Use - Secondary uses typically serve support functions to the primary land uses and are of secondary importance in terms of the area having zoning approval.*

The required Mixed-Use product is abandoned. It is my opinion the allocation of density to only residential purposes (a Secondary Use) in this application is NOT allowed. Therefore, it is inconsistent with the district MIXED-USE purposes, and it is totally inconsistent with the intent of the Comprehensive Plan District Designations and purposes and Intent shown in the Plan policies and mapping, that a standalone Residential Multi-family project can be established on this parcel avoiding all required primary uses and intents of the Parent Districts, and the Policy of the Land Use category. Any such dedicated single use effort requires a dedicated FLUM Amendment for a standalone Residential Multi-Family project with 489 DU.

In sum, it is my opinion that the proposed Anclothe Harbors development is not consistent with the adopted plan policy intent. No development order should be authorized relying on this land use configuration and the inconsistent desired assigned density.

FURTHER AFFIANT SAYETH NOT.

  
RICHARD E. GEHRING

STATE OF TENNESSEE  
COUNTY OF SEVIER

Sworn to and subscribed before me, the undersigned authority, on this 8 day of November, 2021, by RICHARD E. GEHRING, who is ( ) personally known to me or (X) who produced TN Driver License as identification.

  
Signature of NOTARY PUBLIC

Kaila Clark  
Print Name of Notary

My Commission Expires: 11-19-2024



# **FUTURE LAND USE ELEMENT**

## **CITY OF TARPON SPRINGS**

Prepared By  
THE CITY OF TARPON SPRINGS  
PLANNING AND ZONING DEPARTMENT

## V. FUTURE LAND USE GOALS, OBJECTIVES AND POLICIES

### Goal 1.

Protect the cultural heritage, historic resources, tourist economy and environmental setting of Tarpon Springs.

#### Objective 1.1

Ensure that all development is reviewed for compatibility with the cultural heritage, historic resources, tourist oriented economy, and impact upon natural resources and the environmental setting of Tarpon Springs;

Policy 1.1.1 Restrict the future expansion of nonconforming uses, and the establishment/expansion of uses not compatible with the established character of adjoining uses and the surrounding neighborhood

Policy 1.1.2 Protect the use of the City's natural resources including waterwells and wellhead protection area, beaches, shores, estuarine systems and wetlands in accordance with the recommendations and policies of the this element and of the Coastal Planning Area and Conservation Element.

Policy 1.1.3 Protect the use of historic resources in accordance with the recommendations and policies of the Historic Element

Policy 1.1.4. Require development proposals in the Coastal Planning Area to comply with the local and regional hurricane evacuation plan and the policies of the Coastal/Conservation Element

Policy 1.1.5 Require infill development, redevelopment and new development to take into account the natural floodplain functions in order to minimize disruption

Policy 1.1.6 Regulate development proposals in accordance with the requirements of the Future Land Use Map Section of this element;

Policy 1.1.7 Restrict the encroachment of incompatible, institutional, commercial, industrial and other uses with non residential characteristics into residential areas, and require their development where the use of existing facilities are maximized;

Policy 1.1.8 Utilize the Planned Development performance zoning regulations to buffer or separate residential development from high traffic areas, areas prone to flooding or natural disasters, and incompatible uses which may cause problems with noxious odors and noise

Policy 1.1.9 Prioritize light industrial uses over more potentially polluting heavier industries;

Policy 1.1.10 Where appropriate, require development proposals to evaluate and preserve wetlands and areas of significant upland habitat.

Policy 1.1.11 Require large scale development / redevelopment (40 acres or more) to adhere to mixed use and livable community objectives and policies set out in Goal 4 of this element.

Policy 1.1.12 Density and Intensity Standards for Development of areas of significant upland habitat:

- a) Maximum Impervious Surface: .50
- b) Minimum Open Space .30; Open Space shall be defined as any land or water in its natural condition and set aside for the use and enjoyment of the owners and occupants of such land or the public if so designated. Open space shall be reserved adjacent to wetlands to the maximum extent practicable.



Non-Residential; Public Educational Facilities; Community Gardens.

(c) Density / Intensity Standards

- Residential Use shall not exceed ten (10) dwelling units per acre.
- Residential Equivalent use shall not exceed and equivalent of 3.0 bed per permitted dwelling unit at 10 dwelling units per acre.
- Non-Residential use shall not exceed a floor area ration of .50, nor an impervious surface ratio of .75.

(d) Acreage Limitations: The following uses shall not exceed the respective acreage threshold designated for such uses. Any such use, alone or when added to existing contiguous like use(s), which exceeds the designated threshold shall require a plan map amendment that shall include such use and all contiguous like uses:

- Ancillary Non-Residential; Transportation Utility use: Shall not exceed a maximum area of three (3) acres.
- Institutional Use (except Public Educational Facilities which are not subject to this threshold): Shall not exceed a maximum area of five acres

Policy 2.2.6 **Residential Medium (RM)** (0-15 units/gross acre): The Residential Medium Land Use Category is intended for areas in close proximity urban activity centers, and is generally intended for areas that are to be developed in a medium density residential manner. This category is generally intended to serve as a transition between less urban and more urban residential and mixed use areas.

