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June 29, 2021

Michael Fiigon, II
Senior Planner
City of Bonita Springs
Department of Community Development
9220 Bonita Beach Road, Suite 111
Bonita Springs, FL 34135

RE: Bonita Springs Golf Course Planned Development – PD21-78545-BOS, Extension Request

Dear Mr. Fiigon:

On behalf of our client BSGC Land Holdings, LLC, we are respectfully requesting an extension of the sufficiency response timeframe for the Residential Planned Development (RPD) rezone application.

We respectfully request a 60-day extension from July 6, 2021 to September 4, 2021 for the insufficiency response.

Please feel free to contact me if you have any questions.

Sincerely,

D. Wayne Arnold, AICP

Cc: BSGC Land Holdings, LLC
GradyMinor File

Q. Grady Minor & Associates, P.A.
3800 Via Del Rey
Bonita Springs, FL 34134

Ph. 239-947-1144 Fax. 239-947-0375
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September 30, 2021

Michael Fiigon, II
Senior Planner
City of Bonita Springs
Department of Community Development
9220 Bonita Beach Road, Suite 111
Bonita Springs, FL 34135

RE: Bonita Springs Golf Course Planned Development – PD21-78545-BOS, Extension Request

Dear Mr. Fiigon:

On behalf of our client BSGC Land Holdings, LLC, we are respectfully requesting an extension of the sufficiency response time-frame for the Residential Planned Development (RPD) rezone application. An extension request was submitted and approved on August 31, 2021 for 30 days, which extended the resubmittal deadline to October 4, 2021.

We respectfully request an additional 11-day extension from October 4, 2021 to October 15, 2021 for the insufficiency response in order to finalize exhibits and responses to staff comments.

Please feel free to contact me if you have any questions.

Sincerely,

D. Wayne Arnold, AICP

Cc: BSGC Land Holdings, LLC
GradyMinor File

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Rick Steinmeyer
Mayor

Amy Quaremba
Council Member
District One

Jesse Purdon
Council Member
District Two

Laura Carr
Council Member
District Three

Chris Corrie
Council Member
District Four

Michael Gibson
Council Member
District Five

Fred Forbes, AIA
Council Member
District Six

Arleen Hunter
City Manager
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Derek Rooney
City Attorney
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City Clerk
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Public Works
(239) 949-6246

Code Enforcement
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Parks & Recreation
(239) 992-2556

Community Development
(239) 444-6150

August 31, 2021

Mr. D. Wayne Arnold, AICP
Q. Grady Minor & Associates, P.A.
3800 Via Del Rey
Bonita Springs, FL 34134

Re: Bonita Springs Golf Course Residential Planned Development – PD21-78545-BOS

Dear Mr. Arnold:

Community Development is in receipt of your request for a 30-day extension regarding Bonita Springs Golf Course Residential Planned Development, PD21-78545-BOS, in order to address Staff's comments provided in the insufficiency letter dated May 7, 2021. An extension has been granted. Please provide your responses to Staff's comments no later than **October 4, 2021**. If no response is provided by that time, the application will be considered withdrawn.

Please feel free to contact me if you have any questions.

Sincerely,

DEPARTMENT OF COMMUNITY DEVELOPMENT
Zoning Division

Mike Fiigon II

Mike Fiigon II
Senior Planner

Copy:
Derek Rooney, City Attorney
Arleen Hunter, City Manager
Brent Spain, Theriaque & Spain
John Dulmer, Community Development Director
Jay Sweet, AICP, PSM, City Surveyor
Laura Gibson, Environmental Sciences
Sean Gibbons, Multi-Modal Reviewer
Stuart Smith, Development Engineer
Tom Ross, Transportation Engineer
Beckie Reide, Lee County Natural Resources
Cynthia Vargas, Administrative Assistant
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October 1, 2021

Mr. D. Wayne Arnold, AICP
Q. Grady Minor & Associates, P.A.
3800 Via Del Rey
Bonita Springs, FL 34134

Re: Bonita Springs Golf Course Residential Planned Development – PD21-78545-BOS

Dear Mr. Arnold:

Community Development is in receipt of your request for a 30-day extension regarding Bonita Springs Golf Course Residential Planned Development, PD21-78545-BOS, in order to address Staff's comments provided in the insufficiency letter dated May 7, 2021. An extension has been granted. Please provide your responses to Staff's comments no later than **October 15, 2021**. If no response is provided by that time, the application will be considered withdrawn.

Please feel free to contact me if you have any questions.

Sincerely,

DEPARTMENT OF COMMUNITY DEVELOPMENT
Zoning Division

Mike Fiigon II

Mike Fiigon II
Senior Planner

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June 29, 2021

Mr. D. Wayne Arnold, AICP
Q. Grady Minor & Associates, P.A.
3800 Via Del Rey
Bonita Springs, FL 34134

Re: Bonita Springs Golf Course Residential Planned Development – PD21-78545-BOS

Dear Mr. Arnold:

Community Development is in receipt of your request for a 60-day extension regarding Bonita Springs Golf Course Residential Planned Development, PD21-78545-BOS, in order to address Staff's comments provided in the insufficiency letter dated May 7, 2021. An extension has been granted. Please provide your responses to Staff's comments no later than **September 4, 2021**. If no response is provided by that time, the application will be considered withdrawn.

Please feel free to contact me if you have any questions.

Sincerely,

DEPARTMENT OF COMMUNITY DEVELOPMENT
Zoning Division

Mike Fiigon II

Mike Fiigon II
Senior Planner

Copy:
Derek Rooney, City Attorney
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Beckie Reide, Lee County Natural Resources
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PD Files

October 8, 2021

Michael Fiigon, II
Senior Planner
City of Bonita Springs
Department of Community Development
9220 Bonita Beach Road, Suite 111
Bonita Springs, FL 34135

RE: Bonita Springs Golf Course Planned Development – PD21-78545-BOS, submittal 2

Dear Mr. Fiigon:

This correspondence is our formal response to sufficiency review letter #1, provided to us on May 7, 2021 (via email). Responses to staff comments have been provided in **bold.**

BONITA SPRINGS Planning and Zoning

Sufficiency Comments:

1. It is Staff's opinion that labeling the portion of the project adjacent to Carnoustie Court to the west as either residential or water management is not sufficient. Rather, the Applicant should pick an option and provide additional analysis for the impacts based on the option chosen. It is also Staff's opinion that, based upon historical data for the area as well as the numerous concerns expressed at the neighborhood information meeting (held by the Applicant), the preferred option would be water management.

Response:
The MCP has been modified to eliminate access from Carnoustie Court and to limit the use of the area to water management only.

2. LDC Section 4-295(6)(b): Master Concept Plan: Where the subject property will be divided into lots or parcels, the plan must indicate the general location, configuration, and approximate dimensions of the lots or parcels (including outparcels) as well as lot coverage, and the minimum proposed setbacks for principal structures. Please revise the proposed Master Concept Plan to include general locations and configurations of the proposed lots. Additionally, please list the deviations on the Master Concept Plan as well

as the proposed development regulations. To this end, the Master Concept Plan may contain multiple pages.

Response:
The general configuration of proposed residential lots has been depicted on the MCP. Individual lots will be consistent with the minimum dimensions identified in the proposed development standards.

Substantive Comments:

1. Please reference LDC Section 4-1472 for the requirements for gates and gatehouses in order to determine if additional deviation requests are necessary.

Response:
The project has not requested deviations from LDC Section 4-1472 and will comply with the requirements of the LDC if gates are proposed.

2. Does the project plan on utilizing the off-site sign located on the corner of Cockleshell and Old 41? If so, please provide relevant details for the request, including, but not limited to: proof of ownership, easement agreements, a sketch and legal description of the parcel, and proposed elevations.

Response:
Yes, it is the intent to utilize the existing off-site sign, which is located in the City of Bonita Springs ROW. A deviation has been requested to permit the sign to be either rehabilitated or reconstructed in the current location. The details you have requested will be submitted through a typical sign permit.

3. Deviation 1: Please revise the justification language. At this time, Staff has concerns with this deviation based upon the justification provided. There is no reason provided for why walls and gates are preferred over the required vegetative buffer, which would yield a more natural look that is more compatible with the surrounding area and still achieve the same goal of screening the proposed project from existing residential development.

Response:
The deviation justification has been modified to limit the request to allow for fences and walls only in areas that will have less than a 50-foot separation between the existing residential property lines and proposed residential property lines. As noted in the deviation request, clearing and regrading of the areas immediately adjacent to existing residential uses will be required to provide drainage improvements for the surrounding communities. The drainage

improvements have been requested by the City staff and their drainage consultant for a regional public drainage system.

4. Deviation 8: Is it the Applicant's intent to include pathways only on the southern development tract? It appears the deviation request applies on the northern development tract, but no conceptual pathway is shown on the Master Concept Plan. Are these pathways accessible to the adjacent residential uses?

Response:
A separate sheet has been added to the Master Concept Plan to show the location of the proposed pathways. The LDC requires that multiuse pathways be constructed within the Paradise Road R.O.W. for specified distances adjacent to the applicant's ownership. The deviation has been modified to note that constructing the proposed pathways within the Paradise Road R.O.W. will result in impacts to drainage facilities on Paradise Road that serve existing off-site drainage areas as a part of the justification to support the deviation. The public regional drainage needs, and proposed system requested by the City significantly reduces the ability to impact any existing drainage swales. Flood control in the area has been designated as a higher priority by the City.

5. Deviation 9: Please revise the justification language. At this time, Staff does not agree that the standards to request a deviation as outlined in LDC 4-2312(13) have been met. It is Staff's opinion that significant enhancements are not being provided to warrant the requested deviation.

Response:
The justification language has been modified to provide further details. The project site has limited frontage on public rights-of-way and the width of the frontage on the rights-of-way in each case is less than the minimum prescribed by the LDC. The applicant has selected locations that minimize impacts to the surrounding residents and are aligned with the existing roadway network and proposed improvements.

Please contact: Mike Fiigon II, Senior Planner
Phone: 239.444.6151
E-mail: mfiigon@cityofbonitaspringscd.org

BONITA SPRINGS Surveying

Sufficiency Comments:

1. The location of the access shown on the Master Concept Plan to the northern and eastern parcel is not included in the Boundary Survey.

Response:
A survey for Lot 86 is included with submittal 2.

2. Neither of the two surveys provide an acreage or square footage calculation.

Response:
The survey has been revised to show the property acreage.

3. Note #2 on the survey states that the survey was prepared without the benefit of an Abstract of Title. The legal description is prefaced "per provided title commitment." Are the exceptions listed in the title commitment depicted on the survey?

Response:
Note #2 has been revised. The exceptions listed in the title commitment are depicted on the survey.

4. The Applicant submitted the Amended Declaration of Covenants and Restrictions of the Bonita Springs Golf Country Club and Fairway Estates (Covenants). Is all of the Applicants' property subject to the Covenants?

Response:
Only Lot 86 is subject to the covenants.

5. The Master Concept Plan shows an access road going across what appears to be Lot 86 of Plat Book 30, Page 84.

    a. Please provide a survey of this property.

Response:
The survey for Lot 86 is included with submittal 2.

    b. This lot is subject to the Covenants, which appear to limit the use to residential only. Have the Covenants been modified to allow the access road use? If so, please provide documentation.

Response:
The applicant is aware of the contents of the restrictive covenants and is exploring remedies to remove the restrictions on Lot 86 through discussion with the HOA and the City Attorney. The applicant respectfully requests that the requirement to have relief from the restrictive covenants be deferred to the start of construction. If access through Lot 86 cannot be achieved, the applicant understands that a modification to the to Master Concept Plan will be required to access the site through Carnoustie Court. Lot 86 has been identified by the City's drainage consultant as the preferred connection for the enhanced drainage system requested by the City.

6. Exhibit IV-C ROW and Easement Map does not show easements that exist on the property.

Response:
Please refer to the boundary surveys for detailed easement locations.

Please contact: Jay Sweet, AICP, PSM, City Surveyor
Phone: 239.444.6178
E-mail: jsweet@cityofbonitaspringscd.org

BONITA SPRINGS Environmental

Sufficiency Comments:

1. Provide soils, FLUCCS, and topographic mapping at the same scale as the Master Concept Plan per LDC Section 4-295(a)(4)c.

Response:
Requested maps are included with submittal 2.

2. Part of the site is within Archeological Sensitivity Zone 2. Provide a letter from the State for the review of the Master Historic Site File for any known historic sites on the property.

Response:
The only area that has been mapped as having the potential for cultural resource sensitivity is in the northeast corner of the northern parcel. The potential for the presence of cultural resources at that location was previously evaluated by the State Division of Historical Resources as a part of the review of ERP Application No. 160921-5 for Bonita Del Sol. Per the letter from DHR dated October 19, 2016 (attached), the project is unlikely to adversely affect historic properties. The applicant intends to follow standard construction protocols that will require, in the event of a discovery of archaeological resources, the cessation of subsurface

construction activities in the vicinity of the discovery, and consultation with the Division of Historical Resources prior to the resumption of construction. The applicant would not object to inclusion of the special condition language suggested in the October 19, 2016 letter from DHR as a part of Development Order approvals for the North Parcel.

3. Provide a map of heritage trees on site per LDC Section 3-417(b)(2).

Response:
Maps showing the existing locations of Heritage Trees within the project site are attached. The applicant is currently working with the City and its consultant to identify the portions of the site that would need to be dedicated to stormwater management facilities to achieve significant regional benefits. A significant number of the Heritage Trees within the limits of the site are located within areas identified by the City's consultant to be utilized for regional stormwater management. The final site plan for the proposed residential development, and the associated impacts to Heritage Trees by the proposed development project and the regional drainage facility, will be finalized following the completion of a Developer Agreement with the City of Bonita Springs and permitting for the stormwater facility through the South Florida Water Management District. The applicant will make reasonable attempts to preserve existing Heritage Trees where possible based upon required topographic conditions, tree location, and in consideration of the potential adverse impacts to trees as a result of construction activities. At the time of Development Order application, the applicant will consult with the Tree Advisory Board to identify Heritage Trees that can be preserved within the project site and identify mitigation measures for impacts.

Where retention of the trees is not possible due to required public drainage areas identified by the City's consultant, they will be replaced, where feasible, with tree species in accordance with code allowances along sidewalks and roadways to provide shade for community benefit, and within and along lake littoral zones to shade and cool the water and to contribute to healthy lake ecology. The developer will work with City staff to balance the location and number of trees with the need for public drainage systems.

4. The Environmental Assessment includes wetland/other surface water FLUCCS areas but does not address if they are jurisdictional wetlands. Please clearly show any wetland/jurisdictional areas and add them to the density and land area sections of the Application as appropriate.

Response:
An Environmental Resource Permit application has not yet been submitted to SFWMD for the subject project; therefore, State wetland jurisdiction has not yet been established. The applicant has consulted with the US Army Corps of Engineers (prior to delegation of the Federal 404 Permitting Process to the State) and there were no Waters of the US identified.

FLUCCS 630 (Wetland Forest Mixed; 0.21 acres) within the northeast corner of the north golf course parcel is the sole area that could potentially be determined by SFWMD to be a jurisdictional wetland. It is the intent of the owner that this area, if it is deemed to be a wetland that is jurisdictional to SFWMD, will be permitted to be impacted, and mitigated if appropriate, so that it will no longer exist after the project is constructed. To be conservative in the calculation of density, this area has been assumed to be a wetland area in the density calculation and land area sections of the application. The two FLUCCS 624 areas lack sufficient hydrology to be defined as wetlands per state wetland delineation criteria. The lakes and ditches (FLUCCS 500), and the cattail infested portion of the lake in the central region of the northern parcel (FLUCCS 6412), are considered surface waters. They will be reconfigured and will persist as surface waters in the proposed design.

5. Relevant portions of the Conservation and Coastal Management Element need to be included in the Comprehensive Plan narrative.

Response:
Exhibit II-E-2 has been revised to address the above comment and is included with submittal 2.

6. A deviation and justification for LDC Section 4-2312(d)(4) is required due to the requested elevation change within thirty (30') feet of the project boundary.

Response:
A deviation has been added to provide for surface water management improvements. The site is constrained by the requirement to exceed the code minimum drainage system to include improvements for the City's regional drainage system.

Substantive Comments:

1. Deviation 7: The justification seems to be related to lakes and preserves but not all areas denoted for this deviation on the Master Concept Plan are adjacent to a lake/preserve. Two of the areas abut existing homes where more buffering as prescribed in this LDC Section would be appropriate.

Response:
Typical cross sections have been added to the Deviation Justifications to depict the configuration of the buffers in instances where deviations from the requirements of Section 4-2312(d)(7) are requested. Section 4-2312(d)(7) specifically requires that the 50-foot buffers be vegetative in nature and have a minimum screening height of six feet. In locations where proposed lakes are used as buffers, the buffers will not be vegetative in nature; it is not proposed to obstruct the view of the lakes from existing residences. In cases where existing residences are separated from the

proposed project by an off-site preserve, it is not proposed to include a vegetative screen between the preserve and the proposed project. In instances in which proposed single family residential areas will be located within 25 feet of existing residences, the applicant requests the flexibility to be able to install landscaping and a six-foot wall or fence (at the developers discretion) within the buffer to provide screening between the uses. The site has been constrained due to the City's request to prioritize regional drainage improvements that exceed those required by code. Due to the City's request to expand the lakes throughout the project, the remaining developable areas require additional consideration.

2. Deviation 10: Appropriate tree species can be utilized around the stormwater management lakes to replace the heritage trees and provide benefits to the lakes and community. The trees could also be counted towards littoral requirements. Once the Application is deemed sufficient, the project will be scheduled for a Tree Advisory Board hearing and pre-meeting site visit.

Response:
As detailed previously in the response to Sufficiency Comment 3, the applicant is working with the City to identify potential for use of the project site for stormwater management facilities serving off-site areas. A large portion of the land within the project has been identified by the City and their consultant for an area wide public drainage system. The City is unable to buy the entire project but has asked the developer to prioritize a public drainage system over other items desired in the code.

Please contact: Laura Gibson, CEP-IT, Certified Arborist
Phone: 239.444.6142
Email: lgibson@cityofbonitaspringscd.org
BONITA SPRINGS Engineering

Sufficiency Comments:

1. The MCP shows an area on the north parcel that may be a lake or homes. The Applicant needs to pick one or the other so that the request may be properly evaluated in comparison to the existing development pattern.

Response:
The proposed access from Carnoustie Ct. has been eliminated. The area will be utilized for stormwater management.

Substantive Comments:

1. Staff has concerns with Deviation 2, as requested. Significant fluctuations in lake levels have been noted during the wet and dry seasons. Please note that Staff may consider a condition that requires berms around lakes and ponds in order to address erosion concerns. Additionally, 6:1 slopes are preferred over 4:1 slopes.

Response:
The deviation request has been modified to update the proposed lake cross sections to include options for either collector swales at the top of bank or 6:1 slopes from one foot above the control elevation to six feet below control elevation. The proposed revisions to the sections are described in the deviation request and will provide reasonable protections against erosion in the initial part

2. Staff has concerns with Deviation 4 and would advise the Applicant to reconsider the request in order to satisfy access for emergency vehicles.

Response:
The proposed deviation is being requested for the north golf course parcel and potentially for the south golf course parcel (depending on the proposed configuration of the regional stormwater management facilities). A description of the justification for the deviation to allow a single access point for each parcel is provided below. It is important to note that the City is prioritizing flood control for an area wide public drainage system above all other criteria.

<u>North Parcel:</u>
The north parcel of the project site has frontage on public rights of way from Carnoustie Court and Paradise Road (via Lot 86). The applicant is pursuing remedies to allow for a single access point across Lot 86 to the north golf course parcel. One of the justifications for deviations described in Section 4-2312(d)(13) is for the applicant to demonstrate a "bona fide need for the deviation and agree to provide significant enhancements to the subject property in exchange for the deviation." Additionally, deviations are required (either singularly or in combination) to "not undermine the integrity of adjacent residential zoning districts." The deviation is requested to allow for use a single access point from Paradise Road (across Lot 86) to access the north golf course parcel. If the deviation were not granted, the portion of the golf course between Carnoustie Court and Paradise Road would be required to be used as a secondary access road to the proposed project. The use of the portion of the golf course that is contiguous to Carnoustie Court as an access road would prohibit its use for regional stormwater facilities and eliminate the significant enhancements associated with the regional drainage improvements.

South Parcel:

The south parcel of the project site has frontage on public rights of way from Paradise Road and at a single frontage on Cockleshell Drive. The applicant is currently working with the City of Bonita Springs and their consultant to identify potential portions of the site that can be utilized for regional stormwater storage. The portion of the project site adjacent to Cockleshell Drive is also adjacent to the point of discharge to the headwaters of Spring Creek and areas that are among the most susceptible to flooding in significant storm events. The deviation may be necessary to provide flexibility in the landplan to maximize the regional stormwater benefits; the proposed use of the portion of the site adjacent to Cockleshell Drive to provide stormwater benefits would be consistent with the requirements in Section 4-2312(d)(13) to satisfy a "bona fide need" (flooding of surrounding areas) and to allow for "significant enhancements" to the subject property.

3. Staff has concerns with Deviation 6 and the justification provided. Stating that other [older] developments did not have a street tree requirement is not justification for a deviation.

Response:

The deviation request has been modified to propose a single street tree within the PUE on each residential lot to provide shade for the proposed sidewalks. The site has been constrained by the City's request for an area wide public drainage system and it is not feasible to expand rights-of way to provide room for trees at other locations in the right of way.

4. Please provide additional documentation relative to the historic stormwater issues in the area. What features are being proposed to help alleviate some of these documented concerns? To improve the water management system, will construction on adjacent properties be necessary? If so, please explain.

Response:

The applicant is currently working with the City of Bonita Springs and their consultant to identify potential portions of the site that can be utilized for regional stormwater storage. The areas surrounding the project site were subject to various levels of flooding as a result of Hurricane Irma in 2017 and the chronic flooding issues in the area are documented in the City's requests for grant funding from FEMA. The City's consultant is currently evaluating scenarios for regional stormwater storage in wet detention areas that would be interconnected through an improved conveyance system. The regional stormwater management system currently contemplated would provide significant benefits to surrounding properties that would make the system eligible for FEMA grant funding.

The applicant is currently in discussions with the City of Bonita Springs to enter into a Development Agreement to make the necessary portions of the site available for stormwater

management facilities that would achieve the levels of improvement necessary to receive FEMA grant funding. Section 4-2312(d)(4) identifies the requirement that the proposed golf course conversion be designed such that "drainage in surrounding developments shall be maintained at an equivalent or improved level of service." The final stormwater management system design associated with the Development Agreement would be inclusive of the proposed residential development included in this request for golf course conversion and would demonstrate that the requirement to provide an equivalent or better level of service has been achieved. The Development Agreement would identify which facilities are the responsibility of the developer to construct and which would be the responsibility of the City.

If the levels of improvement necessary to receive FEMA funding are not achieved, the applicant will prepare a detailed stormwater management system design demonstrating that the proposed project provides an equivalent or improved level of service to surrounding properties as compared to the existing conditions (in accordance with the requirements of Section 4-2312(d)(4)). The facilities that would be provided within the golf course property to maintain or improve the stormwater level of service would consist of wet detention areas to provide additional storage, improved conveyances to interconnect the proposed detention areas, and improvements to the outfall from the project site to the headwaters of Spring Creek. The improvements proposed by the developer would not be constructed outside of the project site. In the case of culverted conveyances, the applicant would construct improved conveyances within the golf course site up to the property line to allow for connection to existing or improved drainage facilities from adjacent offsite properties at the property line. Any improvements within off-site properties necessary to convey flows to the project site would be the obligation of the entity responsible for operation of the stormwater management system on the neighboring site.

1. At time of local development order, the Applicant shall provide engineering plans showing how the site will store and treat its surface water runoff consistent with the City's Comprehensive Plan and the City's LDC, including compliance with Policy 9.3.3 of the Conservation/Coastal Management Element of the City's Comprehensive Plan, which states that an additional fifty (50) percent water quality is required over the already required South Florida Water Management District water quality.

Response:
Noted

2. At time of local development order, the Applicant shall provide a drainage analysis demonstrating that the site development plan has no adverse impact on adjacent properties and that there is sufficient on-site drainage capacity, storm-water conveyance, and controlled discharge. The drainage analysis shall include, but not be limited to:

a. The Applicant shall provide an Interconnected Pond and Channel Routing (ICPR) Model. The 100-year, 24-hour storm event is the primary storm used to evaluate the proposed design. The City reserves the right to request additional modeling of other storm events upon review of the data. All data submitted shall be formatted for inclusion into the city's Interconnected Pond Routing (ICPR) Model.

b. The Applicant shall provide a drainage map for all contributory areas within and into the development, showing flow paths/arrows, existing on-site and off-site drainage structures (sizes and inverts), and sub-basin areas; and (2) hydrologic and hydraulic calculations for the 5-, 25-, and 100-year design storm events in order to establish existing baseline conditions.

c. Drainage impediments identified during the modeling process must be addressed in the drainage plan.