(a) Primary Uses - Residential

(b) Secondary Uses - Residential Equivalent; Public/Semi-Public; Ancillary Non-Residential; Public Educational Facilities; Community Gardens.

(c) Density / Intensity Standards

- Residential Use shall not exceed fifteen (15) dwelling units per acre.
- Residential Equivalent use shall not exceed and equivalent of 3.0 bed per permitted dwelling unit at 15 dwelling units per acre.
- Non-Residential use shall not exceed a floor area ration of .50, nor an impervious surface ratio of .75.

(d) Acreage Limitations: The following uses shall not exceed the respective acreage threshold designated for such uses. Any such use, alone or when added to existing contiguous like use(s), which exceeds the designated threshold shall require a plan map amendment that shall include such use and all contiguous like uses:

- Ancillary Non-Residential; Transportation Utility use: Shall not exceed a maximum area of three (3) acres.
- Institutional Use (except Public Educational Facilities which are not subject to this threshold): Shall not exceed a maximum area of five acres

Objective 2.3

**Mixed Use Land Use Categories:** The Mixed Land Use categories are provided to allow and encourage a range of complimentary uses in close proximity to facilitate shorter vehicle trips and alternative transportation choices such as walking and cycling. All mixed use land categories shall require a mixture of uses distributed as follows within each category: Residential (5 percent to 30 percent), and Non-residential (70 percent to 95 percent). This requirement may be waived for parcels less than one acre.

Policy 2.3.1 **Residential/Office General (R/OG):** This category is generally appropriate to locations where it would serve as a transition from and urban activity center or more intensive non-residential use to low-density residential or public/semi-public use; and in areas where the size and scale of office and residential use is appropriate to free standing office, medium density residential or a combination thereof.

- (a) The primary uses shall be business/professional offices and residential uses;

- (b) The secondary uses shall include public educational facilities, institutional, transportation utility, recreation open space, ancillary non-residential, residential equivalent; Community Gardens
- (c) Density / Intensity Standards  
Residential uses may be permitted up to a maximum of 15 dwelling units per acre
  - Residential equivalent shall not exceed 3 bed per residential unit at 15 units per acre.
  - Non-residential uses shall not exceed a floor area ratio of .40, nor an impervious surface ratio of .75
  - Mixed use – shall not exceed, in combination, the respective of units per acre and floor area ratio permitted, when allocated in their respective proportion to the gross land area of the property.
- (d) Acreage Limitations: The following uses shall not exceed the respective acreage threshold designated for such uses. Any such use, alone or when added to existing contiguous like use(s), which exceeds the designated threshold shall require a plan map amendment that shall include such use and all contiguous like uses:
  - Ancillary Non-Residential; Transportation Utility use: Shall not exceed a maximum area of three (3) acres.
  - Institutional Use (except Public Educational Facilities which are not subject to this threshold): Shall not exceed a maximum area of five acres
  - Personal Services/Office Support Use: Shall not exceed a floor area of 5,000 square feet; and no combination of such uses in any single multi-tenant building, or in the alternative, in any group of buildings that are integral to and function as part of a unified project, shall exceed 10 percent (10%) of the gross floor area of said buildings.

**Policy 2.3.2 Residential/Office/Retail (R/OR)**

- (a) Primary Uses: Office, Retail, Personal Services, Transient accommodation, Residential.  
Secondary Uses: Public/Semi-Public, Research and Development.
- (b) Access to abutting major roadways shall be limited in accordance with FDOT access management standards;
- (c) Cross-access to adjoining uses or parcels shall be required;
- (d) This category is intended to be consistent with the R/O/R category of the Countywide Future Land Use Plan;
- (e) Residential use – shall not exceed fifteen (15) dwelling units per gross acre;
- (f) Transient Accommodations shall not exceed 30 units per acre.
- (g) Residential equivalent use – shall not exceed an equivalent of 3 beds per unit at a maximum of 15 units per acre;
- (h) Nonresidential use – shall not exceed a floor area ratio (FAR) of 0.20 for commercial uses and 0.30 for office uses. The impervious surface ratio (ISR) shall not exceed 0.75;
- (i) Mixed use – shall not exceed, in combination, the respective of units per acre and floor area ratio permitted, when allocated in their respective proportion to the gross land area.
- (j) Acreage Limitations: The following uses shall not exceed the respective acreage threshold designated for such uses. Any such use, alone or when added to existing contiguous like use(s), which exceeds the designated threshold shall require a plan map amendment that shall include such use and all contiguous like uses:
  - Ancillary Non-Residential; Transportation Utility use: Shall not exceed a maximum area of three (3) acres.

- a. The primary uses shall be limited to the following:
  1. Wet and Dry Slip Marinas
- b. Secondary Uses shall be limited to:
  1. Residential
  2. Residential Equivalent
  3. Transient Accommodations
  4. Personal Service/Office Support
  5. Retail Commercial
  6. Institutional
  7. Recreation Open Space
- c. Marine repair shall be limited to minor repair services and does not include major mechanical or structural repair;
- d. Retail sales accessory to the primary use of the property may be permitted up to a maximum rate of 15% of the total gross floor area;
- e. Use of the Planned Development process shall be preferred;
- f. Recreational Vehicle Parks may be permitted as a secondary use requiring conditional use review for compatibility;
- g. Density / Intensity Standards
  - Residential Use shall not exceed 10 units per acre
  - Residential Equivalent use shall not exceed an equivalent of 3 beds per permitted dwelling unit at 10 dwelling units per acre.
  - Temporary Lodging Use shall not exceed 30 units per acre unless the alternate temporary lodging facilities densities and intensities standards are elected as outlined in Goal 6 and the subsequent objectives and policies.  
Non-Residential use shall not exceed a floor area ratio of .45, nor an impervious surface ratio of .85
  - Mixed Use shall not exceed, in combination, the respective number of units per acre and floor area ratio permitted, when allocated in their respective proportion to the gross land area of the property.
- h. Acreage Limitations: Institutional and Transportation/Utility Use shall not exceed a maximum area of five (5) acres. Any such use, alone or when added to existing contiguous like use(s), which exceeds this threshold shall require a plan map amendment which shall include such use and all contiguous like uses.

#### Objective 2.4

Commercial Land Use Categories provide for commercial uses including products and services along major corridors and at roadway intersections to serve residents and visitors on both a localized and regionalized basis. Commercial categories recognize major commercial corridors along portions of U.S. Highway 19 and Alternate Highway 19 along with existing specialized and traditional commercial sections of the City.

#### Policy 2.4.1 **Commercial Neighborhood (CN)**

- (a) Primary uses: Office, convenience shopping, and personal services oriented to a particular neighborhood or geographic segment of the community;
- (b) Secondary uses: Residential, mixed use
- (c) The maximum floor area ratio shall be .20; the maximum impervious surface ratio shall be .60
- (d) Residential uses may be permitted up to a maximum density of 10 units per acre.
- (e) The design shall include accommodations for bicycle and pedestrian access.
- (f) Acreage Limitations: Institutional and Transportation/Utility Use shall not exceed a maximum area of five (5) acres. Any such use, alone or when added to existing

- contiguous like use(s), which exceeds this threshold shall require a plan map amendment which shall include such use and all contiguous like uses.
- (g) Mixed Use – Shall not exceed, in combination, the respective number of units per acre and floor area ratio permitted, when allocated in their respective proportion to the gross land area of the property.

**Policy 2.4.2 Commercial Limited (CL)** The primary use shall be to designate areas for the development of commercial uses, attractions, and accommodations for the tourist oriented economy;

- a. Primary uses: Retail Commercial; Commercial/Business Service; Transient Accommodation
- b. Secondary Uses: Residential uses after a conditional use review ; Residential Equivalent
- c. Density/Intensity Standards
  - Residential Use shall not exceed 15 units per acre
  - Residential Equivalent use shall not exceed an equivalent of 3 beds per permitted dwelling unit at 15 dwelling units per acre.
  - Temporary Lodging Use shall not exceed 30 units per acre unless the alternate temporary lodging facilities densities and intensities standards are elected as outlined in Goal 6 and the subsequent objectives and policies.
  - Non-Residential use shall not exceed a floor area ratio of .45, nor an impervious surface ratio of .85.
- (a) Acreage Limitations: Institutional and Transportation/Utility Use shall not exceed a maximum area of five (5) acres. Any such use, alone or when added to existing contiguous like use(s), which exceeds this threshold shall require a plan map amendment which shall include such use and all contiguous like uses.

**Policy 2.4.3 Commercial General (CG)**

- (a) The primary use shall be to designate existing commercial areas which may be either highway or commercial oriented and include uses of varying degree and intensity;
- (b) Strip commercial development in areas not currently characterized as such shall be restricted. Infill of existing strip commercial may be permitted after an examination of the associated transportation impact;
- (c) Intensive commercial uses may be permitted provided they are reviewed for land use compatibility and outdoor storage is restricted or opaquely screened. Screening shall include landscaping techniques;
- (d) Primary Uses shall include Office, Personal Service/Office Support, Retail Commercial, Commercial/Business Service, Transient Accommodation, Wholesale/Distribution, Storage/Warehouse
- (e) Secondary Uses shall include Commercial Recreation, Residential (requires conditional use review for compatibility), Residential Equivalent, Institutional, Transportation/Utility, Recreation/Open Space, Research/Development, Light manufacturing/assembly.
- (f) Density / Intensity Standards
  - Residential Use shall not exceed 15 units per acre
  - Residential Equivalent use shall not exceed an equivalent of 3 beds per permitted dwelling unit at 15 dwelling units per acre.
  - Transient Lodging: Use shall not exceed 30 units per acre unless the alternate temporary lodging facilities densities and intensities standards are elected as outlined in Goal 6 and the subsequent objectives and policies.
  - Non-Residential use shall not exceed a floor area ratio of .45, nor an impervious surface ratio of .85

- Mixed Use shall not exceed, in combination, the respective number of units per acre and floor area ratio permitted, when allocated in their respective proportion to the gross land area of the property.
- (g) Acreage Limitations: Institutional and Transportation/Utility Use shall not exceed a maximum area of five (5) acres. Any such use, alone or when added to existing contiguous like use(s), which exceeds this threshold shall require a plan map amendment which shall include such use and all contiguous like uses.