Response:
Noted.

3. At time of local development order, roof gutters, downspouts and yard drains will be required to collect roof drainage and direct flow into yard drains or central drainage system.

Response:
Noted: The applicant will comply with the building codes in place at the time of building permit.

Please contact: Stuart Smith, PE
Phone: 239.444.6164
Email: ssmith@cityofbonitaspringscd.org

BONITA SPRINGS Bike-Ped/Multimodal

Sufficiency Comments:

1. Deviation 3: Please revise the Master Concept Plan to more clearly delineate the area(s) in which the Applicant is suggesting the installation of the proposed "pathways" and/or provide a separate Alternative Pathways Plan. Based upon the Master Concept Plan provided, it would appear the "pathway" being proposed by the Applicant only circles an internal loop around an existing residential community, and would appear to show only one, possibly two, access points to Paradise Road. Please note that providing a "Tree

Lined Trail" to facilitate the Applicant's justification for not meeting the required 50' buffer (separation) between proposed redevelopment and the surrounding neighborhood, does not eliminate or act as an "in lieu" alternative to meeting the Applicant's requirement for the provision of the compulsory multimodal infrastructure along Paradise Road. Similarly, the Applicant does not address (neither on the Master Concept Plan or in the Narrative/Request) where, if at all, the project's other required multimodal facilities will be located and how they well be connected into/with the existing network in the area. Please note per the Code, the Applicant must connect to all existing (and proposed) facilities in all directions.

Response:
A pathway is proposed within the southern development tract and is identified on the MCP. A pathway on the north tract is not possible due to the extent of water management improvements. The developer has proposed a series of paths and sidewalks as part of the original submittal. The City staff and their drainage consultant have requested that we prioritize public, health, safety, and welfare related to flood control as the highest priority. Sidewalks will be provided on all local streets constructed by the developer. Where feasible after the drainage plan has been approved by the South Florida Water Management District, the applicant and thy city staff will identify opportunities for additional pathways.

2. Deviation 5: Please revise the Master Concept Plan to provide the "proposed roadway cross sections" referenced by the Applicant. As requested, Staff would not be able to support or recommend approval of Deviation 5. As required by LDC Section 3-303(b)(iii), a minimum sidewalk of six (6') feet in width on both sides of the right-of-way and a marked on-street shared bike lanes ("Sharrows"), where travel speeds are posted at 25 mph or less, would be required and appropriate. Please note that the provision of the required multimodal facilities as detailed above would eliminate the need for Deviation 5.

Response:
The proposed roadway cross sections have been included as an attachment to the Master Concept Plan. The proposed roads will be low speed, low volume, and will likely only be traveled through by the future residents of the community. The anticipated levels of pedestrian and vehicular activity do not warrant the installation of six-foot sidewalks on each side of the private rights of way. The City staff and their drainage consultant have prioritized the area wide public drainage system. The site has been constrained to accommodate that system. The City is unable to acquire the land and build the drainage system and has asked the developer to accommodate as much property as possible to protect the neighboring community from flooding.

3. Deviation 7: Please revise the Master Concept Plan to provide the "proposed alternative cross section" reference by the Applicant. As requested, Staff would not be able to support or recommend approval of Deviation 7. The provision of shade providing street trees is paramount to the successful utilization of multimodal infrastructure within any community; especially if said multimodal infrastructure is to be safely and fully utilized year-round. Beyond the clearly apparent life/safely benefits provided by shade street trees in the Florida heat, street trees also provide traffic calming affects (traffic and speeding being a major concern voiced at the neighborhood information meeting); as well as enhanced aesthetics ("curb appeal"), all while working to re-establish much needed vegetated open space (i.e., fodder and habitat) for native and migratory fauna. Please remember, at minimum, "fifty percent of all required open space shall be green or landscape areas." Staff is not entirely opposed to the required street shade canopy trees being located adjacent to the projects required multimodal facilities on abutting residential or common element lots; as has been done by various developers throughout projects across southwest Florida. However, if such considerations were to be given, it is Staff's opinion that the Applicant and any future community association(s) would have to commit to measures and management practices to protect and preserve these required trees (i.e., appropriate siting and installation of root barrier at time of planting; proper pruning practices to assure adequate canopy "shade" coverage and prevention confluences with adjacent vegetation and structures; and the understanding that removal can only be performed via an approved vegetation removal permit and only after appropriate corrective steps have been taken).

Response:
Deviation 7 has been revised to propose a single tree within the ten-foot PUE on each of e residential lots to provide shading of the sidewalks.

<u>Substantive Comments:</u>

1. Staff reserves the right to review and provide additional comments upon resubmittal from the Applicant.

Response:
Acknowledged.

2. Additional review, comment, approval, permitting and inspection/acceptance from the City of Bonita Springs Public Works Department is required for any infrastructure constructed within City maintained rights-of-way (ROWs).

Response:
Acknowledged.

3. Less the deviations and/or exceptions provided in any RPD approval, at the time of local development order, all required multimodal facilities (infrastructure, crossings, amenities, furnishings, access points, easements, etc.), both internal and external to the site, shall meet or exceed the intent of the design standards provided by LDC Chapter 3, the City of Bonita Springs Bicycle Pedestrian Master Plan (PATH), and all applicable design standards except as modified and as required by the Bonita Springs Fire Control and Rescue District and National Fire Protection Area (NFPA).

Response:
Acknowledged.

Please contact: Sean Gibbons, Bike-Ped Coordinator
Phone: 239.444.6176
Email: sgibbons@cityofbonitaspringscd.org

BONITA SPRINGS Traffic Comments

Sufficiency Comments:

1. Please extend the project traffic distribution to include all roadway segments until the project traffic is less than the capacity thresholds (2%, 2%, 3%) as required in the TIS Guidelines. At a minimum, add Old 41 south of Terry Street and Terry Street east and west of Old 41. Revise all tables and figures to include the added segments.

Response:
Understood.

2. Please provide turning movement diagrams for the intersections of Shangri-La Road at Old 41, at Cockleshell Drive, and at Paradise Road. Also provide capacity analyses, both AM and PM peak, for the same three intersections as called for on Page 3 of the Methodology.

Response:
Report will provide counts and capacity analyses as requested.

3. Staff is requesting that the Applicant provide a level of service analysis for the roundabout at Old 41 and Terry Street with the project traffic. It is expected that concerns regarding the impact of the proposed project on the operation of the roundabout will be raised

during the public hearing. The Applicant should be prepared to address any such concerns.

Response:
Understood. As discussed with staff we plan to collect turning movement counts to capture 1 weekday AM (7-9) and PM (4-6), in 15-minute intervals.

4. Staff does not agree with moderating the calculated growth rates to 5%. The growth rates calculated from the historical counts reflect the rapid growth the City is experiencing. Please revise all tables using the growth rates obtained from the counts.

Response:
Justification support to limit estimated maximum future growth is provided in the Traffic Growth Trends dated 5-14-2021.

5. Appendix G, Project Turning Movements – Please include both outbound and inbound turning movements.

Response:
Report will be revised as requested.

6. The Master Concept Plan includes a roundabout along Paradise Road. Please include a conceptual drawing of the roundabout showing the proposed inside and outside radii, the approach treatment, the center island treatment and how the proposed roundabout will fit within the existing right-of-way.

Response:
A roundabout plan has been included with this submittal.

Please contact: Tom Ross, Traffic Group Leader
Phone: 407.718.5443
E-mail: tom.ross2@jacobs.com

LEE COUNTY Natural Resources

Sufficiency Comments:

1. The submitted engineering report proposes that the site will provide additional level of service of the 25-year/3-day storm event. However, this is a general design requirement for environmental resource permits, not an additional benefit. Existing flooding concerns within the general vicinity of this site, coupled with recent flood

mitigation analysis, indicate that additional storage and conveyance consideration would be prudent. Please consider providing storage availability for the 100-year/3-day event as the proposed level of service and supporting analysis.

Response: The applicant is currently in discussions with the City of Bonita Springs to enter into a Development Agreement to make the necessary portions of the site available for stormwater management facilities that would achieve the levels of improvement necessary to receive FEMA grant funding. In the event that the applicant cannot reach an agreement with the City of Bonita Springs to enter into the Development Agreement, the design of the stormwater management system will satisfy the requirements of Section 4-2312(d)(4) to provide equivalent or improved stormwater level of service to the off-site properties that discharge into the existing golf course site. The final design of the stormwater management system will be prepared upon the selection of a final landplan (based on the results of the Developer Agreement discussions and requests for deviations included in this application). The results for the stormwater models for the 5 Year – 1 Day, 25 Year – 3 Day, and 100 Year – 3 Day Storm Events will be provided as a part of the final design submitted with the SFWMD ERP and City of Bonita Springs Development Order applications for the project.

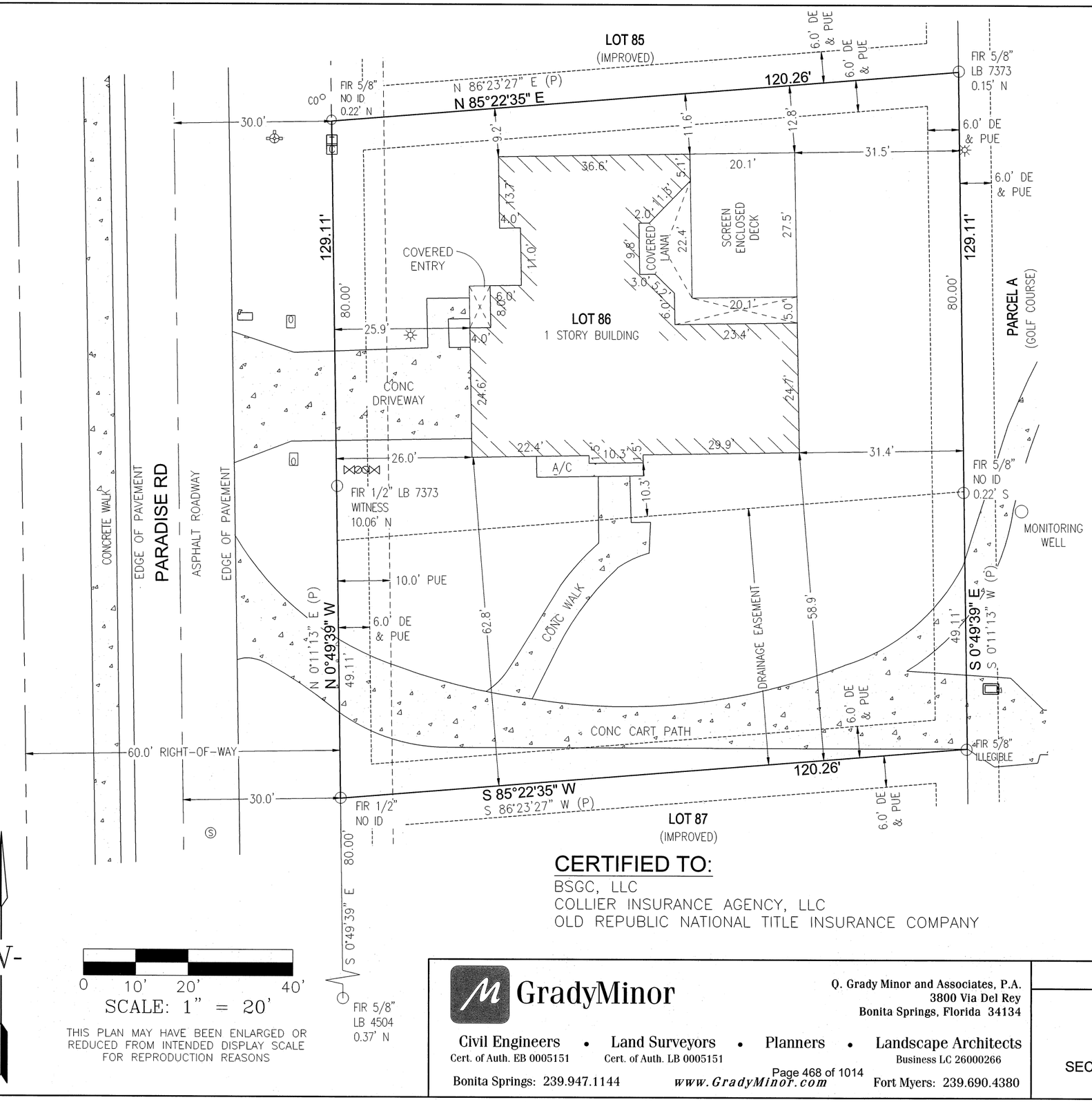
Please contact: Beckie Reide, P.E., Lee County Natural Resources
Phone: 239.533.8183
E-mail: breide@leegov.com

Please feel free to contact me if you have any questions.

Sincerely,

D. Wayne Arnold, AICP

Cc: BSGC Land Holdings, LLC
Pavese Law
GradyMinor File (BCBSCC-20)



-N-

0 10' 20' 40'

SCALE: 1" = 20'

THIS PLAN MAY HAVE BEEN ENLARGED OR REDUCED FROM INTENDED DISPLAY SCALE FOR REPRODUCTION REASONS

CERTIFIED TO:

BSGC, LLC
COLLIER INSURANCE AGENCY, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

PROPERTY DESCRIPTION

(PER PROVIDED TITLE COMMITMENT)

LOT 86, BONITA SPRINGS COUNTRY CLUB UNIT 1, A SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AT PLAT BOOK 30, PAGES 81 THROUGH 84, IN THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA

CONTAINING 0.36 ACRE MORE OR LESS

NOTES:

1. BEARINGS SHOWN HEREON ARE BASED ON THE STATE PLANE COORDINATE SYSTEM ESTABLISHED BY THE NATIONAL GEODETIC SURVEY FOR FLORIDA WEST ZONE, 1983 DATUM WITH 1990 ADJUSTMENT OBTAINED UTILIZING RTK GPS OBSERVATIONS ON THE FDOT NETWORK AND REFER TO THE EAST LINE OF LOT 86, AS BEING S 0°49'39" E.
2. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF ABSTRACT OF TITLE PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, WITH AN OFFICE FILE NUMBER CIA 20-234, HAVING AN EFFECTIVE DATE OF AUGUST 25, 2020 AT 8:00 AM. AND MAY BE SUBJECT TO EASEMENTS, RESERVATIONS AND/OR RESTRICTIONS OF RECORD. ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.
3. THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X, HAVING NO BASE FLOOD ELEVATION, PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP # 12071C 0656 F, DATED 8/28/2008.
4. CERTAIN FEATURES REPRESENTED BY SYMBOLS MAY NOT BE SHOWN AT THEIR TRUE LOCATION AND/OR SCALE IN ORDER TO BE ABLE TO DEPICT THEM ON THIS MAP.
5. DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.
6. THIS SURVEY DOES NOT ADDRESS ANY ENVIRONMENTAL CONCERNS, ENDANGERED WILDLIFE OR JURISDICTIONAL WETLANDS, IF ANY, EXCEPT AS SHOWN ON THIS SURVEY.
7. THIS CERTIFICATION IS ONLY FOR THE LANDS DESCRIBED HEREON. IT IS NOT A CERTIFICATION OF TITLE, ZONING, SETBACKS, OR FREEDOM OF ENCUMBRANCES.
8. THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE DIGITAL SIGNATURE AND DIGITAL SEAL OF A LICENSED FLORIDA SURVEYOR AND MAPPER. NO ADDITIONS OR DELETIONS TO THIS SURVEY MAP ARE PERMITTED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PARTY.
9. UNLESS OTHERWISE NOTED, BELOW GROUND UTILITIES AND FOUNDATIONS WERE NOT LOCATED FOR THE PURPOSES OF THIS SURVEY.
10. BY SIGNING BELOW I CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION AND THAT IT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J-17.051, F.A.C, PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES.
11. LOT IS SUBJECT TO A GOLFERS EASEMENT AS RECORDED IN OFFICIAL RECORDS BOOK 1214, PAGE 2116 AND EASEMENTS REFERRED TO IN OFFICIAL RECORDS BOOK 3826, PAGE 3640, BOTH OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA
12. PER THE RECORDED PLAT THE 6' DE & PUE DEPICTED ALONG THE PERIMETER OF THE LOT EXISTS UNLESS SHOWN OTHERWISE. BECAUSE THERE ARE ADDITIONAL EASEMENTS SHOWN ALONG THE SOUTH AND WEST BOUNDARY OF THE SUBJECT LOT IT IS POSSIBLE THAT THE 6' DE & PUE DOES NOT EXIST AS SHOWN HEREON IN THOSE AREAS. AN ATTORNEY AT LAW SHOULD BE CONSULTED TO CONFIRM THE EXISTENCE OF SAID EASEMENT.
13. DATE OF LAST FIELD WORK: 9/12/2020.

LEGEND

FIP	○ FOUND IRON PIPE	A/C	AIR CONDITIONING UNIT/PAD
FIR	○ FOUND 5/8" IRON ROD	CONC	CONCRETE
(P)	PLAT	CO	○ CLEAN OUT
PB	PLAT BOOK		CATCH BASIN
PG	PAGE(S)		MITERED END
PSM	PROFESSIONAL SURVEYOR AND MAPPER		BACK FLOW PREVENTOR
LB	LICENSED BUSINESS		FIRE HYDRANT
PB	PLAT BOOK		LIGHT POLE
PG	PAGE(S)		TELEPHONE RISER/BOX
PSM	PROFESSIONAL SURVEYOR AND MAPPER		CABLE TELEVISION RISER/BOX
LB	LICENSED BUSINESS	Ⓢ	SANITARY MANHOLE
DE	DRAINAGE EASEMENT		MAILBOX
PUE	PUBLIC UTILITY EASEMENT		

REVISION:
9/28/2020 – ADDED ADDITIONAL EASEMENTS AND NOTE 12.
5/24/2021 – ADDED ACREAGE.

DRAWN BY:	AH
CHECKED BY:	DLS
JOB CODE:	BSGC
SCALE:	1" = 20'
DATE:	22 SEPTEMBER 2020
FILE:	20-144-LOT 86
SHEET:	1 of 1

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380
Q. Grady Minor and Associates, P.A.
3800 Via Del Rey
Bonita Springs, Florida 34134

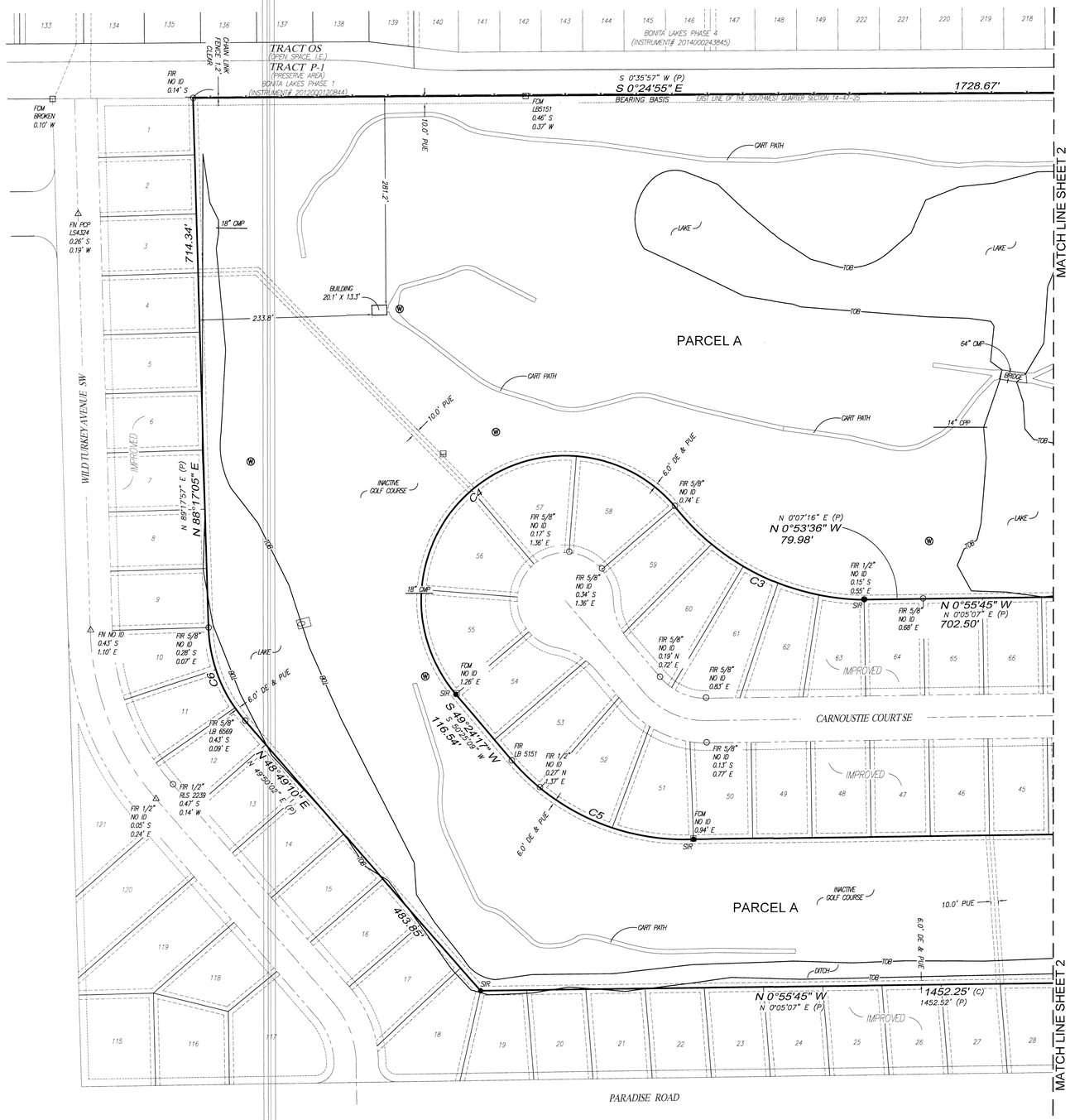
BOUNDARY SURVEY w/ IMPROVEMENTS

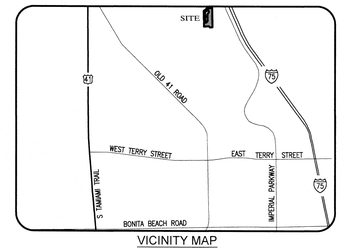
LOT 86
BONITA SPRINGS COUNTRY CLUB UNIT 1
PLAT BOOK 30, PAGES 81-84
LYING IN
SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

5/24/21
DATE SIGNED

DONALD L. SAINTENOY III, P.S.M
FL LICENSE 6761
FOR THE FIRM

G:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GOLF COURSE\SURVEY\20-144-LOT 86.DWG





VICINITY MAP
NOT TO SCALE

CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	260.00'	347.82'	76°38'55"	N 56°17'57" W	322.46'
(P)	260.00'	347.82'	76°38'55"	N 55°17'05" W	322.46'
C2	320.00'	482.02'	86°18'20"	N 42°13'25" E	437.73'
(P)	320.00'	482.02'	86°18'20"	N 43°14'17" E	437.73'
C3	330.00'	294.03'	51°03'01"	N 26°01'31" E	284.40'
(P)	330.00'	294.03'	51°03'01"	N 27°02'23" E	284.40'
C4	195.00'	612.61'	180°00'00"	N 40°35'45" W	390.00'
(P)	195.00'	612.61'	180°00'00"	N 39°34'53" W	390.00'
C5	305.00'	277.02'	52°02'23"	S 23°24'55" W	267.60'
(P)	305.00'	277.02'	52°02'23"	S 24°25'47" W	267.60'
C6	200.00'	137.76'	39°27'35"	N 68°33'18" E	135.05'
(P)	200.00'	137.76'	39°27'55"	N 69°33'59" E	135.05'

PROPERTY DESCRIPTION

(PER PROVIDED TITLE COMMITMENT)
PARCEL 3

PARCEL A, BONITA SPRINGS COUNTRY CLUB, UNIT 1, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 81 THROUGH 84, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

CONTAINING 55.99 ACRES, MORE OR LESS.

NOTES:

1. BEARINGS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM ESTABLISHED BY THE NATIONAL GEODETIC SURVEY FOR FLORIDA WEST ZONE, 1983 DATUM WITH 1990 ADJUSTMENT OBTAINED USING RTK GPS OBSERVATIONS ON THE FDOT NETWORK AND ARE BASED ON THE EAST LINE OF PARCEL "A", BONITA SPRINGS COUNTRY CLUB, UNIT 1, PLAT BOOK 30, PAGES 81 THROUGH 84, PUBLIC RECORDS OF LEE COUNTY, FLORIDA, AS BEING S 0°24'55" E.

2. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE COMMITMENT PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY HAVING A FILE NUMBER OF 18012483 KP AND A COMMITMENT EFFECTIVE DATE OF AUGUST 25, 2020 AT 8:00AM. MAY BE SUBJECT TO EASEMENTS, RESERVATIONS AND/OR RESTRICTIONS OF RECORD. ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.

3. THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X, HAVING NO BASE FLOOD ELEVATION, PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS # 12071C 0593 G, 12071C 0594 G, DATED 7 DECEMBER 2018 AND 12071C 0656 F, AND 12071C 0657 F, DATED 28 AUGUST 2008.

4. CERTAIN FEATURES REPRESENTED BY SYMBOLS MAY NOT BE SHOWN AT THEIR TRUE LOCATION AND/OR SCALE IN ORDER TO BE ABLE TO DEPICT THEM ON THIS MAP.

5. DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.

6. THIS SURVEY DOES NOT ADDRESS ANY ENVIRONMENTAL CONCERNS, ENDANGERED WILDLIFE OR JURISDICTIONAL WETLANDS, IF ANY, EXCEPT AS SHOWN ON THIS SURVEY.

7. THIS CERTIFICATION IS ONLY FOR THE LANDS DESCRIBED HEREON. IT IS NOT A CERTIFICATION OF TITLE, ZONING, SETBACKS, OR FREEDOM OF ENCUMBRANCES.

8. THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE DIGITAL SIGNATURE AND DIGITAL SEAL OF A LICENSED FLORIDA SURVEYOR AND MAPPER. NO ADDITIONS OR DELETIONS TO THIS SURVEY MAP ARE PERMITTED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PARTY.

9. UNLESS OTHERWISE NOTED, BELOW GROUND UTILITIES AND FOUNDATIONS WERE NOT LOCATED FOR THE PURPOSES OF THIS SURVEY.

10. BY SIGNING BELOW I CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION AND THAT IT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J-17.051, F.A.C, PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES.

11. PARCEL A AS SHOWN ON THE RECORDED PLAT DOES NOT CLOSE MATHEMATICALLY. THE MISCLOSURE HAS BEEN ACCOUNTED FOR BY THE CALCULATED DISTANCES SHOWN HEREON.

12. DATE OF LAST FIELD WORK: 11 SEPTEMBER 2020.

N

0 40' 80' 160'
SCALE: 1" = 80'

THIS PLAN MAY HAVE BEEN ENLARGED OR REDUCED FROM INTENDED DISPLAY SCALE FOR REPRODUCTION REASONS

CERTIFIED TO:

BS PROPERTY HOLDINGS, LLC
BSGC LAND HOLDINGS, LLC
COLLIER INSURANCE AGENCY, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

LEGEND

POC	POINT OF COMMENCEMENT	(P)	PLAT	TG	TOP OF GRATE ELEVATION	MHD	DRAINAGE MANHOLE	SV	SEWER VALVE
POB	POINT OF BEGINNING	(M)	MEASURED	RIM	RIM ELEVATION	E	ELECTRIC MANHOLE	SIGN	SIGN ON POLE
FIP	FOUND IRON PIPE	(C)	CALCULATED	INV	INVERT ELEVATION	EB	ELECTRIC BOX/RISER/METER		TELEPHONE MANHOLE
FIR	FOUND 5/8" IRON ROD	(D)	DEED	ELEV	ELEVATION	FH	FIRE HYDRANT	TRS	TELEPHONE BOX/RISER
SIR	SET 5/8" IRON ROD w/CAP, LB. #5151	A/C	AIR CONDITIONING UNIT		ELECTRIC TRANSFORMER	TL	TRAFFIC LIGHT
FDM	FOUND 4"X4" CONCRETE MONUMENT	BOL	CONCRETE BOLLARD	GSM	GAS SERVICE/METER	UG	UNDERGROUND
SCM	SET CONC. MONUMENT w/ALUMINUM DISK, LB.# 5151	GT	GREASE TRAP	GV	GAS VALVE	UPW	UTILITY POLE - WOOD
		PB	PLAT BOOK		GUY ANCHOR	UPC	UTILITY POLE - CONCRETE
FPK	FOUND PARKER KALON NAIL	PG	PAGE	IV	IRRIGATION VALVE		WATER METER
SPK	SET PARKER KALON NAIL w/BRASS DISK, LB.# 5151	CB	CATCH BASIN/INLET	ICV	IRRIGATION CONTROL VALVE	WV	WATER VALVE
		CO	CLEAN OUT	LP	LIGHT POLE	YD	YARD DRAIN
FDH	FOUND DRILL HOLE	CONC.	CONCRETE		MITERED END		OAK TREE
SDH	SET DRILL HOLE	CHW	CONCRETE HEAD WALL	OH	OVERHEAD WIRES		PALM TREE
FMN	FOUND MAG NAIL	℄	CENTERLINE	RCP	REINFORCED CONCRETE PIPE		PINE TREE
FND	FOUND	CMP	CORRUGATED METAL PIPE	MHS	SANITARY MANHOLE		WELL
		CPP	CORRUGATED PLASTIC PIPE	NGVD 29	NATIONAL GEODETIC VERTICAL DATUM OF 1929	DIP	DUCTILE IRON PIPE
		DE	DRAINAGE EASEMENT	NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988		
		UE	UTILITY EASEMENT				

REVISION: ADDED ACREAGE AND REVISED NOTE 2 5-21-2021.
REVISION: UPDATED BOUNDARY SURVEY 9-19-2020.

NOT COMPLETE WITHOUT SHEETS 1-2 OF 2

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380
Q. Grady Minor and Associates, P.A.
3800 Via Del Rey
Bonita Springs, Florida 34134

DRAWN BY:	KJG
CHECKED BY:	DLS
JOB CODE:	BSGC
SCALE:	1" = 80'
DATE:	21 MAY 2018
FILE:	20-144-BS NORTH.DWG
SHEET:	1 of 2

BOUNDARY SURVEY
BONITA SPRINGS COUNTRY CLUB, UNIT 1
PARCEL A
PLAT BOOK 30, PAGES 81 THROUGH 84
LYING IN
SECTIONS 14 AND 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

5/24/21
DATE SIGNED

DONALD L. SAVITSKY III, P.S.M
FL LICENSE #6761
FOR THE FIRM

G:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GOLF COURSE\SURVEY\20-144-BS NORTH.DWG

MATCH LINE SHEET 1

BONITA LAKES PHASE 4 (INSTRUMENT# 2014000243845)

TRACT OS (OPEN SPACE, I.E.)

TRACT P-1 (PRESERVE AREA) BONITA LAKES PHASE 1 (INSTRUMENT# 2012000120844)

SIR MICHAEL'S PLACE PB 67, PAGE 95

BONITA GULF CLUB VILLAS PB 32, PAGE 15

S 0°35'57" W (P)
S 0°24'55" E
BEARING BASIS
1728.67'
EAST LINE OF THE SOUTHWEST QUARTER SECTION 14-47-25

FENCE 0.40' FROM NO ID 0.27' S 0.46' W

10.0' P.U.E.

S 0°29'42" W (P)
S 0°31'10" E
966.51'
EAST LINE OF THE NORTHWEST QUARTER SECTION 23-47-25

FIR (UNDER WATER) LB 5151

FIR 5/8" NO ID 0.42' S 0.13' W

FIR 5/8" NO ID 0.39' S 0.46' E

FIR 5/8" NO ID 0.28' S 0.47' E

FIR 5/8" NO ID 0.31' S 0.12' E

FIR 5/8" NO ID 0.97' N 0.82' E

FIR 5/8" PSM 3667 0.08' N 0.38' E

FIP 1" NO ID 0.36' N 0.11' E

PARCEL A

CART PATH

TOB

LAKE

CART PATH

6.0' DE & PUE

353.13'

IMPROVED

S 85°22'03" W
S 86°22'55" W (P)

FIR 5/8" NO ID 0.49' N

FIR 5/8" LB 6569 0.49' N

WOOD IBIS AVENUE SE

24" CMP

C1

△F40D NO ID 0.21' N 0.29' W

△F40D NO ID 0.27' N 0.10' W

FIR 5/8" LB 6569 0.08' N 0.13' E

FIR 5/8" NO ID 1.29' N 0.23' W

FIR 1/2" NO ID 0.57' N 0.46' E

SIR

DITCH

572.48'

IMPROVED

WOODIBIS AVENUE SE

INACTIVE GOLF COURSE

SOUTH LINE SECTION 14-47-25
NORTH LINE SECTION 23-47-25

CARNOUSTIE COURT SE

IMPROVED

FIR LB 5151 0.16' S 0.31' E

6.0' DE & PUE

N 0°55'45" W
N 0°05'07" E (P)
702.50'

C2

S 0°05'07" W (P)
S 0°55'45" E
1148.00'

FIR 5/8" NO ID 0.04' S 0.27' W

FIR 5/8" NO ID 0.45' S 0.50' W

N 85°22'35" E
N 86°23'27" E (P)
221.52' (C)
221.10' (P)

6" DIP

CART PATH

FIR 5/8" NO ID 0.22' W

IMPROVED

FIR 1/2" LB 3553 0.33' N 0.11' W

S 85°22'35" W
S 86°23'27" W (P)

PARCEL A

6.0' DE & PUE

CART PATH

6" PVC

12" CMP

TOB

DITCH

LIFT STATION

SIR

FIR 5/8" NO ID 0.22' S

FIR 5/8" ILLEGIBLE

FIR 5/8" NO ID 0.10' S 0.16' E

N 0°55'45" W
N 0°05'07" E (P)
1452.25' (C)
1452.52' (P)

IMPROVED

FIR LB 5151 0.56' S

30.0' DE

N 0°49'39" W
N 0°11'13" E (P)
558.83'

FIR 1/2" LB 7121 1.01' S 0.37' W

FIR 5/8" LB 7373 0.15' N

DRAINAGE EASEMENT

49.0'

FIR 1/2" ILLEGIBLE 0.23' N 0.24' E

FIR 1/2" LB 3196 0.16' S 0.45' E

FIR 1/2" NO ID 0.22' N

FIR 1/2" LB 7373 WITNESS 10.06' N

FIR 1/2" NO ID

FIR 5/8" LB 4524 0.37' N

PARADISE ROAD

MATCH LINE SHEET 1

N

0 40' 80' 160'

SCALE: 1" = 80'

THIS PLAN MAY HAVE BEEN ENLARGED OR REDUCED FROM INTENDED DISPLAY SCALE FOR REPRODUCTION REASONS

CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	260.00'	347.82'	76°38'55"	N 56°17'57" W	322.46'
(P)	260.00'	347.82'	76°38'55"	N 55°17'05" W	322.46'
C2	320.00'	482.02'	86°18'20"	N 42°13'25" E	437.73'
(P)	320.00'	482.02'	86°18'20"	N 43°14'17" E	437.73'
C3	330.00'	294.03'	51°03'01"	N 26°01'31" E	284.40'
(P)	330.00'	294.03'	51°03'01"	N 27°02'23" E	284.40'
C4	195.00'	612.61'	180°00'00"	N 40°35'45" W	390.00'
(P)	195.00'	612.61'	180°00'00"	N 39°34'53" W	390.00'
C5	305.00'	277.02'	52°02'23"	S 23°24'55" W	267.60'
(P)	305.00'	277.02'	52°02'23"	S 24°25'47" W	267.60'
C6	200.00'	137.76'	39°27'35"	N 68°33'18" E	135.05'
(P)	200.00'	137.76'	39°27'35"	N 69°33'59" E	135.05'

LEGEND

POC	POINT OF COMMENCEMENT	(P)	PLAT	TG	TOP OF GRATE ELEVATION	MHD	DRAINAGE MANHOLE	SV	SEWER VALVE
POB	POINT OF BEGINNING	(M)	MEASURED	RIM	RIM ELEVATION		ELECTRIC MANHOLE	SIGN	SIGN ON POLE
FIP	FOUND IRON PIPE	(C)	CALCULATED	INV	INVERT ELEVATION	EB	ELECTRIC BOX/RISER/METER		TELEPHONE MANHOLE
FIR	FOUND 5/8" IRON ROD	(D)	PER DEED	ELEV	ELEVATION	FH	FIRE HYDRANT	TRS	TELEPHONE BOX/RISER
SIR	SET 5/8" IRON ROD w/CAP, L.B. #5151	A/C	AIR CONDITIONING UNIT		ELECTRIC TRANSFORMER	TL	TRAFFIC LIGHT
FCM	FOUND 4"X4" CONCRETE MONUMENT	BFP	BACK FLOW PREVENTOR	GSM	GAS SERVICE/METER	UG	UNDERGROUND
SCM	SET CONC. MONUMENT w/ALUMINUM DISK, L.B.# 5151	PB	PLAT BOOK	GV	GAS VALVE	UPW	UTILITY POLE – WOOD
		PG	PAGE		GUY ANCHOR	UPC	UTILITY POLE – CONCRETE
FPK	FOUND PARKER KALON NAIL	OR	OFFICIAL RECORDS BOOK	IV	IRRIGATION VALVE		WATER METER
SPK	SET PARKER KALON NAIL w/BRASS DISK, L.B.# 5151	R.O.W.	RIGHT-OF-WAY	ICV	IRRIGATION CONTROL VALVE	WV	WATER VALVE
		EOP	EDGE OF PAVEMENT	LP	LIGHT POLE	YD	YARD DRAIN
FDH	FOUND DRILL HOLE	PUE	PUBLIC UTILITY EASEMENT		MITERED END		OAK TREE
SDH	SET DRILL HOLE	LB	LICENSED BUSINESS	OH	OVERHEAD WIRES		PALM TREE
FMN	FOUND MAG NAIL	PSM	PROFESSIONAL SURVEYOR AND MAPPER	RCP	REINFORCED CONCRETE PIPE		PINE TREE
FND	FOUND	SPC	STATE PLANE COORDINATES	MHS	SANITARY MANHOLE		WELL
				NGVD 29	NATIONAL GEODETIC VERTICAL DATUM OF 1929	DIP	DUCTILE IRON PIPE
				NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988		

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3800 Via Del Rey
Bonita Springs, Florida 34134

DRAWN BY:	KJG
CHECKED BY:	DLS
JOB CODE:	BSGC
SCALE:	1" = 80'
DATE:	21 MAY 2018
FILE	20-144-BS NORTH.DWG
SHEET:	2 of 2

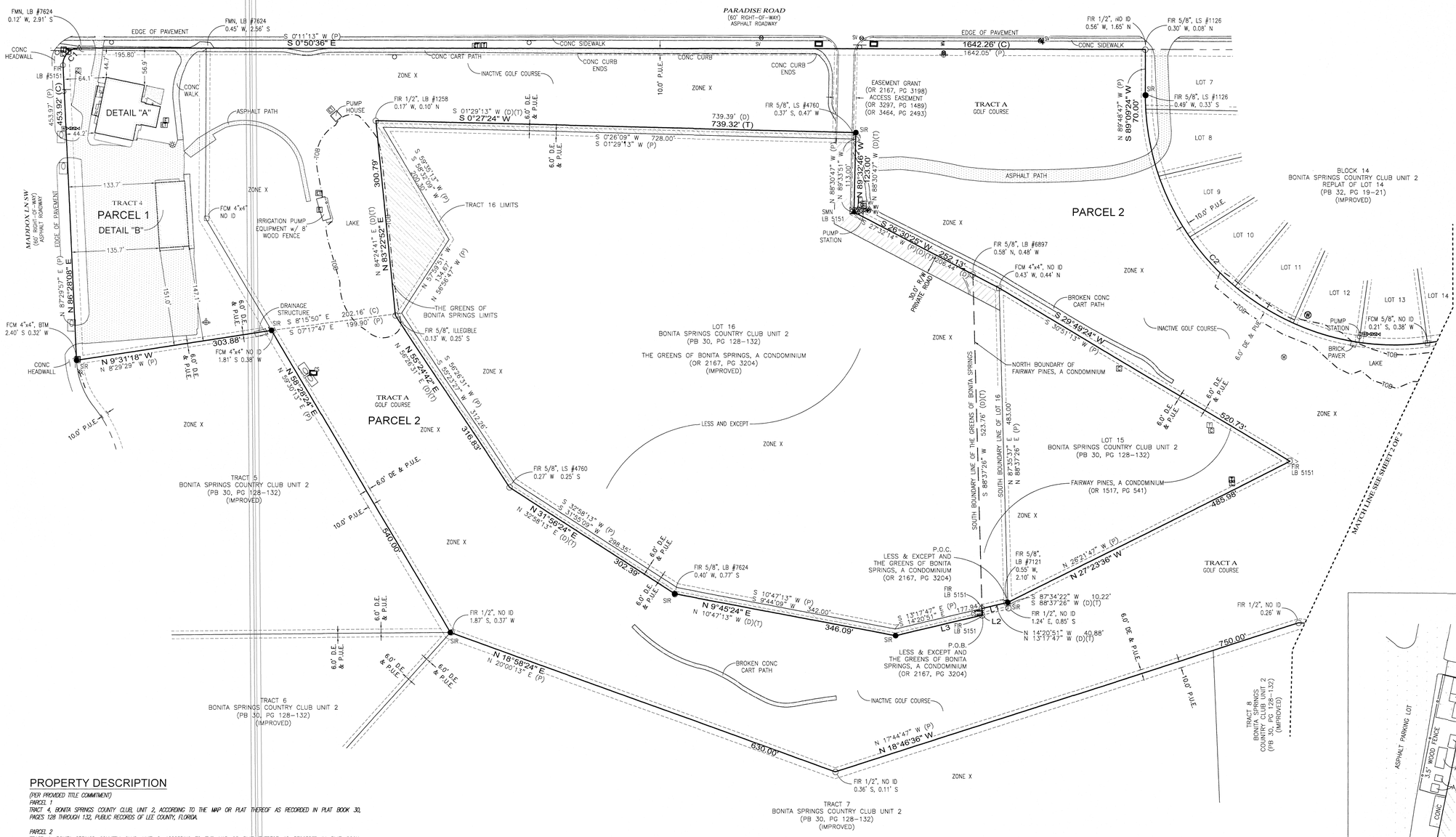
BOUNDARY SURVEY

BONITA SPRINGS COUNTRY CLUB, UNIT 1
PARCEL A
PLAT BOOK 30, PAGES 81 THROUGH 84

LYING IN
SECTIONS 14 AND 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

NOT COMPLETE WITHOUT SHEETS 1–2 OF 2

G:\SURVEY\PROJECT SURVEY 2020\144 – BONITA GOLF COURSE\SURVEY\20-144-BS NORTH.DWG



PROPERTY DESCRIPTION

(PER PROVIDED TITLE COMMITMENT)

PARCEL 1
TRACT 4, BONITA SPRINGS COUNTY CLUB, UNIT 2, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

PARCEL 2
TRACT A, BONITA SPRINGS COUNTRY CLUB, UNIT 2, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, PUBLIC RECORDS OF LEE COUNTY, FLORIDA,

LESS AND EXCEPT THE FOLLOWING DESCRIBED LANDS: A LOT OR PARCEL OF LAND LOCATED IN THE NORTHWEST 1/4 OF SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST, LEE COUNTY, FLORIDA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF TRACT 15, BONITA SPRINGS COUNTRY CLUB, UNIT 2, AS RECORDED IN PLAT BOOK 30, PAGE 132, IN THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA, RUN SOUTH 88°30'47" EAST FOR 10.22 FEET; THENCE RUN NORTH 13°17'47" WEST FOR 40.88 FEET TO THE POINT OF BEGINNING OF THE LANDS HEREIN DESCRIBED;

THENCE CONTINUE NORTH 13°17'47" WEST FOR 137.08 FEET; THENCE RUN NORTH 10°47'13" EAST FOR 346.09 FEET; THENCE RUN NORTH 32°58'13" EAST FOR 302.39 FEET; THENCE RUN NORTH 56°26'31" EAST FOR 316.83 FEET; THENCE RUN NORTH 84°24'41" EAST FOR 300.79 FEET; THENCE RUN SOUTH 01°29'13" WEST FOR 739.32 FEET TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY OF A 30 FOOT WIDE PRIVATE ROAD EXTENDING SOUTH 88°30'47" EAST; THENCE RUN NORTH 88°30'47" WEST FOR 123.00 FEET; THENCE RUN SOUTH 27°32'14" WEST FOR 206.44 FEET; THENCE RUN SOUTH 88°37'26" WEST FOR 523.76 FEET TO THE POINT OF BEGINNING.

PARCEL 6
TRACT 10, BONITA SPRINGS COUNTRY CLUB, UNIT 2, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

CONTAINING 56.96 ACRES, MORE OR LESS.

CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	25.00'	40.44'	92°41'16"	S 47°11'14" E	36.17'
C1 (P)	25.00'	40.44'	92°41'16"	S 46°09'25" E	36.17'
C2	383.00'	653.75'	97°48'00"	S 40°15'26" W	577.23'
C2 (P)	383.00'	653.75'	97°48'00"	S 41°17'13" W	577.23'

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N 14°19'36" W	40.88'
L2	S 87°35'37" W	10.22'
L3	N 14°19'36" W	137.09'
L3 (T)	N 13°17'47" W	137.08'
L3 (D)	N 13°17'47" W	137.80'

LEGEND

POC	POINT OF COMMENCEMENT	(P)	PER PLAT
POB	POINT OF BEGINNING	(M)	MEASURED
FIP	FOUND IRON PIPE	(C)	CALCULATED
FIR	FOUND 5/8" IRON ROD	(D)	PER DEED
SIR	SET 5/8" IRON ROD w/CAP, L.B. #5151	(EA)	TEMPORARY EASEMENT AGREEMENT
FCM	FOUND 4"x4" CONCRETE MONUMENT	BOL	CONCRETE BOLLARD
SCM	SET CONC. MONUMENT w/ALUMINUM DISK, L.B.# 5151	(T)	PER TITLE COMMITMENT
		PB	PLAT BOOK
FPK	FOUND PARKER KALON NAIL	PG	PAGE
SMN	SET MAG NAIL w/BRASS DISK, L.B.# 5151	OR	OFFICIAL RECORDS BOOK
		R.O.W.	RIGHT-OF-WAY
FDH	FOUND DRILL HOLE	EOP	EDGE OF PAVEMENT
SDH	SET DRILL HOLE	U.E.	UTILITY EASEMENT
FMN	FOUND MAG NAIL	LB	LICENSED BUSINESS
FND	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
SMN	SET MAG NAIL w/BRASS DISK, L.B.# 5151	SPC	STATE PLANE COORDINATES
		CLF	CHAIN LINK FENCE

TG	TOP OF GRATE ELEVATION		DRAINAGE MANHOLE
RIM	RIM ELEVATION		ELECTRIC MANHOLE
INV	INVERT ELEVATION		ELECTRIC BOX/RISER/METER
ELEV	ELEVATION		FIRE HYDRANT
A/C	AIR CONDITIONING UNIT		ELECTRIC TRANSFORMER
BFP	BACK FLOW PREVENTOR		GAS SERVICE/METER
	CABLE T.V. BOX/RISER		GREASE TRAP
	CATCH BASIN/INLET		GUY ANCHOR
CO	CLEAN OUT	IRV	IRRIGATION VALVE
CONC	CONCRETE	ICV	IRRIGATION CONTROL VALVE
	CONCRETE HEAD WALL		LIGHT POLE
	CENTERLINE		MITERED END
	CORRUGATED METAL PIPE		OVERHEAD WIRES
CPP	CORRUGATED PLASTIC PIPE	RCP	REINFORCED CONCRETE PIPE
FPL	FLORIDA POWER & LIGHT		SANITARY MANHOLE
	WELL/MONITORING WELL		UNDERGROUND BURIED CABLE MARKER
		NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988

SV	SEWER VALVE		= CONCRETE
	SIGN ON POLE		= ASPHALT
	TELEPHONE MANHOLE		= BRICK PAVER
	TELEPHONE BOX/RISER		= THE GREENS CONDO OVERLAPS TRACT A
TL	TRAFFIC LIGHT		
UG	UNDERGROUND		
	UTILITY POLE - WOOD		
	UTILITY POLE - CONCRETE		
W	WATER METER		
WV	WATER VALVE		
YD	YARD DRAIN		
	AIR RELEASE VALVE		
EOW	EDGE OF WATER		
TOB	TOP OF BANK		
TOS	TOE OF SLOPE		
CS	CONTROL STRUCTURE		

FZ FZ FZ
APPROXIMATE FLOOD ZONE / ELEVATION LINE

REVISION: ADDED ACREAGE AND PEVISED NOTE 2 5-21-2021.
REVISION: UPDATED BOUNDARY : RVEY 9-15-2020.