#### Policy 2.4.4 **Commercial General - Fishing (CG-F)**

- (a) The primary use shall be restricted to commercial fishing establishments and canning/packing warehouses; Secondary uses may include marina facilities.
- (b) Secondary uses are single family detached dwellings;
- (c) Density / Intensity Standards
  - Residential Use shall not exceed 7.5 units per acre.
  - Residential Equivalent use shall not exceed an equivalent of 3 beds per permitted dwelling unit at 15 dwelling units per acre.
  - Transient Accommodation Use shall not exceed 40 units per acre.  
Non-Residential use shall not exceed a floor area ratio of .40, nor an impervious surface ratio of .85
  - Mixed Use shall not exceed, in combination, the respective number of units per acre and floor area ratio permitted, when allocated in their respective proportion to the gross land area of the property

#### Objective 2.5

Industrial Land use Categories provide for the concentration of industrial activity at locations with appropriate infrastructure and relatively low impact to surrounding land uses. Industrial categories recognize and preserve existing industrial properties and traditional industrial concentrations within the City, such as the area north of the Anclote River, and seek to maintain the integrity of these areas important to the economic diversity and growth of the City.

#### Policy 2.5.1 **Industrial Limited (IL)**

- (a) Those uses appropriate to and consistent with this category, as further defined by the Countywide Plan Rules, include:
  - Primary Uses – Office; Research/Development-Light; Research/Development-Heavy; Manufacturing-Medium; Manufacturing-Light; Wholesale/Distribution; Storage/Warehouse-Light;
  - Secondary Uses – Retail Commercial; Personal Service/Office Support; Commercial/Business Service; Food Crop Production; Transient Accommodations; Transportation/Utility
- (b) Use of the Planned Development process shall be preferred;
- (c) The maximum floor area ratio shall be .60; the maximum impervious surface ratio shall be .85
- (d) Transient Accommodation Use shall not exceed 40 units per acre unless the alternate temporary lodging facilities densities and intensities standards are elected as outlined in Goal 7 and the subsequent objectives and policies.
- (e) Retail Commercial and Personal Service/Office Support use shall not exceed a maximum of three (3) acres; and, Commercial/Business Service, Food Crop Production, and Transient Accommodation Uses shall not exceed a maximum area of five (5) acres. Any such use, alone or when added to existing contiguous like uses, which exceeds this threshold shall require a plan amendment which shall include such uses and all contiguous like uses.

R/OG	Residential/Office General	O
R/OR	Residential/Office Retail	R&S
RFO	Resort Facilities Overlay	R
R/OL	Residential/Office Limited	O
RFM	Resort Facilities Medium	R
RFH	Resort Facilities High	R
CN	Commercial Neighborhood	R&S
CL	Commercial Limited	R&S
CR	Commercial Recreation	R
CG	Commercial General	R&S
CG-F	Commercial General-Fishing	R&S
IL	Industrial Limited	E
IG	Industrial General	I
IG-WF	Industrial General-Waterfront	I
P	Preservation	P
R/OS	Recreation/Open Space	R/OS
I	Institutional	P/SP
T/U	Transportation/Utility	P/SP
MU	Mixed Use	AC, MMC
IND	Industrial	I
W/DF	Water/Drainage Feature	
CRD	Community Redevelopment District	AC
CBD	Central Business District	AC

#### Objective 4.2

Transferable Development Rights are to be allowed within the City consistent with Article 5, Section 5.2.1, Rule 5.2.1.1 of Forward Pinellas' Countywide Rules as amended through May 31, 2016.

#### Goal 5.

Improve the quality of life in Tarpon Springs by providing diverse, well designed and walkable destinations by creating and maintaining choices in housing, offices, workplaces and travel choices. The primary implementation of this goal shall be through the adoption of the Multi-Modal Transportation District (MMTD) shown in Figure 7.

#### Objective 5.1

Create livable, walkable streets that are designed and oriented toward pedestrians, bicycles, and transit. The primary focus for this application shall be within the Multi-Modal Transportation District, however large scale development / redevelopment projects shall also consider application of these standards.

**Policy 5.1.1** Design pedestrian-oriented streets to include continuous sidewalks with a minimum width of five feet, buffered from traffic by on-street parking and/or landscaping, and that include pedestrian amenities such as benches, trash receptacles, bus / transit shelters, and lighting.