CERTIFIED TO:
BS PROPERTY HOLDINGS, LLC
BSGC LAND HOLDINGS, LLC
COLLIER INSURANCE AGENCY, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

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Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
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Q. Grady Minor and Associates, P.A.
3800 Via Del Rey
Bonita Springs, Florida 34134

DRAWN BY:	AH
CHECKED BY:	DLS
JOB CODE:	BSCCBS
SCALE:	1" = 80'
DATE:	21 MAY 2018
FILE:	20-144-BS SOUTH.DWG
SHEET:	1 of 2

NOT COMPLETE WITHOUT SHEETS 1-2 OF 2

BOUNDARY SURVEY

TRACT A AND TRACT 4 AND TRACT 10
BONITA SPRINGS COUNTRY CLUB UNIT 2
PLAT BOOK 30, PAGES 128-132
LYING IN
SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

5/24/21
DATE SIGNED

RONALD L. SAINTENOY III, P.S.M.
FL LICENSE #6761
FOR THE FIRM

G:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GOLF COURSE\SURVEY\20-144-BS SOUTH.DWG

NOTES:

1. BEARINGS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM ESTABLISHED BY THE NATIONAL GEODETIC SURVEY FOR FLORIDA WEST ZONE, 1983 DATUM WITH 1990 ADJUSTMENT OBTAINED USING RTK GPS OBSERVATIONS ON THE FDOT NETWORK AND ARE BASED ON THE EAST LINE OF TRACT A, BONITA SPRINGS COUNTRY CLUB, UNIT 2, AS RECORDED IN PLAT BOOK 30, PAGES 128–132, OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA AS BEING S 0°50'36" E.

2. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE COMMITMENT PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY HAVING A FILE NUMBER OF 18012483 KP AND A COMMITMENT EFFECTIVE DATE OF AUGUST 25, 2020 AT 8:00AM. MAY BE SUBJECT TO EASEMENTS, RESERVATIONS AND/OR RESTRICTIONS OF RECORD. ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.

3. THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X, HAVING NO BASE FLOOD ELEVATION, AND FLOOD ZONE AE, HAVING A BASE FLOOD ELEVATION OF 13.0' AND 13.4' (NAVD 88), PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP # 12071C 0656 F, DATED 8/28/2008. FLOOD LINES SHOWN HEREON WERE OBTAINED FROM A LEE COUNTY GIS FILE AND ARE ASSUMED TO BE APPROXIMATE.

4. CERTAIN FEATURES REPRESENTED BY SYMBOLS MAY NOT BE SHOWN AT THEIR TRUE LOCATION AND/OR SCALE IN ORDER TO BE ABLE TO DEPICT THEM ON THIS MAP.

5. DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.

6. THIS SURVEY DOES NOT ADDRESS ANY ENVIRONMENTAL CONCERNS, ENDANGERED WILDLIFE OR JURISDICTIONAL WETLANDS, IF ANY, EXCEPT AS SHOWN ON THIS SURVEY.

7. THIS CERTIFICATION IS ONLY FOR THE LANDS DESCRIBED HEREON. IT IS NOT A CERTIFICATION OF TITLE, ZONING, SETBACKS, OR FREEDOM OF ENCUMBRANCES.

8. THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE DIGITAL SIGNATURE AND DIGITAL SEAL OF A LICENSED FLORIDA SURVEYOR AND MAPPER. NO ADDITIONS OR DELETIONS TO THIS SURVEY MAP ARE PERMITTED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PARTY.

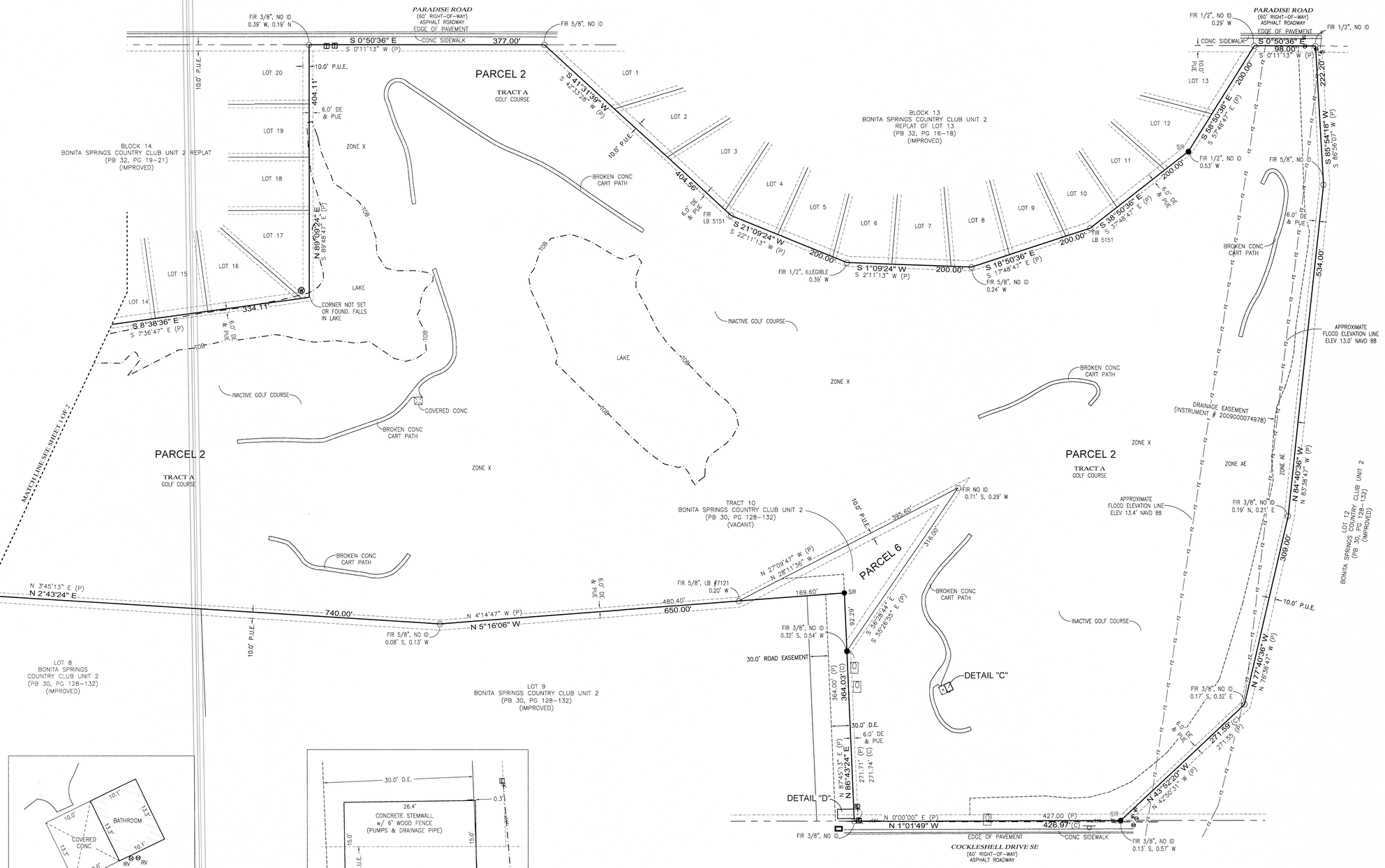
9. UNLESS OTHERWISE NOTED, BELOW GROUND UTILITIES AND FOUNDATIONS WERE NOT LOCATED FOR THE PURPOSES OF THIS SURVEY.

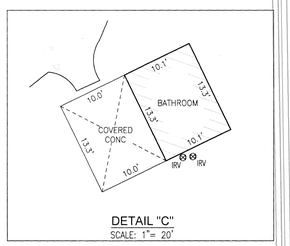
10. BY SIGNING BELOW I CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION AND THAT IT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J–17.051, F.A.C, PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES.

11. DATE OF LAST FIELD WORK: 9/15/2020.

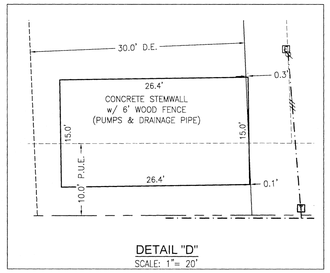
12. THERE APPEARS TO BE AN OVERLAP BETWEEN THE GREENS OF BONITA SPRINGS CONDOMINIUM, AS RECORDED IN OFFICIAL RECORDS BOOK 2167, PAGE 3204, OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA AND TRACT A OF BONITA SPRINGS COUNTRY CLUB UNIT 2, AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA. SAID OVERLAP IS SHOWN HEREON.

13. THE 30 FOOT PRIVATE ROAD RIGHT–OF–WAY SHOWN ON THE RECORDED PLAT IS NOT SHOWN HEREON. THAT PORTION WITHIN TRACT "A" WAS VACATED BY RESOLUTION 88–7–21, THAT PORTION WITHIN BLOCK 14 WAS REMOVED AT THE REQUEST OF THE ATTORNEY.





DETAIL "C"
SCALE: 1"= 20'



DETAIL "D"
SCALE: 1"= 20'

LEGEND

POC	POINT OF COMMENCEMENT	(P)	PER PLAT	TG	TOP OF GRATE ELEVATION		DRAINAGE MANHOLE
POB	POINT OF BEGINNING	(M)	MEASURED	RIM	RIM ELEVATION		ELECTRIC MANHOLE
FIP	○ FOUND IRON PIPE	(C)	CALCULATED	INV	INVERT ELEVATION		ELECTRIC BOX/RISER/METER
FIR	○ FOUND 5/8" IRON ROD	(D)	PER DEED	ELEV	ELEVATION		FIRE HYDRANT
SIR	● SET 5/8" IRON ROD w/CAP, LB. #5151	(EA)	TEMPORARY EASEMENT AGREEMENT	A/C	AIR CONDITIONING UNIT		ELECTRIC TRANSFORMER
FCM	▭ FOUND 4"x4" CONCRETE MONUMENT	BOL	BACK FLOW PREVENTOR		CABLE T.V. BOX/RISER		GAS SERVICE/METER
SCM	■ SET CONC. MONUMENT w/ALUMINUM DISK, L.B.# 5151	(T)	PER TITLE COMMITMENT		CATCH BASIN/INLET		GREASE TRAP
FPK	△ FOUND PARKER KALON NAIL	PB	PLAT BOOK	IRV	IRRIGATION VALVE		GUY ANCHOR
SMN	▲ SET MAG NAIL w/BRASS DISK, L.B.# 5151	PG	PAGE	ICV	IRRIGATION CONTROL VALVE		LIGHT POLE
FDH	○ FOUND DRILL HOLE	OR	OFFICIAL RECORDS BOOK	CO	CLEAN OUT		METERED END
SDH	● SET DRILL HOLE	R.O.W.	RIGHT–OF–WAY	CONC.	CONCRETE		OVERHEAD WIRES
FMN	△ FOUND MAG NAIL	E.O.P.	EDGE OF PAVEMENT	CHW	CONCRETE HEAD WALL	RCP	REINFORCED CONCRETE PIPE
FND	FOUND	U.E.	UTILITY EASEMENT	℄	CENTERLINE		SANITARY MANHOLE
SMN	▲ SET MAG NAIL w/BRASS DISK, L.B.# 5151	LB	LICENSED BUSINESS	CMP	CORRUGATED METAL PIPE		UNDERGROUND BURIED CABLE MARKER
		PSM	PROFESSIONAL SURVEYOR AND MAPPER	CPP	CORRUGATED PLASTIC PIPE	NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988
		SPC	STATE PLANE COORDINATES	FPL	FLORIDA POWER & LIGHT		
		CLF	CHAIN LINK FENCE	MW	MONITORING WELL		
				W	WELL		

SV	SEWER VALVE		= CONCRETE
	SIGN ON POLE		TELEPHONE MANHOLE
	TELEPHONE BOX/RISER		= ASPHALT
TL	TRAFFIC LIGHT		TELEPHONE BOX/RISER
UG	UNDERGROUND		= BRICK PAVER
	UTILITY POLE – WOOD		
	UTILITY POLE – CONCRETE		= THE GREENS CONDO OVERLAPS TRACT A
	WATER METER		
WV	WATER VALVE		
YD	YARD DRAIN		
	AIR RELEASE VALVE		
EOW	EDGE OF WATER		
TOS	TOP OF BANK		
TOS	TOE OF SLOPE		
CS	CONTROL STRUCTURE		

— fz — fz — fz — APPROXIMATE FLOOD ZONE / ELEVATION LINE

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Cert. of Auth. EB 0005151 • Cert. of Auth. LB 0005151 • Business LC 26000266

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BOUNDARY SURVEY

TRACT A, TRACT 4 AND TRACT 10
BONITA SPRINGS COUNTRY CLUB UNIT 2
PLAT BOOK 30, PAGES 128-132
LYING IN
SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

NOT COMPLETE WITHOUT SHEETS 1–2 OF 2

G:\SURVEY\PROJECT SURVEY 2020\144 – BONITA GOLF COURSE\SURVEY\20–144–BS SOUTH.DWG

Bonita Springs Golf Course RPD Rezone

Exhibit II-E-2 – Narrative how complies with comp plan
Exhibit IV-D – Description of proposed development

The Applicant proposes to obtain an RPD that permits redevelopment of the defunct Bonita Springs golf course property. The request is a change from the current zoning of RS-1 and RM-2 to an RPD that permits up to 500 residential dwelling units of varying unit types including single family, detached and attached, two-family attached, multiple family and townhouse.

The applicant conducted the required neighborhood informational meeting. This application addresses the criteria for redeveloping a golf course as required in LDC Section 4-2312.

The subject properties are located in two Future Land Use Element (FLUE) categories. The **North** Parcel is approximately 56.2± acres and is located in the Moderate Density Residential Future Land Use Category (Policy 1.1.7).

> ***Policy 1.1.7: Moderate Density Residential*** *- Intended to accommodate and preserve single-family residential development at a maximum density of up to 5.8 dwelling units per gross acre and approximately 1,977 acres of gross land area in the land use category; planned unit developments at a maximum density of six units per acre; group homes and foster care facilities; public schools and other public, semi-public and recreational uses on a limited basis.*
>
> *a. Appropriate residential housing types include conventional and modular constructed single-family homes on permanent foundations.*
> *b. Maximum allowable height of structures shall be 35 feet from the base flood elevation to the eaves.*

This FLUE category permits residential densities at 6 du/acre for a planned development. This would permit a maximum of 337 dwelling units on this portion of the property. The north parcel proposes only single family attached and detached residences and two-family (twin villa) consistent with this policy.

The **South** Parcel is approximately 56.8± acres and is designated Medium Density Multifamily Residential (Policy 1.1.8.1).

Policy 1.1.8.1: Medium Density Multi-Family Residential *- Intended to accommodate multi-family, modular and manufactured housing, and existing mobile home and recreational vehicle parks up to a maximum density of 10 units per gross acre and approximately 1,341 acres of gross land area in the land use category; group homes and foster care facilities, public schools and other public, semi-public and recreational uses on a limited basis. This land use category is applied primarily to existing properties developed with multi-family or mobile*

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home/recreational vehicle parks located within the Coastal Management Area (CMA), or lands formerly afforded a land use designation of Urban Community in the Lee Plan, or properties adjacent to existing or planned major roadways.

a. *Appropriate residential housing types include conventional and modular constructed single-family and duplex structures, on permanent foundations, cluster housing, zero lot line, townhouses, multi-family structures, and mobile homes or recreational vehicles in existing mobile home or recreational vehicle parks.*
b. *Residential density shall be limited to not more than six units dwelling units per acre. If affordable housing is provided, residential density may be increased by up to four additional dwelling units per acre. This density range is consistent with the density previously afforded under the Urban Community land use designation in the Lee Plan.*
c. *Commercial uses may be appropriate provided they are primarily intended to serve the residents of a mixed use project and are sensitive to nearby residential uses.*
d. *Maximum allowable height of structures shall be 75 feet from the base flood elevation to the eaves, except that no new structures or modification of existing structures located on the islands west of the mainland may be constructed in excess of 35 feet in height.*

This FLUE category permits a maximum density of 6 du/acre. This would permit a maximum of 340 dwelling units on this portion of the property. This south parcel will permit a variety of dwelling unit types including single family, two family, townhome and multi-family.

Both land use categories permit single-family dwellings consistent with the FLUE as well as duplex and townhomes. The 113± acre project would permit a maximum of over 670 dwelling units. The proposed 500 dwellings are well within the density permissible under the two FLUE designations.

The RPD proposes a variety of dwelling unit types and accessory uses.

There are no level of service issues of note in the vicinity, and all public facilities are available to serve the RPD. A traffic analysis has been submitted in support of the RPD application. Minor intersection improvements will be required and are further addressed in the TIS.

Deviations have been requested in order to develop the property consistent with the Master Concept Plan, neighborhood comments, and regional stormwater management needs.

As mentioned briefly above in the first paragraph, a neighborhood information meeting was held by the applicant at the Bonita Fire and Rescue District Station, Bonita Grande Drive, on September 10, 2020. The proposed Master Plan and RPD standards are consistent with the

discussion at the information meeting. At the informational meeting, residents made several comments and suggestions for the applicant to consider in the development plans for the property.

The proposed RPD is compatible with the surrounding single-family dwellings, and less intensive than the surrounding three-story condominiums. The RPD as proposed is consistent with the City's Comprehensive Plan and criteria for rezoning. Public facilities are available at the project site consistent with the Goals, Objectives and Policies of the Infrastructure Element. The attached Traffic Analysis demonstrates there are no roadway level of service issues consistent with the Transportation Element.

The Bonita Springs Land Development Code (LDC) Section 4-2312 provides the standards to be utilized when redeveloping a golf course to another use. Allowable uses are limited to dwelling units, residential accessory uses and community gardens. The proposed RPD proposes only residential dwelling units and accessory uses. A full range of single family, two-family, townhouse and multi-family dwellings are proposed, and development standards have been included for each dwelling unit type. The north parcel will be limited to single family detached and two-family attached dwelling unit types. The south parcel will provide for development of all types of residential dwelling units. Building heights are also limited to 35', consistent with the LDC.

The applicant is required to prepare a pre versus post development storm water runoff analysis. The applicant has prepared an extensive analysis which concludes that the redevelopment of the golf course as a residential planned development will have no detrimental effect on the surrounding properties. The on-site surface water management system will be permitted by the South Florida Water Management District and include a system of berms, swales and detention ponds that will control storm runoff before discharging to the existing drainage ditch with ultimate outfall to Spring Creek. The stormwater system will result in improvements to storm water conditions for surrounding properties. A minimum of 40% of the RPD will remain as open space.

Due to the irregular shape for portions of the property, it is not possible to meet the minimum buffer of 50' in width between any redevelopment and the surrounding neighborhood in all instances. The proposed buffers exceed typical buffer standards for a residential development. The LDC does provide for a reduced buffer where a 12' trail or pathway is provided within the property. The RPD master plan demonstrates the proposed buffer widths and the approximate location of the proposed 12' wide pathway.

The proposed RPD is consistent with LDC Section 4-299, the findings necessary to rezone property in the City of Bonita Springs. The proposed 500-unit RPD proposes to permit dwelling units and accessory recreational amenities. The Bonita Springs Comprehensive Plan contemplated residential development in this area and would allow a maximum of over 670 dwelling units. The project lies within two future land use categories, both, which permit development. There are no locational or performance standards required in either future land use category. The property

is already zoned RS-1 and RM-2. The proposed RPD is consistent with the City of Bonita Springs Comprehensive Plan.

Surrounding development consists primarily of single-family residential development and some multi-family residential development adjacent to the southernmost portion of the RPD. The RPD proposes dwelling units which are a compatible with the existing uses and represents a development pattern consistent with existing conditions in the neighborhood and throughout the City. The master concept plan generally identifies where residential units will be located, as well as potential locations for buffers and open space. As noted above, the applicant conducted an informational meeting with the neighborhood prior to the RPD application submittal, and the plan has incorporated several of their comments into this RPD application. For example, several residents requested that where possible, the applicant should utilize landscaped buffer areas and water management features as buffers to surrounding homes in lieu of solid walls.

The approval of the proposed RPD will not place an undue burden on existing transportation or other infrastructure. The RPD application is supported with a traffic analysis prepared by a licensed traffic engineer. The TIS concludes that the proposed number of units, which is a maximum density of under 4 dwelling units per acre, will have no adverse impact to the permissible level of service. This is consistent with Transportation Element Goal 1 and Policy 1.1.3. The applicant has created a plan that further reduces direct driveway access to the existing public roadway network, which was another request of the neighboring residents and City Public Works staff. The applicant has also volunteered to work with City staff during the Development Order review, to determine whether traffic calming measures at strategic locations along the public roadway network can be implemented which will address the resident concerns about traffic speeds.

Conservation and Coastal Management Element (CCME)

The defunct golf course site was cleared, filled and resculpted for the golf course. Goal 4 and Objective 4.1 seek to preserve environmentally critical areas within the City. There are scattered clusters of pine and oak trees on portions of the site. The RPD Master Plan incorporates these areas into buffers where possible. There are no environmentally critical areas located on the former golf course property. This property is not within the Coastal Management Area or Coastal High Hazard Area on the Future Land Use Map series. A listed species survey has been prepared and no endangered or threatened species were observed on the property. The proposed RPD is consistent with the Conservation and Coastal Management Element of the Bonita Springs Comprehensive Plan. There are some existing pine and oak trees on the property and the applicant has worked with staff and the neighborhood to identify some of these native trees to be saved, although the Land Development Code does not require their preservation. One very small and highly degraded wetland exists on the property and this area will be permitted to be impacted as part of the residential development. The ecological value of this 0.2-acre, degraded area is nominal, and the reviewing agencies are anticipated to concur that there is no environmental benefit to preserve this area.

The subject property is located east of Old 41 Road and is outside the City's Coastal Management Area and Coastal High Hazard Area.

Goal 7, Objective 7.1 and Policy 7.1.1 identify the goal, objective and policies the City will employ to manage the City's wetland and upland ecosystem to maintain and enhance habitat, water quality and natural surface water characteristics. Paragraph d. of Policy 7.1.1 discusses a land acquisition program to acquire lands critical to water quality, flood protection and passive recreation. The applicant has been working closely with the City's stormwater consultant to evaluate the opportunities to utilize portions of the property for a regional stormwater improvement project. The MCP identifies areas of the site which may be utilized for stormwater improvement which may then be acquired by the City of Bonita Springs. This evaluation is on-going.

Policy 7.2.4 of the CCCME encourages the protection of usable tracts of sensitive or high-quality plant communities. The subject property has been previously cleared and impacted with construction of an 18-hole golf course; therefore, there are no sensitive or high quality tracts of vegetation remaining on-site.

Policy 7.2.10 and Policy 7.2.12 require removal of invasive exotic plants. The subject property will have all invasive exotic plants removed as part of the redevelopment of the site, and the property will continue to remove and treat invasive exotic vegetation.

Policy 7.4.3 requires detailed inventories of endangered plant and animal species. The applicant has completed a species inventory and was noted in the assessment. Management plans will be addressed, as appropriate, at the time of development order approval.

Several heritage trees were observed on-site and their retention or removal will be coordinated with staff and the Tree Advisory Board once final water management designs are determined.

Objective 9.3 and Policy 9.3.1, 9.3.3 and 16.3.1 require use of Best Management Practices (BMP) to improve water quality. The subject property will require approval of its surface water management system by the South Florida Water Management District. The surface water management system will include BMPs to provide stormwater treatment prior to discharge from the site. The surface water management system will also be designed to provide an additional 50% water quality treatment as required by the South Florida Water Management District.

The site has urban services including water and sewer services available at the site. The applicant has been coordinating with Bonita Springs Utilities to ensure that services meet the current design standards of the utility provider. The applicant is also working with City Engineering staff to evaluate localized historic flooding that occurs in the vicinity of the project. The applicant has analyzed the storm water management system for the project to incorporate features to alleviate some of the localized flooding. A pre vs. post drainage analysis has been prepared as required in the LDC.

The staff and applicant will work to prepare any necessary and reasonable conditions for the RPD and master concept plan to ensure that the resulting development is compatible with surrounding development and that any local engineering and planning issues are appropriately addressed. The approved zoning ordinance will incorporate these conditions.

The project proposes deviations. Some of the deviations are necessary in order to appropriately address requests from the neighbors such as stormwater management, setbacks and installation of landscape buffers in order to minimize vehicular impacts to views from neighboring properties. The deviations as proposed have no negative impact to health, safety and welfare to the community. The applicant has proposed one deviation relating to the provision of a single point of access to the North Parcel, but this is proposed to address a major concern of the neighbors about impacts to the North Parcel. The deviation has been requested and the applicant and staff concur that a single access point may be the only feasible means for ingress/egress given the nature of surrounding development. A potential secondary access point is shown on Carnoustie Ct.

BONITA SPRINGS GOLF COURSE
LISTED SPECIES SURVEY
AND
ENVIRONMENTAL DATA

PREPARED BY:

PENINSULA ENGINEERING
2600 GOLDEN GATE PARKWAY
NAPLES, FL 34105

MARCH 2021
REVISED OCTOBER 2021

BRUCE LAYMAN, CE, PWS

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1. INTRODUCTION

Peninsula Engineering, Inc. entered into a contractual agreement with BSGC Land Holdings, LLC to provide environmental services associated with a +/- 113-acre parcel of land (Project) known as Bonita Springs Golf Course located in Section 23, Township 47 South, Range 25 East, Lee County, Florida. The site is a defunct golf course that is bounded on all sides by existing single and multi-family residential neighborhoods east of Old 41 Road, south of Strike Lane, north of Shangrila Road and west of Interstate 75 in Bonita Springs.