**Policy 5.1.2** Provide a sense of vertical enclosure on streets through minimal front setbacks, similar building heights, and street trees. Building heights should be proportional to the width of the street, preferably a ratio of 1:1 to 1:3. Heights in excess of a ratio of 1:1 shall be required to setback proportionally above the first story.

**Policy 5.1.3** Buildings shall be served by walkways that directly link the building's main entryway to the street. These primary walkways must be visually distinct from parking lot and driveway surfaces and may include textured or colored materials. Paint or striping along will not suffice to meet this requirement.

Policy 5.1.4 Prohibit the location of permanent structures such as utility poles, traffic control poles and associated equipment boxes within the sidewalk.

Policy 5.1.5 Provide direct routes between destinations, minimizing potential conflicts between pedestrians and motor vehicles

Policy 5.1.6 Locate sidewalks along both sides of all public streets, particularly along routes that attract high volumes of pedestrian activity such as those leading to schools, recreational facilities, activity centers and employment districts.

Policy 5.1.7 Provide a clear passage zone of 5 feet in areas with movable obstructions, such as outdoor seating. Place benches on a separate pad behind the back of sidewalk or between the sidewalk and street to avoid clear passage zone obstruction.

Policy 5.1.8 Drive-through windows shall not be permitted along building façades facing the public right-of-way.

Policy 5.1.9 Require access across property lines that allow vehicular and pedestrian movement between properties without returning to the street.

Policy 5.1.10 Require site plans for new development and redevelopment of mixed use and non-residential sites to show any gaps or barriers to the pedestrian or bicycle network within ¼ mile of the proposed development.

## Objective 5.2

Encourage the development of pedestrian-scale centers that offer a variety of retail and services with varying scales that compliment neighborhood character.

Policy 5.2.1 Two types of mixed use centers are appropriate for the City of Tarpon Springs: The Neighborhood Center and the Town Center. Definitions of each center are as follows:

**Town Center** Town Centers are characterized by a significant area of development that is smaller than an Urban Center but provides convenient daily retail and personal service within walking distance of surrounding residential areas. Town centers consist of short, compact blocks that contain a variety of uses, mixed both horizontally and vertically, generally within a five square mile area.

**Neighborhood Center** Neighborhood Centers are characterized as traditional “Main Street” communities organized around a focal point with a sense of community identity. Neighborhood Centers typically consist of a limited number of commercial establishments that fulfill the basic needs of residents within one mile of the center. This category is typically applied to historic neighborhood or smaller town environments with a main street, but is also appropriate for neighborhoods with higher levels of connectivity that may have commercial areas that can be redeveloped to be more transit and pedestrian friendly.

## General Standards for all Mixed-Use Centers:

Policy 5.2.2 Mixed-use centers shall be permitted in areas defined as redevelopment areas, as well as in proximity to existing activity centers, such as employment centers, large scale commercial developments, recreational facilities, and transit stops.

Policy 5.2.3 Mixed-use centers shall be well defined through the creation of focal points, as well as transition in scale, density, and intensity from center to edge.

Policy 5.2.4 Mixed-use centers shall have integrated infrastructure, vertical and/or horizontal integration of different land uses and coordinated access.

Policy 5.2.5 For all mixed-use centers, land uses that can be included in the vertical and horizontal mix are:

- a. Residential;
- b. Food services (including neighborhood grocery stores; bakeries; cafes; coffee shops; neighborhood bars or pubs; restaurants, not including drive-throughs);
- c. Retail uses (including florists or nurseries; hardware stores; stationery stores; book stores, studios and shops of artists and artisans);
- d. Services (day care centers; music, dance or exercise studios; offices, including
- e. professional and medical offices; banks, barber; hair salon; dry cleaning);
- f. Accommodations (bed and breakfast establishments, small hotels or inns).

Additional uses that can be included in a horizontal mix are:

- a. Civic uses (government buildings, community theatres, museums, churches);
- b. Open space (linear parks, pocket parks, plazas, trails)

Policy 5.2.6 All mixed use centers shall have a maximum build-to line of 15 feet from the right-of-way (ROW). Building heights should be proportional to the width of the street, preferably a ratio of 1:1 to 1:3.

Policy 5.2.7 At least 50 percent of the development shall front the public ROW, and all parking shall be located to the rear of structures that front the ROW.

Policy 5.2.8 All uses must be within a one-half mile of each other, and must be interconnected with sidewalks. In order to prevent long, circuitous routes, the sidewalk facility between each use may not be more than 1.2 times the straight line or “as the crow flies” distance.

Policy 5.2.9 In order to encourage mixed use centers, the City of Tarpon Springs shall amend its Land Development Code to reduce parking requirements and create maximum parking standards.