A protected species survey was conducted on the project site, to update the findings of a protected species survey conducted by others in 2016 under the project name Bonita Del Sol and is summarized herein to provide support documentation for local, state, and federal development review.

2. PROJECT METHODOLOGY

Peninsula Engineering conducted a survey of the Project site using a field methodology in general accordance with Florida Fish and Wildlife Conservation Commission (FWC) and Lee County standards. This survey was performed to document vegetation associations and to locate and document any listed plant or wildlife species that occur on the site during the survey period. The field survey for this project was conducted during September 2020 and the following information provides detailed project methodologies for the listed wildlife survey, the habitat/vegetation survey, and the listed plant species survey.

2.1. Listed Wildlife Survey

Prior to the listed species survey, color aerial imagery, soils maps, USGW Quad maps, and a prior listed species survey conducted on the property, were reviewed to identify potential habitats present on and adjacent to the site. Based on the habitat types identified and the results of the prior survey, a preliminary list of state and federal listed flora and fauna that could occur on the project site was generated. Various publications and databases were also reviewed to identify listed plant and wildlife species that are regionally present and that could occur and those habitat types, including Appendix H, List of Protected Species, of the Lee County Land Development Code and the ecologist's 25+ years of personal experience of conducting listed species surveys in Collier and Lee Counties. Table 4 illustrates the composite list of potential species. FWC's *Florida's Imperiled Species Management Plan* (FWC 2016) was used to determine the "listed" state and federal status designation of wildlife species. *Notes on Florida's Endangered and Threatened Plants* was used to determine the status of listed plants (Weaver and Anderson, 2010).

Peninsula Engineering conducted a survey of the project site using a field methodology that was in general accordance with FWC and Lee County standards. Since a vast majority of the site was defunct but maintained (mowed) golf course fairways and greens, the open areas were surveyed with assistance from an open-sided all-terrain vehicle (i.e., a single-person quad). Brushy or forested areas were surveyed on foot. The field survey consisted of one biologist performing parallel meandering vehicular and pedestrian transects spaced as appropriate for the type of habitat, visibility limits, and density of vegetation. The approximate locations of the transects performed during the listed species and habitat survey are indicated on Figure 1 titled *FLUCCS, Transect, and Listed Species Exhibit*.

Transects were conducted in the morning and afternoon hours in September totaling 12.5 hours of field time. Table 1 lists survey dates, times, weather conditions, biologist conducting survey, and field hours during the field survey. The field observer was equipped with a compass, aerials, wildlife and plant identification books, binoculars, and a field notebook. During listed species transects, the biologist periodically stopped, looked for wildlife, signs of wildlife, and listened for wildlife vocalizations. The approximate locations and abundance of observed listed species were mapped on aerials and recorded in a field notebook. Due to their abundance and relatively low level of protection, the location and count of the protected airplant were not recorded. Non-listed wildlife species were recorded daily.

Specific to the habitats present on the parcel, and in accordance with Appendix H of the Lee County LDC, the ecologist surveyed areas for the potential presence of the species listed in Tables 2 and 4 with particular attention paid to the gopher tortoise (*Gopherus polyphemus*), wood stork (*Mycteria americana*), tricolor heron (*Egretta tricolor*), little blue heron (*Egretta caerulea*), Big Cypress fox squirrel (*Sciurus niger avicennia*), and American alligator (*Alligator mississippiensis*). Though Appendix H suggests the potential presence of the Everglades mink (*Mustela vison*) per habitats present on site, small mammal trapping was not included in the survey protocol due to near zero potential for the species to occur in this northern urban environment. The snowy egret (*Egretta thula*), limpkin (*Aramus guarauna*), black bear (*Ursus americanus floridanus*), and gopher frog (*Lithobates capito*) have been delisted since the implementation of Appendix H, so they were not targeted during the survey.

The above survey methodology was generally consistent with those prescribed by the FWC in the document titled "*Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval*" (FWC 1988), and as described in the Modified Meandering Strip Census (Lee County Listed Species Survey Methodology) - except that no small mammal sampling or herpetofaunal surveys were conducted.

2.2. Plant Survey

Over the course of conducting the survey for listed wildlife species and field mapping vegetative communities, the biologist searched for plants listed by the Florida Department of Agriculture (FDA) and the U.S. Fish and Wildlife Service (FWS), and plants meeting City of Bonita Springs heritage tree species (live oak and slash pine) and size (20" $\leq$ DBH) criteria. FDA and FWS have categorized various plant species based upon their relative abundance in natural communities. Those categorizations include "Endangered", "Threatened" and "Commercially Exploited". None of the plants included in Appendix H, List of Protected Species, have reasonable potential to occur on site based upon developed nature of the site and the habitats present, so none listed in Appendix H were specifically targeted during the survey.

2.3. Habitat/Vegetation Survey

The habitat and vegetation survey included the preparation of a Florida Land Use, Cover and Forms Classification System (FLUCCS) map delineating the major plant communities, landforms, and land uses present on the project site. A FLUCCS Map for the project site is provided in Figures 1 and 2. The methods and class descriptions found in the FLUCCS manual (FDOT, 1999) were generally followed when delineating and assigning areas to an appropriate FLUCCS category

(class) or "codes". Plant communities were mapped using direct field observation and aerial photo interpretation. Current color aerial photos were plotted at 1" = 200' scale and were used in the field to map on-site plant communities.

3. SURVEY RESULTS Listed Wildlife Species Observed On Site

The following is a summary of the listed wildlife species observed on site and the ramifications of the presence of each species as can be anticipated at this time. The listed wildlife species observed along with their state and federal listed status are provided in Table 2. Their location(s) are shown in Figure 1. Non-listed wildlife species were also noted during the surveys and a list of those species is provided in Table 3.

The two state or federal listed wildlife species observed on site during the survey include the little blue heron (*Egretta caerulea) and tri-colored heron (Egretta tricolor), and the o*nly listed plant observed was *Tillandsia. fasciculata*.

3.2. Listed Wildlife Species Not Observed On Site But with Moderate Probability of Occurring

The following is a discussion of listed wildlife species that were not confirmed during the survey as occurring on the Project site but which are considered to have probability of occurring due to the presence of suitable habitat or confirmed sightings in the region. These species are those identified as having a "possible" estimated occurrence in Table 4.

Wading Birds

Various listed wading birds could utilize the bank along the pond edges to forage year-round. They are opportunistic feeders and travel to find areas where conditions are suitable and food is abundant. The remaining "probable" species is the wood stork (Mycteria *americana*) due to the year-round availability of forage fish in the ponds and water features.

The ability for the named listed wading birds to forage on site is anticipated to remain unchanged with retention of water management lakes in the proposed land plan.

American Alligator

The American alligator (*Alligator mississippiensis*) is known to occur throughout south Florida and is an inhabitant of habitats such as cypress domes, deep marshes, open water bodies and large ditches. This species has been downgraded to Threatened and remains listed by the FWS because of its "similarity of appearance" to the endangered crocodile. Alligators could potentially use the on-site ponds to forage, breed, or otherwise use the on-site water features. Based on communication with current golf course land managers, alligators have been seen in the ponds in the past, but they appear to move around. They were more abundant while the golf course was active, over 14 years ago, but sightings have been spotty in recent years. The ability for alligators to use the on-site water features is anticipated to remain unchanged with retention of water management lakes in the proposed land plan.

Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) is listed as a Species of Threatened (T) by the FWC. No signs of the tortoise were found on site, nor were signs of tortoises observed during the prior 2016 listed species survey, and it has minimal likelihood to wander onto the parcel from adjacent land since all of the adjacent land is developed. However, experience has shown that tortoises often get illegally translocated from site to site and appear where they have never been seen before, so the tortoise remained on the list of potential species.

Big Cypress fox squirrel

The Big Cypress fox squirrel (*Sciurus niger avicenna*) is listed as Threatened by the FWC. No signs of the fox squirrel were found on site; however, fox squirrels are known to have an affinity for the large partially forested open spaces that golf courses provide. Based on communication with current golf course land managers, fox squirrels were once abundant over 14 years ago when the golf course was active. Since then, their numbers have waned to the point where they have not been observed on site since the passing of Hurricane Irma in 2017. So, although none were observed, there remains the possibility of their occurrence in the region.

3.3. Other Listed Wildlife Species Warranting Consideration

The following is a discussion of listed wildlife species that have not been confirmed as occurring on the project site, but which are considered to be potential visitors to the site due to the presence of suitable habitat (Appendix H, or personal experience). These species are those identified as having an "unlikely" estimated occurrence in Table 4.

Everglades Snail Kite

The Everglades snail kite (*Rosthamus sociabilis*) is restricted to watersheds in the central and southern part of the state. Because of a highly specific diet composed almost entirely of apple snails (*Pomacea paludosa*), snail kite habitat consists of freshwater marshes and the shallow vegetated edges of natural and manmade lakes where apple snails can be found.

The snail kite is included in the discussion due to Appendix H and the presence of the golf course ponds and the cattail marsh. Given the urbanized infill and northern project location, and the general lack of apple snails (no signs of apple snails observed), there is near zero potential for the snail kite to use the site.

Everglades Mink

The range of the Everglades mink (*Mustela vison*) is currently limited to the shallow freshwater marshes and swamps of Everglades National Park, Big Cypress National Preserve, and Fakahatchee Strand. Historically the Everglades mink ranged into the northern Everglades and Lake Okeechobee region, but no sightings have been reported in the northern range in recent years. The mink is included in this discussion due to Appendix H and the presence of the golf course lakes and cattail marsh. Given the urbanized infill and northern project location, there is near zero potential for the Everglades mink to use the site.

Roseate Spoonbill

The roseate spoonbill (*Platalea ajaja)* forages in the shallows of fresh, brackish, and marine waters that are typically less than 5 inches deep with good sources of aquatic invertebrates. These habitats include bays, mangroves, forested swamps, and roadside ditches. Given the presence of the golf course ponds and cattail marsh, there is potential for this species to opportunistically forage on site, though because of the site's inland position, freshwater nature, and the marsh's small size and cattail-dominated composition, the potential is low.

Florida Panther

The Florida panther (*Felis concolor coryi*) is listed as Endangered by both the FWS and the FWC. No Florida panther individuals or signs of panthers utilizing the site were observed during the project surveys and the Project site is located outside of the FWS panther consultation area. Additionally, the site is surrounded by urbanized Bonita Springs and is separate from the wild lands of Corkscrew Regional Ecosystem Watershed by I-75. Therefore, there is near zero potential for the panther to use, or travel through, the site.

Eastern Indigo Snake

The Eastern indigo snake (*Drymarchon corais couperi*) is listed by both the U.S. Fish and Wildlife Service (FWS) and the FWC as Threatened, primarily due to historic commercial harvest for the pet industry. Generally, this species lives and hunts in a wide variety of habitats and their territories can cover large areas. No indigo snakes were observed on site; the site lacks burrows and habitat features that might otherwise support the species; a vast majority of the site is regularly mowed; and nearly all the adjacent land is developed. Therefore, there is near zero potential for this species to occur on site.

Florida bonneted bat

The Florida bonneted bat (*Eumops floridanus*) became federally listed as Endangered after Appendix H was implemented, so it is absent from that document. Little is known about the species; however, the presence of cavities or hollows within large and tall relatively uncluttered trees has been identified by FWS as a potentially important resource to support bonneted bat maternity roosts. The FWS has additionally asserted that projects that result in the loss of greater than 50 acres of foraging habitat may impair an individual bat's ability to feed or breed. A protocol for conducting an appropriate assessment of the Project site to sufficiently protect the species will be developed through Technical Assistance from the U.S. Fish and Wildlife Service.

American Bald Eagle

The American bald eagle (*Haliaeetus leucocephalus*) is not protected by the federal Endangered Species Act; however, it is protected by the Bald and Golden Eagle Protection Act. Based upon the FWC Eagle Nest Locator web site:
(https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx), the nearest known bald eagle nest (#LE080) is approximately 1.5 miles west of the Project site. Since the typical outermost nest protection zone extends 660' from the nest tree, the Project site is well outside that nest's protect

zones and the Project should have no effect on that nest.

Reddish Egret

The reddish egret (*Egretta rufescens*) is an uncommon dark heron with a rust-colored neck and head and a slate-colored body. It is listed as Threatened by FWC and is not listed by FWS. It typically forages and nests along the coast and it is, therefore, not likely to occur on site.

Florida Burrowing Owl

The Florida burrowing owl (*Athene cunicularia floridana*) is listed as Threatened by FWC and is not listed by FWS. The owl prefers open grasslands with low stature grasses in which to burrow. Given the inactive status of the golf course and its regular mowing to maintain the fairways and greens, the burrowing owl could recruit to the area and become established. Since owls are readily visible when present, and since none were observed during the current or prior listed species surveys, there is near zero chance that this species is present on site.

Southeastern American Kestrel

The Southeastern American Kestrel (*Falco sparverius paulus*) is a non-migratory subspecies of kestrel found in open pine savannahs, sandhills, prairies, and pastures in Florida and the southeastern United States. It is listed as threatened in Florida due to a decline in nesting and foraging habitat. They nest in large dead trees with enlarged cavities and they forage over open pasture lands and wood lots. They need both to persist. Given the infill nature of the site and its paucity of potential nesting locations, there is little potential for this species to use the property.

Florida Sandhill Crane

The Florida subspecies of sandhill crane (*Grus canadensis pratensis*) is listed as Threatened by FWC and it is not listed in Florida by FWS. This subspecies in non-migratory and nests in freshwater marshes. In October through March, a northern subspecies of crane that cannot be visually differentiated from the non-migratory Florida subspecies, migrates to South Florida. So, only birds observed during April through September can be positively identified as the listed Florida subspecies. The on-site monoculture cattail marsh is not optimal nesting habitat, nor are the pond banks. Due to the limited nesting potential on site, there is near zero potential to adversely affect the listed subspecies of the sandhill crane.

Red-cockaded Woodpecker

The red-cockaded woodpecker (*Picoides borealis*) is uncommon in Southwest Florida. It is listed as Endangered by FWS. This species requires old-growth pine forests where nest cavities are excavated in living trees infected with red heart disease which generally does not occur until the tree is at least 70 years of age. The Project falls within the RCW consultation area; however, only approximately 10 acres of the project contains forested areas with slash pine in the canopy. Of the seven separate pockets of forest containing pine, none contain living cavity trees, none exceed 2 acres in size, and none of the pines have the outward appearance of being infected by red heart disease. Lacking the above-noted characteristics, and absence of observed cavity trees

in the 2016 listed species survey, the potential for RCWs to use the project site are near zero.

3.4. Heritage Trees and Listed Plant Species Observed On Site

Heritage trees observed on site include 5 live oaks and 15 slash pines in the northeastern half of the project and 7 live oaks and 28 slash pines in the southwestern half of the project. Their locations are shown in Figure 5. Given the age of the golf course and that several of the heritage trees are located on elevated golf course contours, it is indeterminant whether the observed trees pre-dated construction of the course or whether they were planted as golf course landscaping. Due to the flowing linear geometry of the golf course and its conflict with residential community design, including incorporation of water management design to facilitate abatement of regional stormwater drainage issues, several of the heritage trees are not able to be preserved in place and a deviation to the heritage tree protection ordinance (detailed under separate cover) will be sought to accommodate the proposed project.

No federally listed plant species were observed on site and based upon habitats present none are anticipated to occur. A single state-listed airplant was observed in low abundance. It is a relatively common species and protection measures are limited to requiring a permit to be issued if the plant is proposed to be commercially sold. Other listed plants, also airplant species, are capable of occurring on site based on the presence of suitable habitat (i.e., slash pine and cypress trees). A list of those species is provided in Table 5.

3.5. Habitat/Vegetation Survey

Due to the improved and maintained nature of the golf course, there are few natural plant communities within the Project site. Those that exist include pine flatwoods (FLUCCS 411) and Pine, Cypress, Cabbage Palm (FLUCCS 624) communities. From aerial imagery, prior state environmental permits, and ground-truthing, it appears that the property became a golf course in the early 1980's. Approximately 14 years ago, the golf course was closed for play, but the grounds continued to be maintained such that the land retains the look of a golf course, today. Due to the flowing linear geometry of the golf course design and its general incompatibility with traditional residential community design, including the inclusion of water management design to facilitate abatement of regional stormwater drainage issues, none of the existing natural plant communities are able to be preserved in place. The City of Bonita Springs recognized the often-conflicting open space and vegetation preservation standards associated with golf course redevelopment projects and codified them in LDC Division 43, Section 4-2312(d)(11). Per that code, the traditional requirement to preserve indigenous plant communities or trees, as described in LDC Section 3-417(b)(1), is superseded by Section 4-2312(d)(11) by providing 50% of required 40% open space (minimum 22.6 acres) as *green or landscape* areas. As such, the project design will incorporate green and/or landscaped areas in accordance with the Golf Course Redevelopment Regulations of Division 43.

The FLUCCS code for each community along with a brief description and acreage are provided in Table 6. A detailed description of each FLUCCS code is provided in Appendix A. Figures 1 and 2 provide maps showing the vegetative associations found on the project site.

3.6. Consistency with City of Bonita Springs CCME

The subject property is located east of Old 41 Road and is outside the City's Coastal Management Area and Coastal High Hazard Area.

Goal 7, Objective 7.1 and Policy 7.1.1 identify the goal, objective and policies the City will employ to manage the City's wetland and upland ecosystem to maintain and enhance habitat, water quality and natural surface water characteristics. Paragraph d. of Policy 7.1.1 discusses a land acquisition program to acquire lands critical to water quality, flood protection and passive recreation. The applicant has been working closely with the City's stormwater consultant to evaluate the opportunities to utilize portions of the property for a regional stormwater improvement project. The MCP identifies areas of the site which may be utilized for stormwater improvement which may then be acquired by the City of Bonita Springs. This evaluation is on-going.

Policy 7.2.4 of the CCCME encourages the protection of usable tracts of sensitive or high-quality plant communities. The subject property has been previously cleared and impacted with construction of an 18-hole golf course; therefore, there are no sensitive or high-quality tracts of vegetation remaining on-site.

Policy 7.2.10 and Policy 7.2.12 require removal of invasive exotic plants. The subject property will have all invasive exotic plants removed as part of the redevelopment of the site, and the property will continue to remove and treat invasive exotic vegetation.

Policy 7.4.3 requires detailed inventories of endangered plant and animal species. The applicant has completed a species inventory and was noted in the assessment. Management plans will be addressed, as appropriate, at the time of development order approval.

Several heritage trees were observed on site and their retention or removal will be coordinated with staff and the Tree Advisory Board once final water management designs are determined.

Objective 9.3 and Policy 9.3.1, 9.3.3 and 16.3.1 require use of Best Management Practices (BMP) to improve water quality. The subject property will require approval of its surface water management system by the South Florida Water Management District. The surface water management system will include BMPs to provide stormwater treatment prior to discharge from the site. The surface water management system will also be designed to provide an additional 50% water quality treatment as required by the South Florida Water Management District.

3.7. Division of Historic Resources Assessment of Cultural Resources

During previous Bonita Del Sol Environmental Resource Permitting under different property ownership, the Division of Historical Resources (DHR) provided an effect determination as to whether the proposed Bonita Del Sol residential project could potentially adversely affect historic properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of historical, architectural or archaeological value. DHRs determination was that the project was unlikely to affect historic properties and DHR requested that specific text be incorporated into special conditions of the project permit to protect inadvertent cultural resource discoveries made during construction. The letter, and its suggested special condition text, are attached in Figure 6.

Since the Archaeological Sensitivity Zone 2 was solely limited to the northeastern corner of the northern parcel, and since the DHR determination accounted for their review of the whole northern parcel, it was assumed that the DHR determination, and the suggested special condition content, sufficiently protect potential cultural resources within the Bonita Springs Golf Course project.

4. SUMMARY

4.1. Listed Plant & Wildlife Species

The listed airplant species occurring on site is relatively common in the region. A permit would only be required if sale of the species is considered. No permit would be required for the owner to develop the site. As such, lacking sale of the plant, the project is not anticipated to adversely affect the species.

The results of the listed species survey indicated that listed wading birds, including the little blue heron and the tricolored heron, use the pond edges for foraging. This suggests that the wood stork could do the same; however, the likelihood is less for the wood stork since the pond edges do not concentrate forage fishes in a manner similar to wetland systems as the water table recedes in the drier months. The project's effect on these species is anticipated to be minimal once the project is in place because it, too, will incorporate water management lakes in which these species can forage.

The Big Cypress fox squirrel once occurred on site, particularly over 14 years ago when the golf course was active - per personal communication with golf course maintenance staff. But, they have not been observed by staff (who regularly mow the property) since when Hurricane Irma passed over the region in 2017. Therefore, with none having been observed on site during the 2016 and the 2020 listed species surveys, and due to their apparent absence since 2017, it is anticipated that none currently occur on site and the proposed project will not adversely affect the species.

The American alligator, though not observed during either the 2016 or the 2020 listed species surveys, has the potential to opportunistically use the existing golf course ponds. Since the proposed development also incorporates ponds into its design, it is anticipated that alligators will continue to have the ability to use the site, and the project will not adversely affect the species.

4.2. Heritage Trees & Green/Landscaped Areas

The golf course contains 55 heritage trees. Due to the flowing linear geometry of the golf course, its conflict with traditional residential community design, and incorporation of water management design to facilitate abatement of regional stormwater drainage issues, 41 of the heritage trees are not able to be preserved in place and a deviation to the heritage tree protection ordinance (detailed under separate cover) will be sought to accommodate the proposed project. In accordance with golf course redevelopment code associated with LDC Division 43, a minimum of 22.6 acres of green and/or landscaped acres will be incorporated into the project design.

4.3. Archaeological Resources

During previous environmental permitting under different property ownership, DHR provided an effect determination as to whether the proposed residential project could potentially adversely affect cultural resources. Their determination was that the project was unlikely to affect historic properties and they requested that specific text be incorporated into special conditions of the project permit to protect inadvertent cultural resource discoveries made during construction. The current owner of Bonita Springs Golf Course is amenable to incorporation of the suggested text as a condition of the permit.

5. REFERENCES CITED

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a. Third Edition. Tallahassee, Florida.

Florida Fish and Wildlife Conservation Commission. 2016. Florida's Imperiled Species Management Plan 2016-2026. Tallahassee, Florida.

Florida Fish and Wildlife Conservation Commission. 1988. Wildlife Methodology Guidelines. Tallahassee, Florida.

U.S. Fish and Wildlife Service. 2019. Florida Bonneted Bat Consultation Guidance. South Florida Ecological Services Office. Vero Beach, Florida.

Weaver, R. E. and P. J. Anderson. 2010. Notes on Florida's Endangered and Threatened Plants. Contribution No. 38, 5th edition.