Policy 5.2.10 Specific requirements for each mixed use center are exhibited in Table 11 below:

Center Type	Minimum % Mix of Uses				Density		FAR
	Office	Comm	Res	Civic	Min	Max	Max
Town Center	15%	20%	35%	5%	10	40	2.0
Neighborhood Center	10%	10%	45%	10%	8	15	1.0

**Table 11: Mixed Use Center Requirements**

*Notes: Density is expressed in units per acre. Commercial uses include retail. Civic uses include open space, and residential uses include all residential types, excluding accessory dwelling units.*

Policy 5.2.12 Mixed Use centers shall adhere to the requirements of the City’s Multi-Modal Transportation District, where applicable.

Policy 5.2.13 Proposed Mixed Use Centers that exceed the maximum allowable density/intensity allowed within the standard Future Land Use designations shall require a Special Area Plan in accordance with the Countywide Plan Rules of Pinellas County and an amendment to an appropriate Future Land Use Designation.



### Objective 5.3

Promote high quality design standards that support the community's image and contribute to its identity and unique sense of place.

Policy 5.3.1 Encourage building design to provide an ordered variety of entries, porches, windows, bays and balconies along public rights of ways where it is consistent with neighborhood character.

Policy 5.3.2 Buildings with facades greater than 50 feet in length should be broken down in scale by means of the articulation of well-proportioned and separate areas. Strategic elements include the variation of architectural treatment and elements such as colors, materials, and heights.

Policy 5.3.3 For any ground-level façade that faces a right-of-way, a minimum of 50% to a maximum of 80% of the ground level façade shall be transparent (including windows and door openings) for any building containing non-residential uses. This requirement shall apply to both facades of a building on a corner lot.

Policy 5.3.4 Buildings shall include street level elements oriented to the pedestrian, such as awnings, arcades, and signage.

Policy 5.3.5 Within the National Register Historic District new development shall be designed to maintain and support existing character.

Policy 5.3.6 The City of Tarpon Springs shall preserve the character of existing residential neighborhoods by requiring infill or remodeled structures to be compatible with the neighborhood and adjacent structures.

Policy 5.3.7 To promote housing diversity and to avoid creation of monotonous developments, the City of Tarpon Springs shall promote the inclusions of a variety of housing types in all residential communities through the City of Tarpon Springs Comprehensive Land Development Code.

Policy 5.3.8 The City of Tarpon Springs shall revise setback requirements to allow porch easements in subdivision design and require living areas of the structure to be closer to the street than garage areas.

Policy 5.3.9 The City of Tarpon Springs shall amend its Comprehensive Land Development Code to require that single family attached and multi-family developments be designed to include orientation of the front door to a neighborhood sidewalk and street.

Policy 5.3.10 Open vistas and open spaces shall be integrated into the design of all mixed use centers.

### Objective 5.4

Increase workforce housing opportunities, particularly within proximity to places of employment and transit facilities.

Policy 5.4.1 Workforce housing shall be defined as the housing needs of households whose median income is between 80% and 120% of the area's median income, with no more than 30% of their income spent on housing costs.

Policy 5.4.2. Priority shall be given to assisting affordable work force housing projects which are proximate to employment concentrations, public transportation, or with easy access to a range of public services.

Policy 5.4.3 Within two years, the City of Tarpon Springs shall establish the necessary affordable housing plan / Special Area Plan to implement a policy allowing residential and mixed-use developments within ¼ mile of an existing or planned transit stop or station or a major employment center with a minimum of 50 employees per acre to be eligible for a density bonus of one market rate unit for every affordable unit, or an intensity bonus of up to 1.0 Floor Area Ratio. The City of Tarpon Springs shall amend its Comprehensive Land Development Code to establish criteria and a point system for the bonus. The primary application of this policy shall be within the Multi-Modal Transportation District.

Policy 5.4.4 The City of Tarpon Springs shall permit granny flats or other accessory dwelling units in residential or mixed use districts and shall not count such units against the allowable designated density established by future land use or zoning.

#### Objective 5.5

Parking lots and driveways shall be designed to support pedestrian safety, connections and comfort by reducing the number of curb cuts and providing interconnectivity between and through sites.

Policy 5.5.1 The City of Tarpon Springs shall allow a parking requirement reduction for properties that share both cross access and a common entrance drive.

Policy 5.5.2 New commercial, office and retail buildings and centers shall be planned to reduce the number of curb cuts and driveways. Where possible, projects should share driveways and parking access with adjacent sites to provide an interconnected system of auto and service access points.

Policy 5.5.3 When redevelopment or re-use of a site results in the combination of one or more parcels of land that had previously operated as separate uses with separate driveways and parking, which are now proposed to operate jointly or to share parking facilities, the total number and location and width of driveways shall be reviewed. In order to reduce access points on the street system, driveways shall be eliminated when the area served can be connected within the site.

Policy 5.5.4 Parking lots and driveways shall provide pedestrian connections to storefronts. Dedicated walkways through parking lots and sidewalks should be included in the design of access roadways.

Policy 5.5.5 Parking lots shall include trees to provide shade and reduce temperature.

Policy 5.5.6 Service windows and stacking lanes for drive-through business shall not face public streets.

Policy 5.5.7 Mid-block and rear alleys should be utilized where feasible for access to parking, utilities, serve and unloading areas in order to minimize the number of required curb cuts along primary access routes.

#### Objective 5.6

The City of Tarpon Springs shall promote transportation choice through construction of well designed pedestrian, bicycle and transit facilities.

Policy 5.6.1 In road construction and reconstruction projects, roadway designs shall protect and promote pedestrian comfort, safety and attractiveness in the Multi-Modal Transportation District and other large-scale redevelopments which may occur along road frontages. Such measures should

include, where feasible, on-street parking, wide sidewalks, and abundant landscaping at the street edge.

Policy 5.6.2 The City of Tarpon Springs shall prioritize street segments with sidewalk gaps. The following criteria shall be used in prioritizing sidewalk gap improvements:

- (1) proximity to public schools;
- (2) proximity to major public parks or cultural facilities;
- (3) proximity to high density residential and commercial areas, or any area exhibiting (or potentially exhibiting) a high volume of walking;
- (4) arterial and collector streets;
- (5) proximity to transit routes; and
- (6) proximity to identified redevelopment areas.

Policy 5.6.3 Future arterial and collector road constructions, widening, or reconstruction projects shall require accommodation of bicycle travel and pedestrian needs.

Policy 5.6.4 In the planning and design of transit sites and stations, high priority shall be given to providing a safe, attractive, and comfortable environment for pedestrian and transit user; such amenities shall include weather protection, ample paved walkways, sidewalks, lighting and landscaping and may include ancillary uses that provide conveniences to transit patrons such as cafés, new stands, and food kiosks/vendors. Buildings shall be served by walkways that directly link the building's main entryway to the street and to the transit stop. These primary walkways must be visually distinct from parking lot and driveway surfaces and may include textured or colored materials. Paint or striping alone will not suffice to meet this requirement.

Policy 5.6.5 The provision of landscaping near the transit stop in the form of shade or ornamental / palm trees is encouraged to maximize passenger comfort.

Policy 5.6.6 City of Tarpon Springs shall consider travel lane width reductions or reducing the number of lanes in order to provide wider sidewalks, bike lanes, landscaping medians and/or on-street parking. Streets with right-of-way widths of 40 feet or less shall be evaluated for consideration as one-way streets.

## Goal 6.

Promote sustainable economic development, energy efficient land use patterns and responsible job growth within the City of Tarpon Springs

### Objective 6.1

Evaluate various potential growth patterns for impacts upon the City's ability to provide long term sustainable services to the City's residents

Policy 6.1.1 The City will conduct a "cost of growth" analysis to determine the most beneficial future growth patterns and review and amend as necessary the City's Comprehensive Plan to implement the recommendations of the study.

### Objective 6.2

Ensure that small, locally owned independent businesses, unique to Tarpon Springs are able to compete with large retail chains.

Policy 6.2.1 The City will evaluate the impact of formula based businesses upon locally owned establishments and implement regulations or other incentives to ensure that locally owned businesses are able to fairly compete.

### Objective 6.3

Encourage development / re-development that promotes sustainable urban development patterns.

Policy 6.3.1 Allow urban agriculture uses such as hydroponic crop production, self-sustainable urban farming, and local food production within the City's industrially designated lands.

Policy 6.3.2 Allow community gardens and cooperatives, after conditional use review, within residentially designated areas.

Policy 6.3.3 Allow vegetable/produce stands, after conditional use review in residentially designated areas.

Policy 6.3.4 Provide incentives to attract the types of businesses needed to provide a well-rounded mix of complimentary uses in the City's core business areas (industrial areas, downtown, tourist areas and highway business areas)

#### Objective 6.4

Encourage local job growth so that residents may choose to work, shop and play close to home and reduce vehicle miles traveled.

Policy 6.4.1 Protect the City's remaining industrially designated lands from incremental land use amendments to non-industrial uses.

Policy 6.4.2 Evaluate the permitted and conditional uses within the City's industrial districts and amend, where necessary, to protect the integrity of the industrial designations and priority use of these areas for primary job creation.

Policy 6.4.3 Encourage mixed use development patterns, where appropriate, to reduce commuting costs and vehicle miles traveled.

#### Objective 6.5

Promote transit oriented redevelopment along current / future transit routes

Policy 6.5.1 Identify current and future planned transit routes on Figure 10 of the Future Land Use Map Series. Transit routes shall be reviewed bi-annually for inclusion on the map.

Policy 6.5.2 Identify locations for future Transit Oriented Re-Development (TORD). Priority shall be given where multiple modes of transportation (bus, rail, cycling, and pedestrian-friendly) are in close proximity. TORD areas shall be evaluated bi-annually in conjunction with transit route evaluations and the map (Figure 10) updated as required.