TABLES

Table 1: Listed Species and Vegetation Survey Details

Biologist	Date	Time of Day	Weather	Field Hours
Bruce Layman	9/21/20	10:30 a.m. - 4:30 p.m.	83°F, partly cloudy, 5 mph east wind	6.0
Bruce Layman	9/22/20	7:30 a.m. - 2:00 p.m.	73°F, clear, calm	6.5
Total Hours				12.5

Table 2: Listed Plant and Wildlife Species Observed

Common Name	Scientific Name	Site Habitat by FLUCCS	FWC Status	FWS Status	FDA Status
PLANTS					
Spreading airplant	*Tillandsia fasciculata*	182, 411, 624, 630	N/A	N/A	E
WILDLIFE					
Little blue heron	*Egretta caerulea*	500, 624, 630	T	N/L	N/A
Tricolored heron	*Egretta tricolor*	500, 624, 630	T	N/L	N/A

FDA = Florida Department of Agriculture and Consumer Services
FWC = Florida Fish and Wildlife Conservation Commission
FWS = United States Fish & Wildlife Service
T = Threatened
E = Endangered
N/L = Not listed.
N/A = Not Applicable

Table 3: Non-listed Wildlife Species Observed

Common Name	Scientific Name
BIRDS	
Blue jay	*Cyanocitta cristata*
Northern mockingbird	*Mimus polyglottos*
Mourning dove	*Zenaida macroura*
Great blue heron	*Ardea herodias*
Red-bellied woodpecker	*Melanerpes carolinus*
Gallinule	*Gallinula chloropus*
Osprey	*Pandion haliaetus*
Anhinga	*Anhinga anhinga*
Green heron	*Butorides striatus*
AMPHIBIANS & REPTILES	
Softshell turtle	*Pelodiscus sinensis*
MAMMALS	
Gray squirrel	*Sciurus carolinensis*
Marsh rabbit	*Sylvagus palustris*

Table 4: Estimated Probability of Occurrence of Non-Observed Listed Faunal Species

		Status	Estimated Occurrence*			
Common Name	Scientific Name	(FWC/FWS)	Probable	Possible	Unlikely	Habitat by FLUCCS
BIRDS						
Reddish egret	*Egretta rufescens*	T/NL			X	500, 630, 641
Bald eagle	*Haliaeetus leucocephalus*	T/T			X	182, 411
Wood stork	*Mycteria americana*	E/E		X		500, 630, 641
Everglades snail kite	*Rosthamus sociabilis*	E/E			X	500, 641
Roseate spoonbill	*Platalea ajaja*	T/NL			X	500, 630, 641
Florida burrowing owl	*Athene cunicularia floridana*	T/NL			X	182
Southeastern American kestrel	*Falco sparverius paulus*	T/NL			X	411
Florida sandhill crane	*Grus canadensis pratensis*	T/NL			X	641
Red-cockaded woodpecker	*Picoides borealis*	E/E			X	411
MAMMALS						
Everglades mink	*Mustela vison*	T/NL			X	500, 630, 641
Florida panther	*Felis concolor coryi*	E/E			X	411, 624, 630
Big Cypress fox squirrel	*Sciurus niger avicennia*	T/NL		X		182, 411, 624, 630
Florida bonneted bat	*Eumops floridanus*	E/E			X	All
REPTILES						
American alligator	*Alligator mississipiensis*	T/T(S/A)		X		500
Gopher tortoise	*Gopherus polyphemus*	T/NL		X		411
Eastern indigo snake	*Drymarchon corias couperi*	T/T			X	411
AMPHIBIANS						
None						

Table 5: Estimated Probability of Occurrence of Non-Observed Listed Floral Species

		Status	Estimated Occurrence*			
Common Name	Scientific Name	(FDA/FWS)	Probable	Possible	Unlikely	Habitat by FLUCCS
Wild pine (several)	*Tillandsia* species	T & E/NL		X		190, 411, 624, 630
Fakahatchee burmania	*Burmania flava*	E			X	411
Satinleaf	*Chrysophyllum olivaeforme*	T			X	411
Beautiful pawpaw	*Deeringothamnus pulchellus*	E			X	411
Florida coontie	*Zamia floridana*	CE			X	411

FWC = Florida Fish and Wildlife Conservation Commission
FWS = United States Fish and Wildlife Service
FDA = Food and Drug Administration
SSC = Species of Special Concern
CE = Commercially Exploited
T = Threatened
E = Endangered
T(S/A) = Threatened by Similarity of Appearance
NL = Not listed

* Probable Occurrence = >50% estimated chance of occurrence on site.
Possible Occurrence = <50% estimated chance of occurrence on site.
Unlikely Occurrence = <5% estimated chance of occurrence on site.

Table 6: Existing Vegetative Associations and Land Uses

FLUCCS CODE	FLUCCS DESCRIPTION	TOTAL ACRES
120	Residential, Medium Density (2 to 5 units per acre)	0.51
130	Residential, High Density (greater than 5 units per acre)	0.43
180	Recreational – Club House	1.84
182	Golf Course	87.20
411	Pine Flatwoods, Palmetto Understory	6.82
500	Lakes	13.37
624	Pine-Cypress-Cabbage Palm	1.96
630	Wetland Forest Mixed	0.21
6412	Freshwater Marsh, Cattails	0.68
814	Roads and Highways	0.07
	TOTAL	113.09

APPENDIX A
Existing Vegetative Association & Land Use Descriptions

Existing Vegetative Association & Land Use Detailed Descriptions

Residential, Medium Density (2 to 5 Units per Acre) – These are medium density single-family residential parcels adjacent to the golf course where the rear yards merge with golf course landscape.

Residential, High Density (Greater than 5 Units per Acre) – These are high density single-family residential parcels adjacent to the golf course where the rear yards merge with golf course landscape.

Recreational – Club House (FLUCCS 180) – This represents the abandoned club house associated with the golf course, described as FLUCCS 182 below.

Golf Course (FLUCCS 182) – This represents a defunct golf course including fairways, greens, cart paths, and unforested areas adjacent to former areas of play. The course has been unused for 14 years; however, it has been maintained (mowed) regularly during that period. The canopy is lacking in the former fairways, greens and sand hazards. But the former roughs and lateral fairway fringes may contain sparse pockets of trees, such as slash pine (*Pinus elliotti*) and cypress (*Taxodium distichum*), where the total absolute cover is less than 10%. The midstory is generally lacking except where some areas of slash pine have small pockets of saw palmetto (*Serenoa repens*) beneath them. Groundcover includes Mexican clover (*Richardia brasiliensis*), Bermuda grass (*Cynodon dactylon*), bahiagrass (*Paspalum notatum*) and various ruderal grasses and forbs.

Pine Flatwoods (FLUCCS 411) – This community represents a slash pine and cabbage palm canopy over a saw palmetto understory. Herbaceous groundcover species are generally sparse. Catbriar (*Smilax* spp.) and Virginia creeper (*Parthenocissus quinquefolia*) are locally abundant on tree trunks.

Lakes (FLUCCS 500) – This is a series of former golf course water management lakes and water features. They are typically fringed with spike rush (*Eleocharis* spp.), predominantly, with minor coverage of cattail (*Typha* spp.) and willow (*Salix caroliniana*).

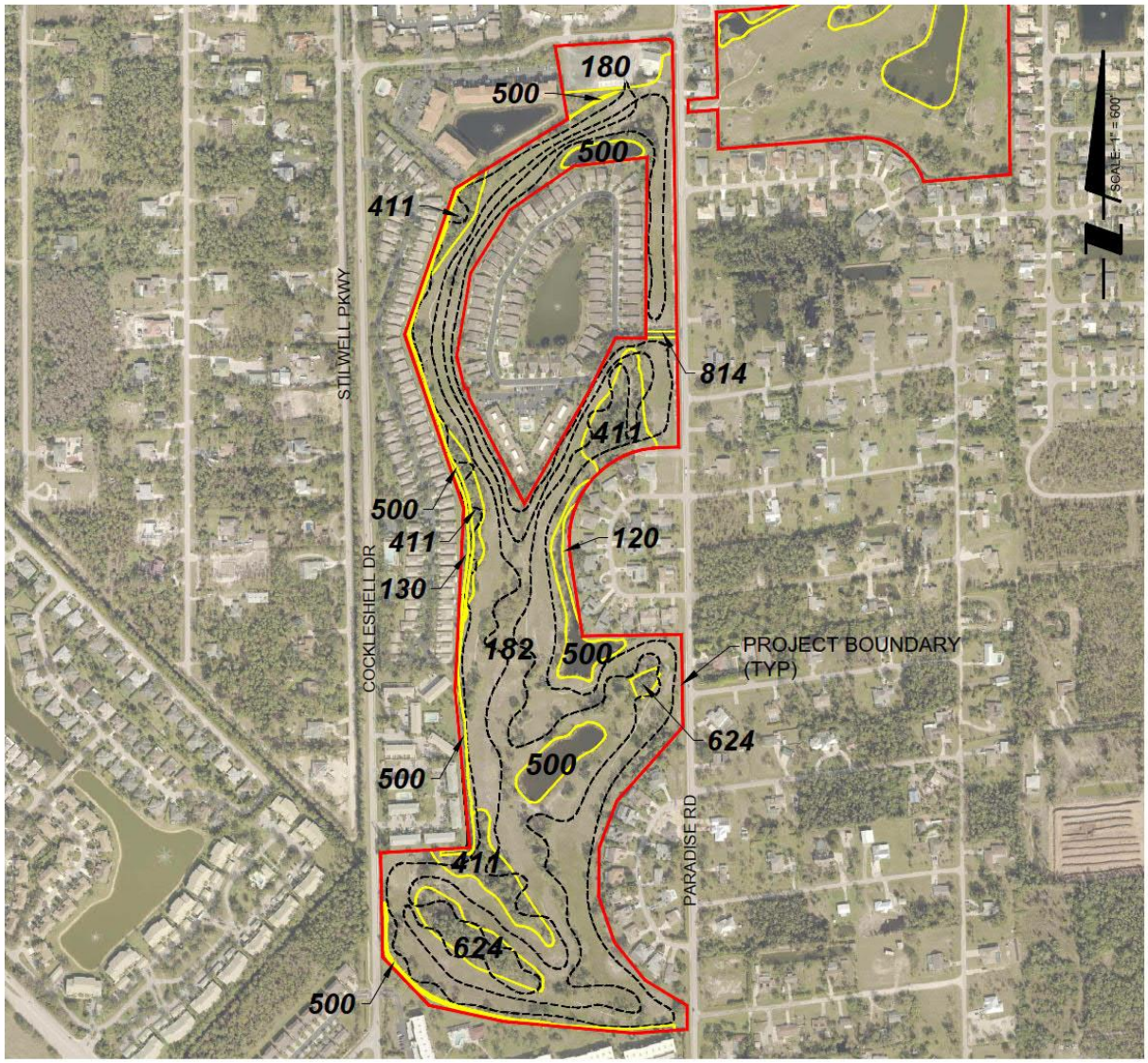
Cypress-Pine-Cabbage Palm (FLUCCS 624) - This community represents a bald cypress (*Taxodium distichum*), slash pine, cabbage palm canopy over a midstory of varying degrees of exotic vegetation, predominantly carrotwood, Brazilian pepper, and earleaf acacia. The groundcover can be locally absent or include bahiagrass, Spanish needles (*Bidens alba*), and/or other ruderal species.

Wetland Forested Mixed (FLUCCS 630) - This maintained community includes a bald cypress, slash pine, and laurel oak (*Quercus laurifolia*) canopy. The midstory is absent and the groundcover includes spike rush (*Eleocharis* spp.), dayflower (*Commelina erecta*), Bermuda grass, frog fruit (*Phyla nodiflora*), and various ruderal grasses and forbs that are regularly maintained via mowing.

Freshwater Marsh, Cattail (FLUCCS 6412) – This is a depressional area dominated by cattails that is connected to an adjacent water management lake.

Roads and Highways (FLUCCS 814) – This is the paved entrance to a residential community surrounded by the golf course.

FIGURE 1
FLUCCS and Listed Species Transect Exhibit



0 150' 300' 600' 1200' 1800'

LEGEND	
	PARCEL BOUNDARY
	MEANDERING PEDESTRIAN TRANSECT (APPROX.)
	FLUCCS LIMITS

FLUCCS CODE	DESCRIPTION	AREA (AC)
120	RESIDENTIAL, MEDIUM DENSITY (2 TO 5 UNITS PER AC)	0.26
130	RESIDENTIAL, HIGH DENSITY	0.43
180	RECREATIONAL - CLUBHOUSE	1.84
182	GOLF COURSE	43.27
411	PINE FLATWOODS - PALMETTO UNDERSTORY	4.80
500	WATER	4.33
624	CYPRESS - PINE - CABBAGE PALM	1.96
814	ROADS AND HIGHWAYS	0.07
		56.96

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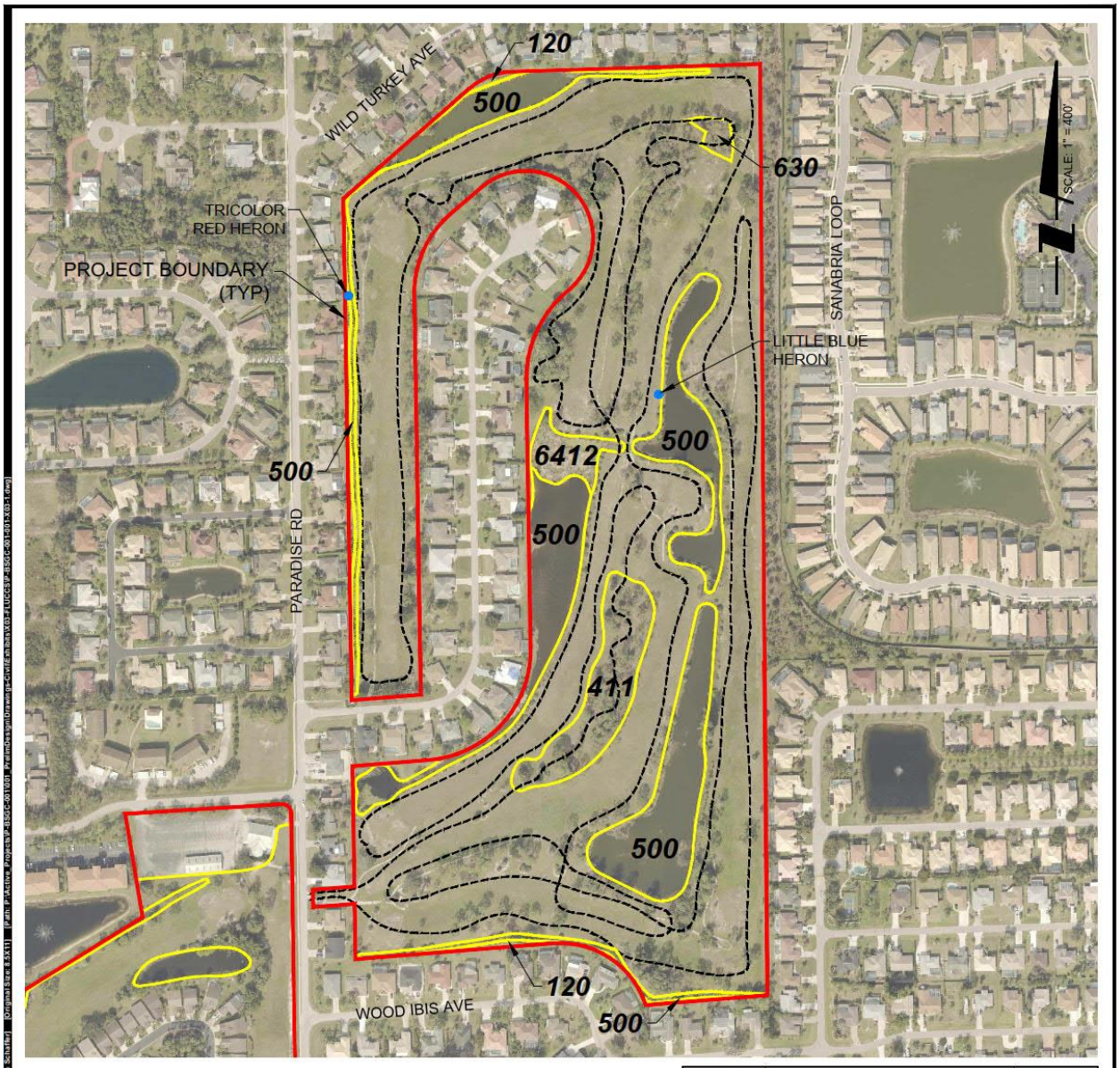
Email: info@pen-eng.com Website: www.pen-eng.com
Florida Certificate of Authorization #28275

PROJECT: BONITA SPRINGS GOLF COURSE

TITLE: FLUCCS, TRANSECT, AND LISTED SPECIES EXHIBIT - (SOUTH PARCEL)

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23	TWP: 47S RGE: 25E
Designed by:	BRUCE LAYMAN
Drawn by:	ANTON SCHAFFER
Date:	SEPTEMBER 2020
Drawing Scale:	1" = 600'
Project Number:	P-BSGC-001-001
File Number:	P-BSGC-001-001-X03-2
	C-X03-2
Sheet Number:	02 of 02



0 100' 200' 400' 800' 1200'

LEGEND	
	PARCEL BOUNDARY
	MEANDERING PEDESTRIAN TRANSECT (APPROX.)
	FLUCCS LIMITS

FLUCCS CODE	DESCRIPTION	AREA (AC)
120	RESIDENTIAL, MEDIUM DENSITY (2 TO 5 UNITS PER ACRE)	0.25
182	GOLF COURSE	43.93
411	PINE FLATWOODS - PALMETTO UNDERSTORY	2.02
500	WATER	9.04
630	WETLAND FOREST MIXED	0.21
6412	CATTAIL	0.68
		56.13

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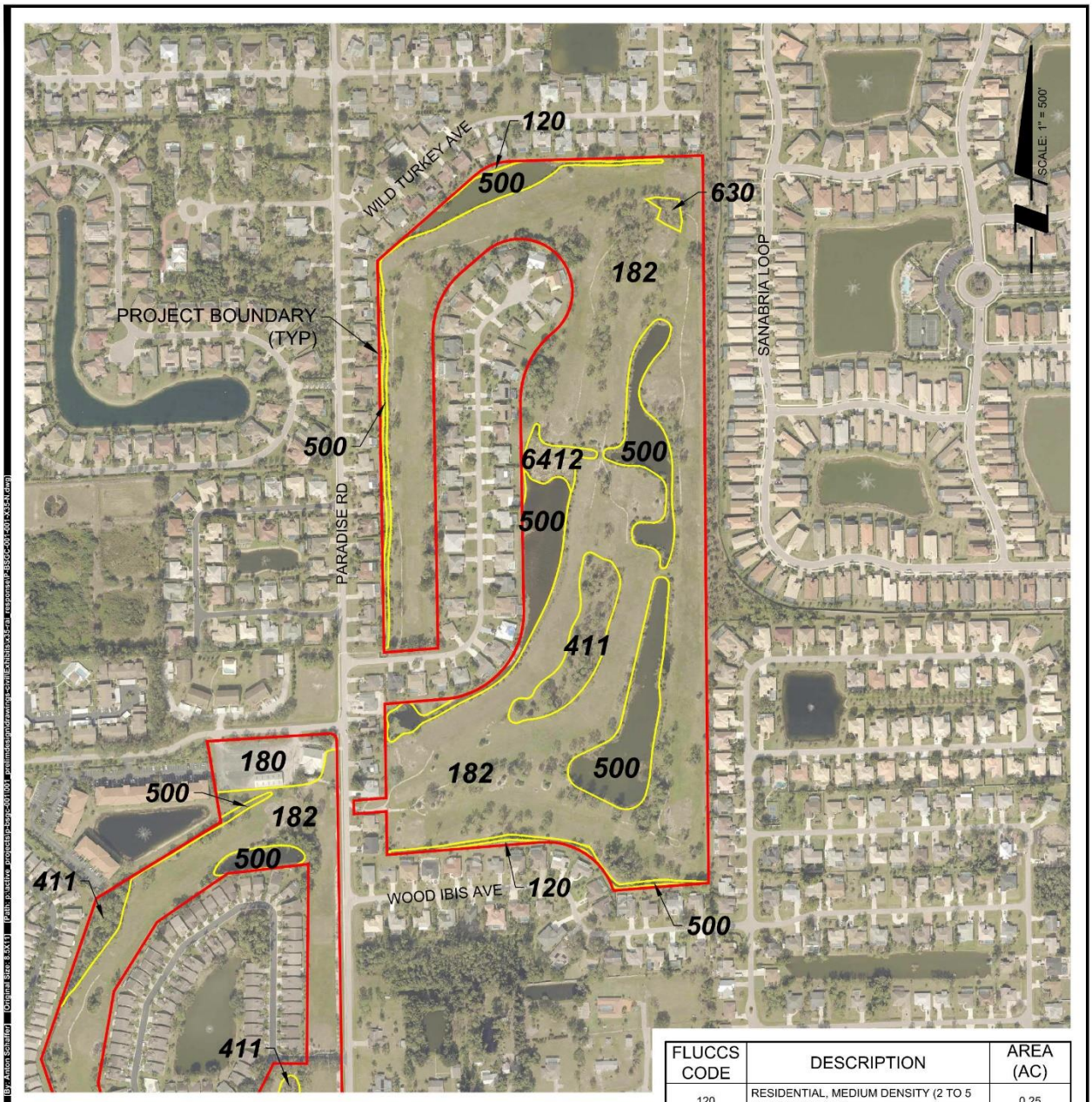
Drawn by:	ANTON SCHAFFER
Date:	SEPTEMBER 2020
Drawing Scale:	1" = 400'
Project Number:	P-BSGC-001-001
File Number:	P-BSGC-001-001-X03-1
Sheet Number:	C-X03-1 01 of 02

FIGURE 2
FLUCCS Exhibit (2 sheets)



FLUCCS CODE	DESCRIPTION	AREA (AC)
120	RESIDENTIAL, MEDIUM DENSITY (2 TO 5 UNITS PER ACRE)	0.25
182	GOLF COURSE	43.93
411	PINE FLATWOODS - PALMETTO UNDERSTORY	2.02
500	WATER	9.04
630	WETLAND FOREST MIXED	0.21
6412	CATTAIL	0.68
		56.13

LEGEND	
	PARCEL BOUNDARY
	FLUCCS LIMITS

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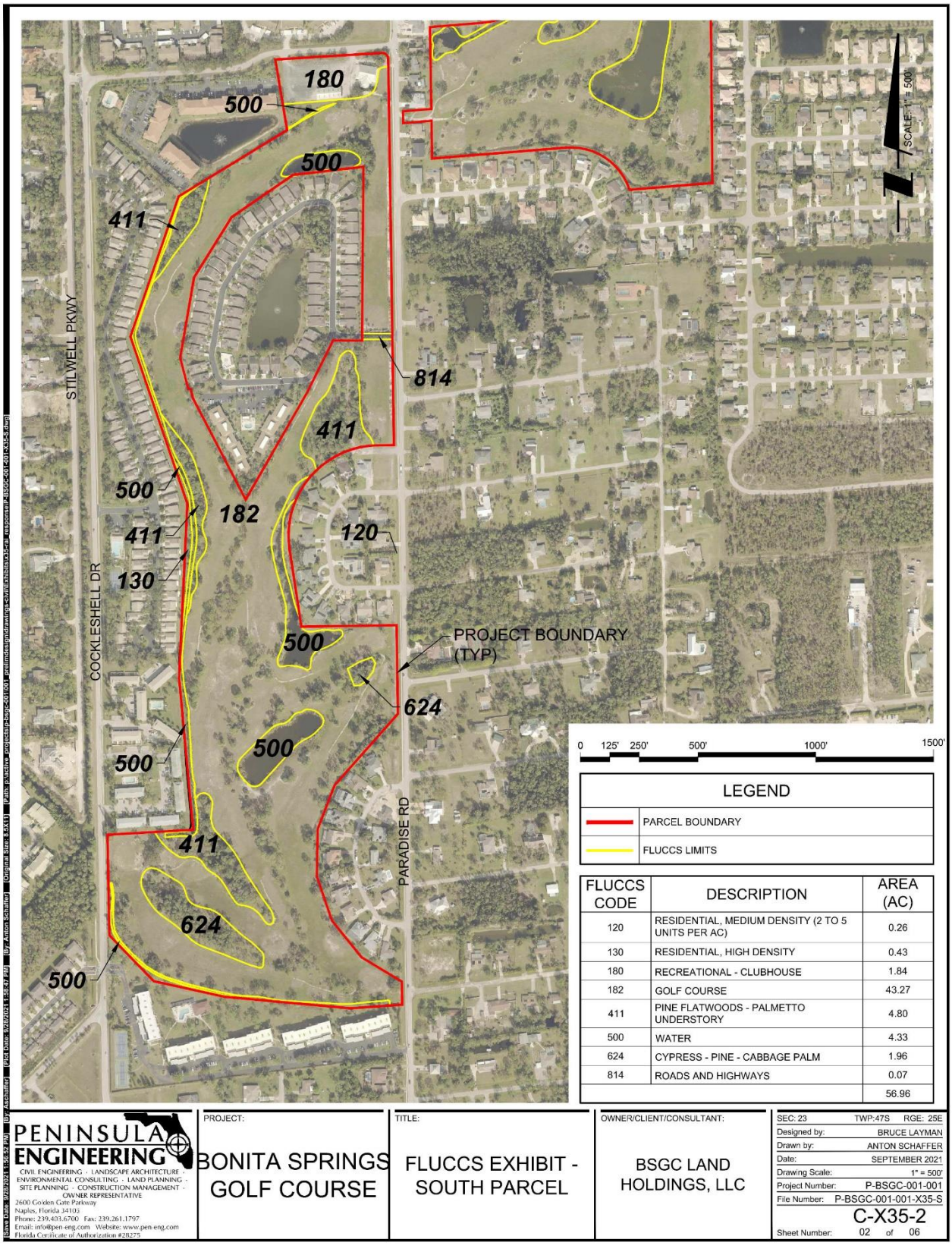
TITLE: FLUCCS EXHIBIT - NORTH PARCEL

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23	TWP:47S RGE: 25E
Designed by:	BRUCE LAYMAN
Drawn by:	ANTON SCHAFFER
Date:	SEPTEMBER 2021
Drawing Scale:	1" = 500'
Project Number:	P-BSGC-001-001
File Number:	P-BSGC-001-001-X35-N
	C-X35-1
Sheet Number:	01 of 06



FLUCCS CODE	DESCRIPTION	AREA (AC)
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130	RESIDENTIAL, HIGH DENSITY	0.43
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411	PINE FLATWOODS - PALMETTO UNDERSTORY	4.80
500	WATER	4.33
624	CYPRESS - PINE - CABBAGE PALM	1.96
814	ROADS AND HIGHWAYS	0.07
		56.96