Policy 6.5.3 Re-development projects located within a TORD location shall comply with minimum density to support transit (10-12 units per acre) and shall meet the mix of uses required for a Neighborhood Center as identified in Policy 4.2.10 of this element and the General Standards for all Mixed-Use Centers (Policies 4.2.2 through 4.2.13)

#### Objective 6.6

Promote energy efficient land use patterns through diversification of uses

Policy 6.6.1 Identify those areas of the City currently developed as a singular land use (completely residential, or commercial, for example) on Figure 10 of the Future Land Use Map Series. These areas shall be evaluated bi-annually and the map updated as required.

**CITY OF TARPON SPRINGS**  
**COASTAL PLANNING AREA AND CONSERVATION ELEMENT**

Original Analysis and Document Prepared By  
MANGROVE SYSTEMS, INCORPORATED  
October 10, 1989

Updates Prepared By  
THE CITY OF TARPON SPRINGS  
PLANNING AND ZONING DIVISION  
February 2019

FIGURE 8 COASTAL & CONSERVATION ELEMENT

## COASTAL HIGH HAZARD AREA

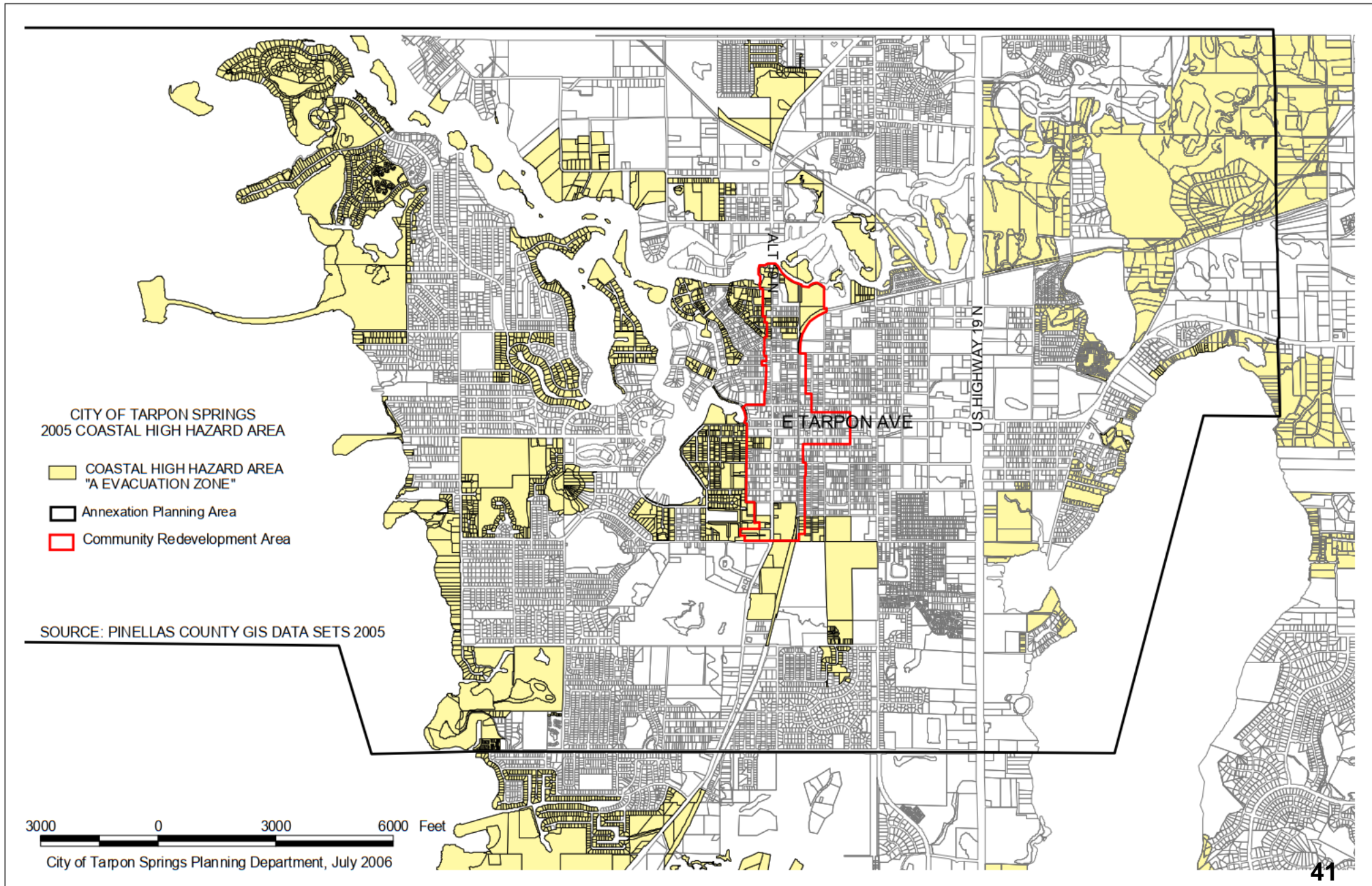




FIGURE 11 COASTAL & CONSERVATION ELEMENT

# COASTAL HIGH HAZARD AREA, VACANT LANDS