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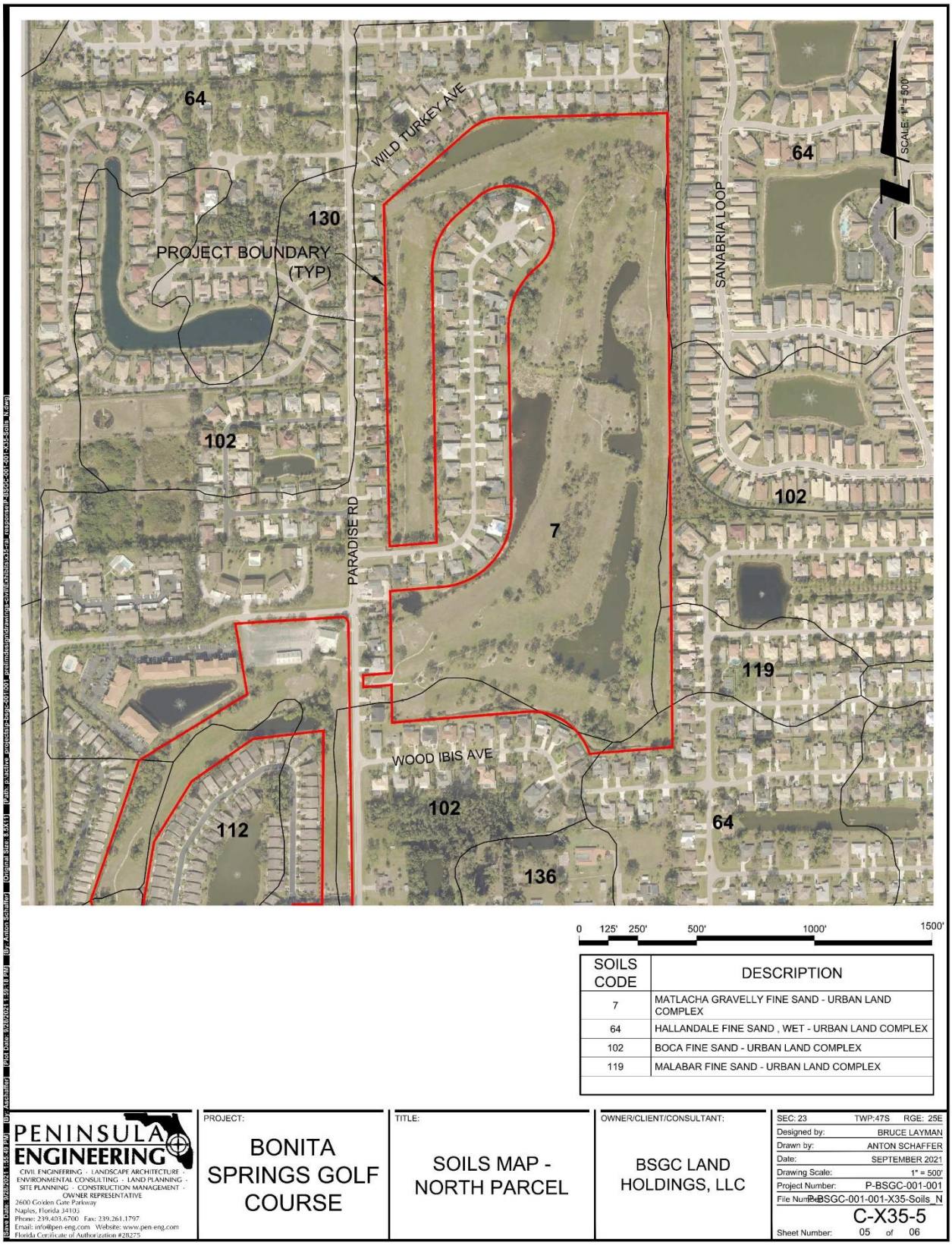
PROJECT: BONITA SPRINGS GOLF COURSE

TITLE: FLUCCS EXHIBIT - SOUTH PARCEL

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23 TWP: 47S RGE: 25E
Designed by: BRUCE LAYMAN
Drawn by: ANTON SCHAFFER
Date: SEPTEMBER 2021
Drawing Scale: 1" = 500'
Project Number: P-BSGC-001-001
File Number: P-BSGC-001-001-X35-S
C-X35-2
Sheet Number: 02 of 06

FIGURE 3
Soils Map (2 sheets)



SOILS CODE	DESCRIPTION
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64	HALLANDALE FINE SAND , WET - URBAN LAND COMPLEX
102	BOCA FINE SAND - URBAN LAND COMPLEX
119	MALABAR FINE SAND - URBAN LAND COMPLEX

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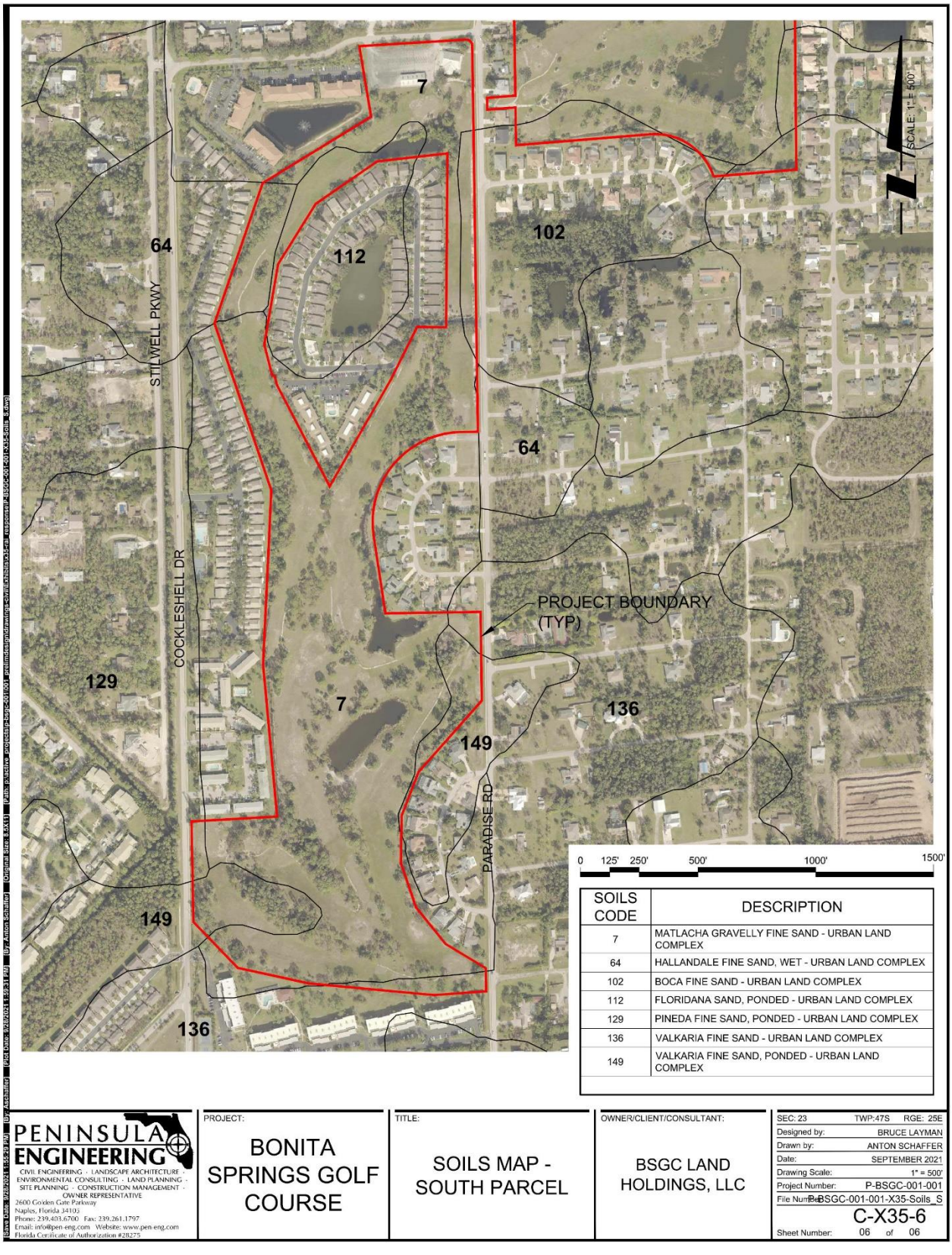
PROJECT: BONITA SPRINGS GOLF COURSE

TITLE: SOILS MAP - NORTH PARCEL

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23 TWP: 47S RGE: 25E
Designed by: BRUCE LAYMAN
Drawn by: ANTON SCHAFFER
Date: SEPTEMBER 2021
Drawing Scale: 1" = 500'
Project Number: P-BSGC-001-001
File Number: P-BSGC-001-001-X35-Soils_N
C-X35-5
Sheet Number: 05 of 06



SOILS CODE	DESCRIPTION
7	MATLACHA GRAVELLY FINE SAND - URBAN LAND COMPLEX
64	HALLANDALE FINE SAND, WET - URBAN LAND COMPLEX
102	BOCA FINE SAND - URBAN LAND COMPLEX
112	FLORIDANA SAND, PONDED - URBAN LAND COMPLEX
129	PINEDA FINE SAND, PONDED - URBAN LAND COMPLEX
136	VALKARIA FINE SAND - URBAN LAND COMPLEX
149	VALKARIA FINE SAND, PONDED - URBAN LAND COMPLEX

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TITLE: SOILS MAP - SOUTH PARCEL

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23 TWP: 47S RGE: 25E
Designed by: BRUCE LAYMAN
Drawn by: ANTON SCHAFFER
Date: SEPTEMBER 2021
Drawing Scale: 1" = 500'
Project Number: P-BSGC-001-001
File Number: P-BSGC-001-001-X35-Soils_S
C-X35-6
Sheet Number: 06 of 06

FIGURE 4
USGS Quad (Topo) Map (2 sheets)

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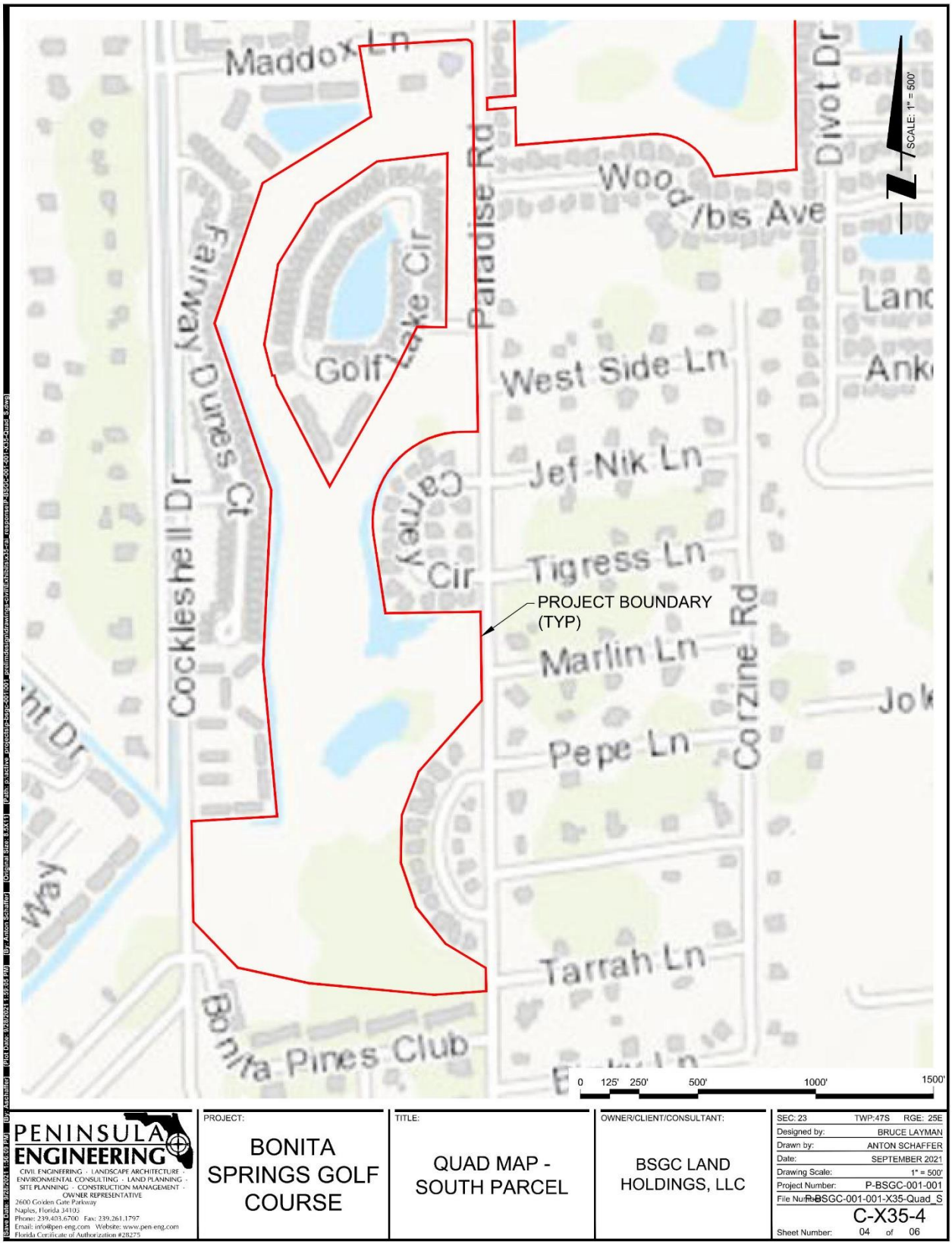
PROJECT: BONITA SPRINGS GOLF COURSE

TITLE: QUAD MAP - NORTH PARCEL

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23 TWP:47S RGE: 25E
Designed by: BRUCE LAYMAN
Drawn by: ANTON SCHAFFER
Date: SEPTEMBER 2021
Drawing Scale: 1" = 500'
Project Number: P-BSGC-001-001
File Number: P-BSGC-001-001-X35-Quad_N
C-X35-3
Sheet Number: 03 of 06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Paradise Rd
Divot Dr
Woodbis Ave
SCALE: 1" = 500'
Golf Lake Cir
West Side Ln
Jef Nik Ln
Cartney Cir
Tigress Ln
PROJECT BOUNDARY (TYP)
Marlin Ln
Corzine Rd
Pepe Ln
Tarrah Ln
Cockleshell Dr
Sand Dunes Ct
Bonita Pines Club
0 125' 250' 500' 1000' 1500'
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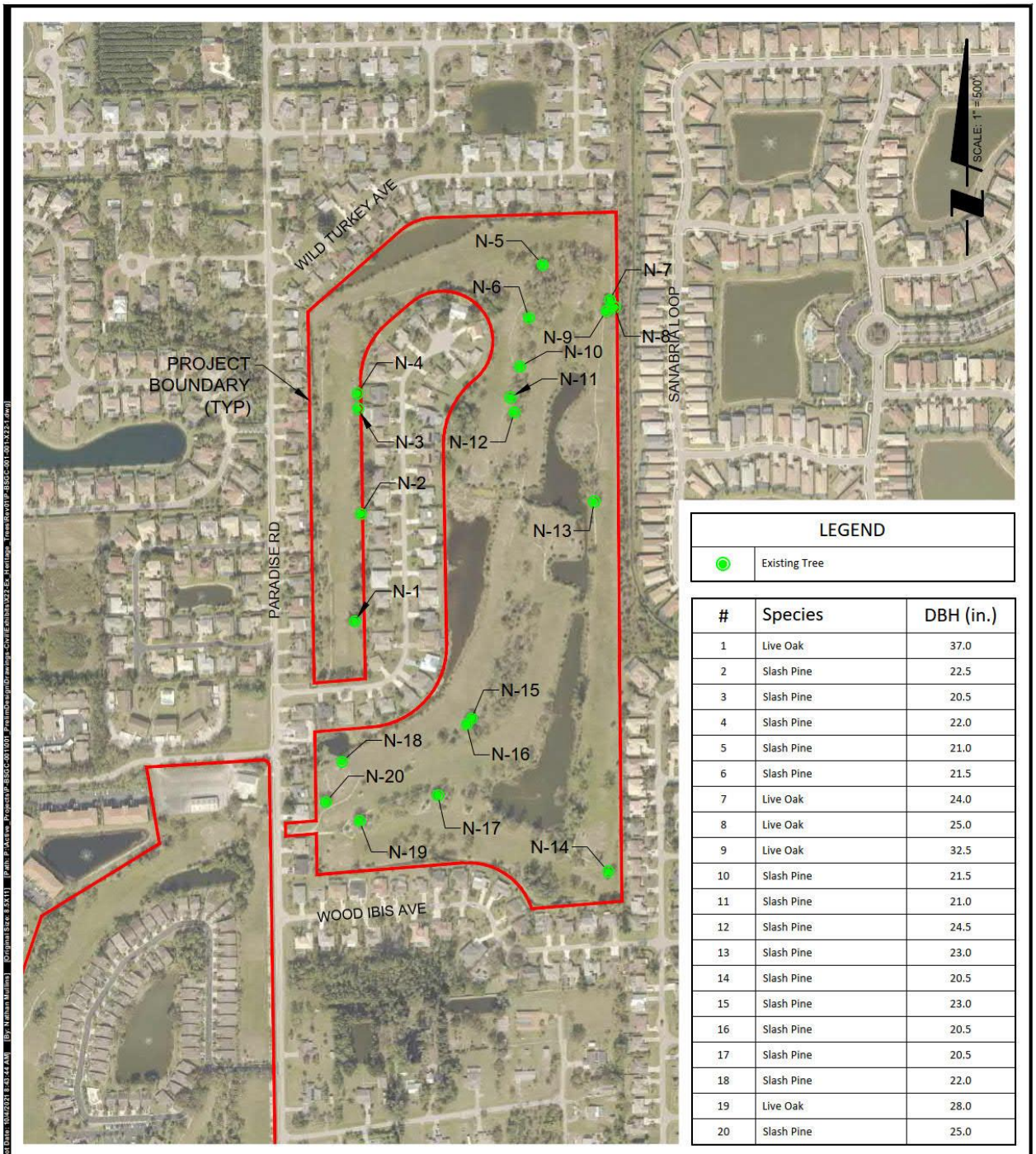
PROJECT:
BONITA SPRINGS GOLF COURSE
TITLE:
QUAD MAP - SOUTH PARCEL
OWNER/CLIENT/CONSULTANT:
BSGC LAND HOLDINGS, LLC
SEC: 23 TWP:47S RGE: 25E
Designed by: BRUCE LAYMAN
Drawn by: ANTON SCHAFFER
Date: SEPTEMBER 2021
Drawing Scale: 1" = 500'
Project Number: P-BSGC-001-001
File Number: P-BSGC-001-001-X35-Quad_S
C-X35-4
Sheet Number: 04 of 06

FIGURE 5
Existing Heritage Tree Map (2 sheets)



LEGEND	
◉	Existing Tree

#	Species	DBH (in.)
1	Live Oak	37.0
2	Slash Pine	22.5
3	Slash Pine	20.5
4	Slash Pine	22.0
5	Slash Pine	21.0
6	Slash Pine	21.5
7	Live Oak	24.0
8	Live Oak	25.0
9	Live Oak	32.5
10	Slash Pine	21.5
11	Slash Pine	21.0
12	Slash Pine	24.5
13	Slash Pine	23.0
14	Slash Pine	20.5
15	Slash Pine	23.0
16	Slash Pine	20.5
17	Slash Pine	20.5
18	Slash Pine	22.0
19	Live Oak	28.0
20	Slash Pine	25.0

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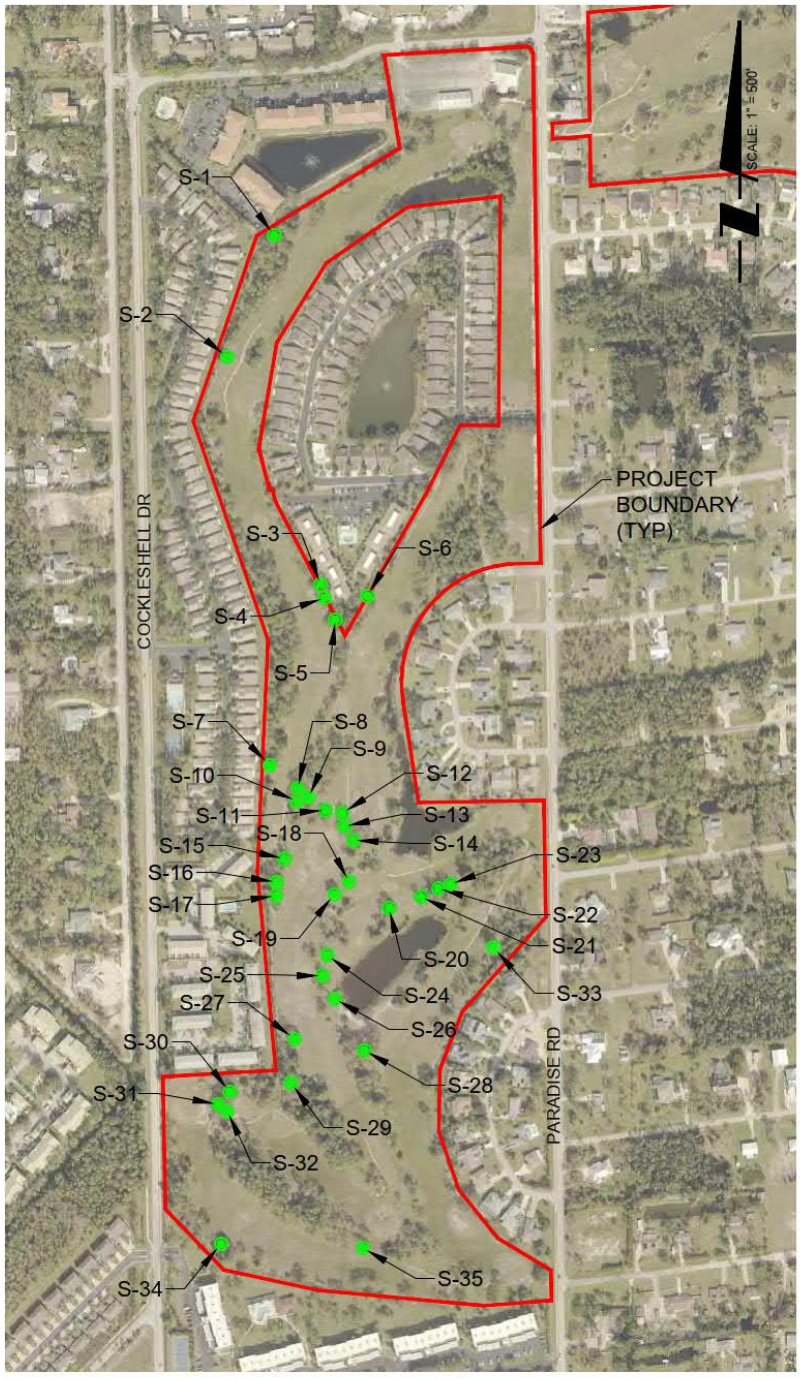
Phone: 239.403.6700 Fax: 239.261.1797
Email: info@pen-eng.com Website: www.pen-eng.com
Florida Certificate of Authorization #28275

PROJECT: BONITA SPRINGS GOLF COURSE

TITLE: EXISTING HERITAGE TREE MAP (NORTH PARCEL)

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23 TWP: 47S RGE: 25E
Designed by: BRUCE LAYMAN
Drawn by: NATHAN MULLINS
Date: OCTOBER 2021
Drawing Scale: 1" = 500'
Project Number: P-BSGC-001-001
File Number: P-BSGC-001-001-X22-1
C-X22-1
Sheet Number: 01 of 02



LEGEND	
●	Existing Tree

#	Species	DBH (in.)
1	Slash Pine	24.5
2	Slash Pine	23.5
3	Slash Pine	21.0
4	Slash Pine	24.5
5	Slash Pine	20.5
6	Slash Pine	21.0
7	Slash Pine	24.0
8	Slash Pine	22.5
9	Slash Pine	22.0
10	Slash Pine	21.5
11	Slash Pine	20.5
12	Live Oak	24.5
13	Live Oak	30.0
14	Live Oak	22.0
15	Slash Pine	21.5
16	Slash Pine	23.0
17	Slash Pine	23.0
18	Slash Pine	21.0
19	Slash Pine	22.5
20	Slash Pine	20.5
21	Slash Pine	28.0
22	Slash Pine	21.5
23	Slash Pine	20.5
24	Slash Pine	21.0
25	Slash Pine	20.5
26	Slash Pine	21.0
27	Slash Pine	23.0
28	Slash Pine	22.0
29	Slash Pine	22.0
30	Live Oak	27.0
31	Live Oak	24.0
32	Live Oak	30.0
33	Slash Pine	24.0
34	Live Oak	33.0
35	Slash Pine	25.5

PENINSULA ENGINEERING
CIVIL ENGINEERING · LANDSCAPE ARCHITECTURE · ENVIRONMENTAL CONSULTING · LAND PLANNING · SITE PLANNING · CONSTRUCTION MANAGEMENT · OWNER REPRESENTATIVE
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Florida Certificate of Authorization #28275

PROJECT: BONITA SPRINGS GOLF COURSE

TITLE: EXISTING HERITAGE TREE MAP (SOUTH PARCEL)

OWNER/CLIENT/CONSULTANT: BSGC LAND HOLDINGS, LLC

SEC: 23	TWP:47S RGE: 25E
Designed by:	BRUCE LAYMAN
Drawn by:	ANTON SCHAFFER
Date:	OCTOBER 2021
Drawing Scale:	1" = 500'
Project Number:	P-BSGC-001-001
File Number:	P-BSGC-001-001-X22-2
	C-X22-2
Sheet Number:	02 of 02

FIGURE 6
DHR Letter for Northern Parcel

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

South Florida Water Management District
3301 Gun Club Rd
West Palm Beach, Florida 33406-3007

October 19, 2016

Re: DHR File No.: 2016-04239 / Received by DHR: September 21, 2016 / County: Lee
Application No.: 160921-5 / Applicant: New Parkland Group, LLC., Eldon Johnson
Project: Bonita Del Sol, Paradise Rd, Bonita Springs, FL

To Whom It May Concern:

Our office reviewed the referenced project in accordance with Chapters 267.061 and 373.414, *Florida Statutes*, and implementing state regulations, for possible effects on historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value.

Based on the information provided, it is the opinion of this office that the proposed project is unlikely to adversely affect historic properties, and we request that the permit include the following special condition regarding inadvertent discoveries:

- If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, *Florida Statutes*.

If you have any questions, please contact Florence McCullough, M.A., RPA, Historic Sites Specialist, by email at *Florence.McCullough@dos.myflorida.com*, or by telephone at 850.245.6333 or 800.847.7278.

Sincerely,

Jason Aldridge
For

Timothy A. Parsons, Ph.D., RPA
Director, Division of Historical Resources
and State Historic Preservation Officer

Division of Historical Resources
R.A. Gray Building • 500 South Bronough Street• Tallahassee, Florida 32399
850.245.6300 • 850.245.6436 (Fax) FLHeritage.com

Historical Resources

Bonita Springs Golf Course RPD

Exhibit III-A-2
Density Calculations

A. Gross Residential Acres

1. Total land area: 113+/- acres

2. Area to be used for non-residential uses: (Line A.2.a. plus A.2.b.): 0 acres

a. R-O-W providing access to non-residential uses: 0 acres

b. Non-residential use areas: 0 acres

3. Gross residential acres (Line A.1 less A.2): 113+/- acres

a. Uplands areas:

Moderate Density Residential 56 +/- acres

Medium Density Multi-Family Residential 56.8+/- acres

b. Freshwater Wetlands areas 0.2+/- acres

c. Other Wetland areas 0 acres

B. Comprehensive Plan Land Use Classification: Moderate Density Residential and Medium Density Multi-Family Residential

Density Standards (from the Comprehensive Plan)

1. Maximum density for Land Use Classification:

Moderate Density Residential 6 units\gross res. Acre

Medium Density Multi-Family Residential 6 units\gross res. Acre

2. Maximum total density for Land Use Classification:

Moderate Density Residential 6 units\gross res. Acre

Medium Density Multi-Family Residential 6 units\gross res. Acre

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Q. Grady Minor & Associates, P.A.
3800 Via Del Rey, Bonita Springs, FL 34134 • 239-947-1144 • engineering@gradyminor.com • www.gradyminor.com

MAXIMUM PERMITTED DWELLING UNITS

D. Moderate Density Residential (56+/- acres)

1. Standard density uplands units (A.3.a. times B.1) 336 units
2. Standard density freshwater wetlands units (A.3.b. times B.1) 0 units
3. Total standard density units (sum of D.1 & D.2) 337 units
4. Maximum upland density (A.3.a. times 8) 449 units
5. **Total permitted units** (line D.3 or D.4 - whichever is less): **336 Units**

D. Medium Density Multi-Family Residential (56.8+/- acres)

1. Standard density uplands units (A.3.a. times B.1) 340 units
2. Standard density freshwater wetlands units (A.3.b. times B.1) 0 units
3. Total standard density units (sum of D.1 & D.2) 340 units
4. Maximum upland density (A.3.a. times 8) 454 units
5. **Total permitted units** (line D.3 or D.4 - whichever is less): **282* (340 – 58 = 282) Units**

***A total of 58 dwelling units were previously transferred to the Lakeside Hideaway multi-family project (DOS2001-00226).**

Traffic Impact Statement

Bonita Springs Golf Course

Residential Planned Development (RPD) Rezone

Bonita Springs, FL
6/4/2021

Prepared for:

Barron Collier Companies
2600 Golden Gate Parkway
Naples, FL 34105
Phone: 239-403-6804

Prepared by:

Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
Phone: 239-566-9551
Email: ntrebilcock@trebilcock.biz

Statement of Certification

I certify that this Traffic Impact Statement has been prepared by me or under my immediate supervision and that I have experience and training in the field of Traffic and Transportation Engineering.

This item has been electronically signed and sealed by Norman J. Trebilcock, P.E., State of Florida license 47116, using a *SHA-1* authentication code. Printed copies of this document are not considered signed and sealed, and the *SHA-1* authentication code must be verified on any electronic copies.

Norman J. Trebilcock, AICP, PTOE, PE
FL Registration No. 47116
Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
Company Cert. of Auth. No. 27796

Table of Contents

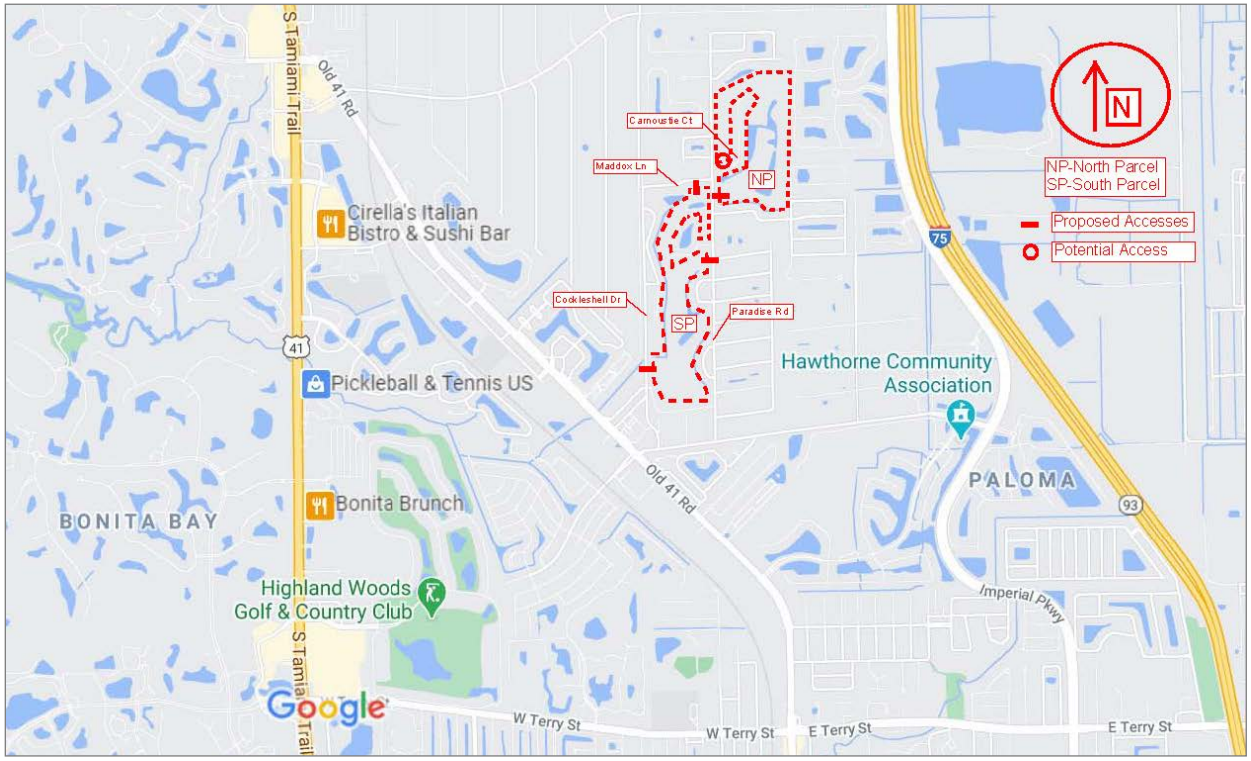
Appendices

Project Description

The Bonita Springs Golf Course project is located east of Cockleshell Drive, south of Maddox Lane and east of Paradise Road, south of Wild Turkey Avenue, in Bonita Springs Country Club subdivision, within the limits of the City of Bonita Springs. The subject site lies in Section 23, Township 47 South, Range 25 East, in Lee County, Florida.

For location and layout of the project refer to **Figure 1 – Project Location Map**, which follows, and **Appendix A: Project Master Site Plan**.

Figure 1 – Project Location Map



The subject site was previously developed as an 18-hole golf course which closed in May 2006.

The project proposes to rezone the property from Residential Single-Family RS-1 and Residential Multiple-Family RM-2 to Residential Planned Development (RPD) and to permit the development of 500 residential dwelling units.

This traffic study has been prepared consistent with the City of Bonita Springs Traffic Impact Statement (TIS) Guidelines (per F.A.C. 17-076) and Lee County Turn Lane Policy (F.A.C. 11-4) recommendations.

The project provides a highest and best use scenario with respect to the project's trip generation as depicted in the Institute of Transportation Engineers (ITE) Trip Generation Manual. The development program is illustrated in **Table 1**. The ITE land use designations are depicted in agreement with the ITE Land Use Code (LUC) descriptions.

Table 1
Development Program

Development	Land Use	ITE Land Use Code	Size
North Parcel	Single-Family	210 – Single-Family Detached Housing	230 dwelling units
South Parcel	Single-Family	210 – Single-Family Detached Housing	70 dwelling units
	Multiple-Family	220 – Multifamily Housing (Low-Rise)	200 dwelling units

For the purposes of this analysis, the future forecast year is 2025.

A methodology meeting was held with the City of Bonita Springs Transportation Planning staff (via email) on March 9, 2021 as illustrated in **Appendix B: Initial Meeting Checklist (Methodology).**

As illustrated in the proposed Master Site Plan, connections to the subject site are proposed as follows: North Parcel – one full movement access onto Paradise Road and one potential access onto Carnousti Court; South Parcel – up to two full movement accesses onto Maddox Lane, two full movement accesses onto Paradise Road and one full movement access onto Cockleshell Drive.

Trip Generation

Traffic generation associated with the proposed development is evaluated generally based on ITE Trip Generation Manual, 10th Edition and ITE Trip Generation Handbook, 3rd Edition. The software program OTISS, Online Traffic Impact Study Software (most current version) is used to create the trip generation for the project. The ITE rates and equations have been used for the trip generation calculations as applicable. Detailed calculations can be found in **Appendix C: ITE Trip Generation Calculations**.

The ITE Trip Generation Manual provides three unique land use codes that describe Multifamily Housing. Based on the number of levels (floors) provided, these are illustrated as follows: LUC 220 – Multifamily Housing (Low-Rise), LUC 221 – Multifamily Housing (Mid-Rise) and LUC 222 – Multifamily Housing (High-Rise). In order to provide more flexibility for development options, the LUC 220 – Multifamily Housing (Low-Rise) represents the conservative (higher) traffic generator and it is utilized for the purposes of this report.

Based on ITE recommendations, no reductions for internal capture or pass-by trip are considered for this project.

In agreement with the City of Bonita Springs TIS guidelines, significantly impacted roadways are identified based on projected AM and PM peak hour, peak direction project trips. In addition, site access operational analysis is calculated based on AM and PM peak hour project trips.

A summary of the proposed project trip generation calculations is illustrated in **Table 2**.

Table 2
Project Trip Generation – Build-out Conditions – Average Weekday [(1)]

Traffic	24 Hour Two-Way Volume	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Development SF –300 du; MF – 200 du	4,328	76	234	310	253	148	401
North Parcel [(2)] SF – 230 du	2,190	42	125	167	141	83	224
South Parcel [(2)] SF – 70 du; MF – 200 du	2,138	34	109	143	112	65	177

Note(s): (1) SF = Single-Family Detached Housing; MF = Multifamily Housing
(2) Traffic for each parcel is determined as a fraction from total development traffic based on number of units.

Trip Distribution and Assignment

The traffic generated by the development is assigned to the adjacent roadway network based on the knowledge of the area and as approved in the methodology meeting.

As illustrated in the adopted City of Bonita Springs TIS guidelines, significantly impacted roadways are defined as any segment where the directional AM and PM peak hour project trips exceed 2% or 3%, as applicable, of the directional peak hour capacity of the level of service standard for each segment identified.

The north parcel development proposes a potential connection to Carnousti Court. For the purposes of this report, traffic generated by the north parcel development is conservatively assumed at 100% to access the site via the main proposed entrance located on Paradise Road.

In addition, the proposed residential use located on the north side of the South Parcel development is projected to generate approximately 15% of the traffic associated with the South Parcel buildout. Due to its limited impact and number of proposed access connections, traffic generated by this localized development is conservatively assumed at 100% to access the site via the proposed entrances located on Maddox Lane.

The site-generated trip distribution is shown in **Table 3, Project Traffic Distribution for AM and PM Peak Hour, Peak Direction** and is graphically depicted in **Figure 2 – Project Distribution by Percentage and by AM and PM Peak Hour, Peak Direction**.

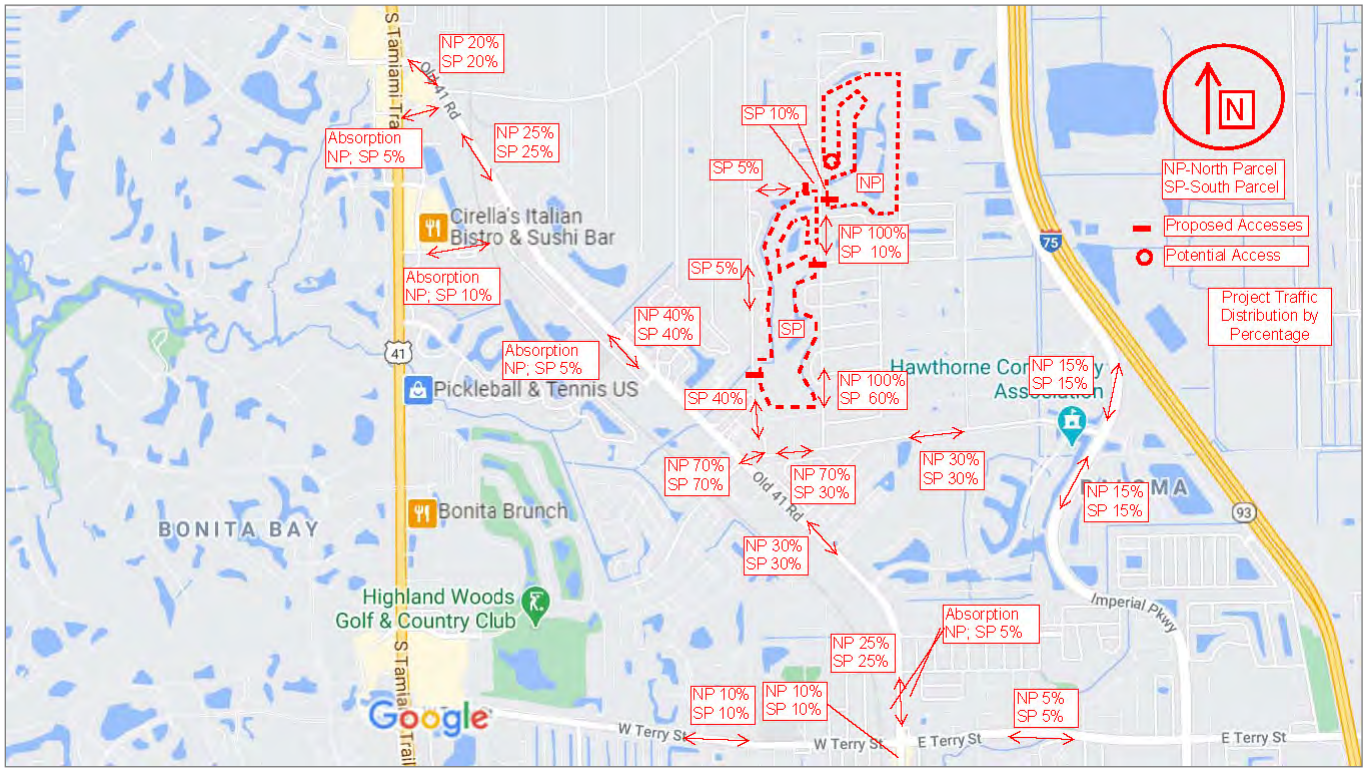
Based on the trip generation data illustrated in **Table 2** and **Table 3**, the estimated PM peak hour, peak direction project trips are more intensive than the AM peak hour, peak direction project trips, and are conservatively utilized for level of service impact determinations.

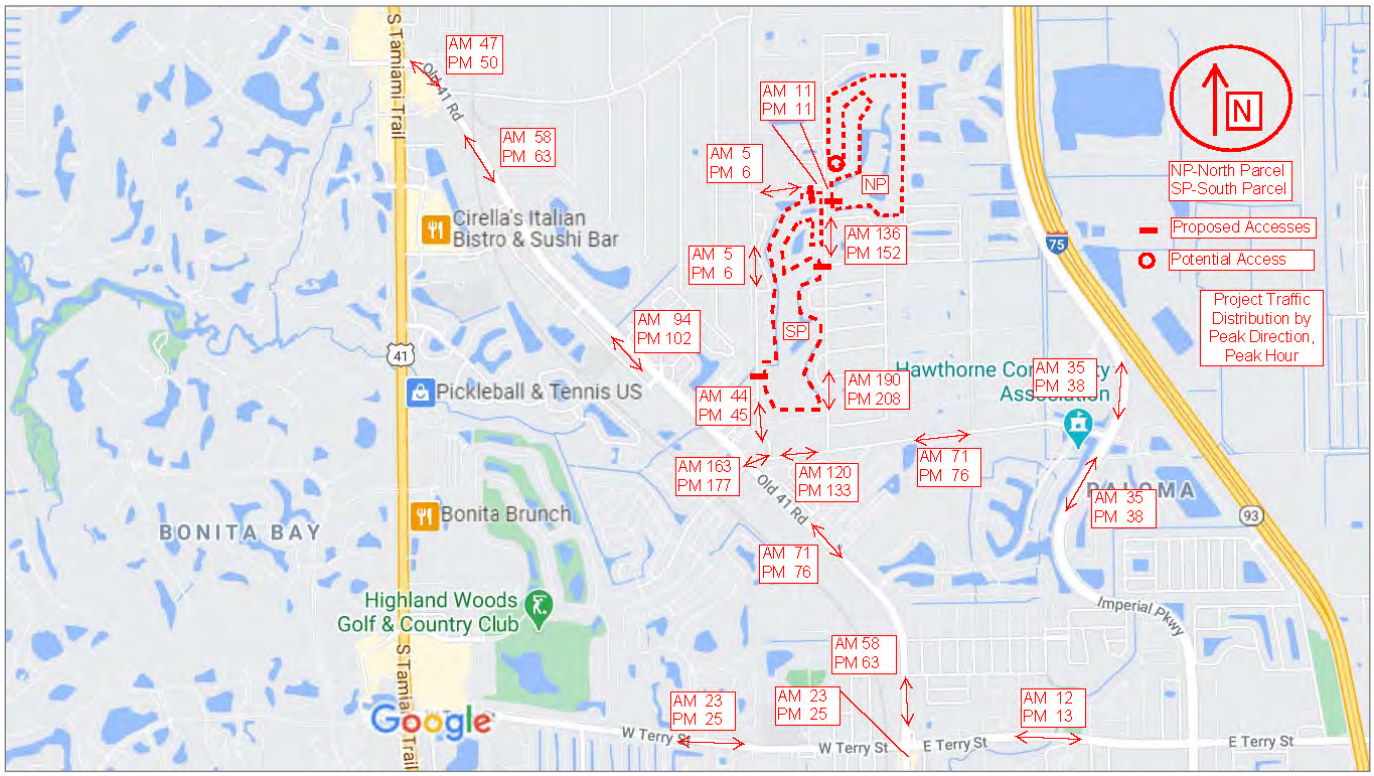
Table 3
Project Traffic Distribution for AM and PM Peak Hour, Peak Direction [(1)]

Roadway	Roadway Segment Location	Distribution of Project Traffic	Peak Hour, Peak Direction Project Volume	
			AM	PM
Maddox Ln	Cockleshell Dr to SP Access	SP 5%	5	6
Maddox Ln	SP Access to Paradise Rd	SP 10%	11	11
Paradise Rd	Maddox Ln to NP Access	SP 10%	11	11
Paradise Rd	NP Access to SP Access	NP 100% SP 10%	NP 125; SP 11 Total 136	NP 141; SP 11 Total 152
Paradise Rd	SP Access to Shangri-La Rd	NP 100% SP 60%	NP 125; SP 65 Total 190	NP 141; SP 67 Total 208
Cockleshell Dr	Maddox Ln to SP Access	SP 5%	5	6
Cockleshell Dr	SP Access to Shangri-La Rd	SP 40%	44	45
Shangri-La Rd	East of Paradise Rd	NP 30% SP 30%	NP 38; SP 33 Total 71	NP 42; SP 34 Total 76
Shangri-La Rd	Cockleshell Dr to Paradise Rd	NP 70% SP 30%	NP 88; SP 33 Total 121	NP 99; SP 34 Total 133
Shangri-La Rd	Old 41 Rd to Cockleshell Dr	NP 70% SP 70%	NP 87; SP 76 Total 164	NP 99; SP 78 Total 177
Imperial Pkwy	North of Shangri-La Rd	NP 15% SP 15%	NP 19; SP 16 Total 35	NP 21; SP 17 Total 38
Imperial Pkwy	South of Shangri-La Rd	NP 15% SP 15%	NP 19; SP 16 Total 35	NP 21; SP 17 Total 38
Old 41 Rd	South of Shangri-La Rd	NP 30% SP 30%	NP 38; SP 33 Total 71	NP 42; SP 34 Total 76
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	NP 40% SP 40%	NP 50; SP 44 Total 94	NP 57; SP 45 Total 102
Old 41 Rd	Bernwood Pkwy to Strike Ln	NP 25% SP 25%	NP 31; SP 27 Total 58	NP 35; SP 28 Total 63
Old 41 Rd	Strike Ln to US 41	NP 20% SP 20%	NP 25; SP 22 Total 47	NP 28; SP 22 Total 50
Potential Access on Carnousti Ct				
Paradise Rd	Maddox Ln to Carnousti Ct	NP 10%	13	14
Carnousti Ct	Paradise Rd to NP Access	NP 10%	13	14

Note(s): (1) SP = South Parcel; NP = North Parcel.

Figure 2 – Project Distribution by Percentage and by AM and PM Peak Hour, Peak Direction





Background Traffic

Future Growth Rates Determination

Historic growth rates are estimated for the segments of the roadway network in the study area using a general guidance of a minimum 2% growth rate, or historical growth rates from available traffic counts.

Projected historical linear growth rates are calculated for a 5-year period (2015 – 2020) based on daily traffic volumes illustrated in the 2020 City of Bonita Springs traffic count report. Refer to **Appendix D: Bonita Springs 2020 Traffic Count Data (Excerpts)**.

A traffic memorandum titled Traffic Growth Trends is provided in **Appendix E**. Based on the results illustrated in this analysis and per coordination with City staff, calculated growth rates are moderated to a maximum reasonable rate of 5%, with the exception of Imperial Parkway analyzed segments (annual growth rates: north of Shangri-La -5.9%; south of Shangri-La – 6.2%). Annual growth rate determination is illustrated in **Table 4A**.

Table 4A
Annual Growth Rate Determination [(1)]

Roadway	Roadway Segment Location	FTE Station Number	Historic Traffic Count (Year)\Volume		Growth Rate Calculated	Growth Rate Applied
			From	To		
Paradise Rd	Maddox Ln to NP Access	0002	(2017)/2,500	(2020)/3,600	14.7%	5.0%
Paradise Rd	NP Access to SP Access	0002	(2017)/2,500	(2020)/3,600	14.7%	5.0%
Paradise Rd	SP Access to Shangri-La Rd	0002	(2017)/2,500	(2020)/3,600	14.7%	5.0%
Cockleshell Dr	Maddox Ln to SP Access	1213	(2015)/1,900	(2020)/2,200	3.2%	3.2%
Cockleshell Dr	SP Access to Shangri-La Rd	1213	(2015)/1,900	(2020)/2,200	3.2%	3.2%
Shangri-La Rd	East of Paradise Rd	1212	(2015)/4,600	(2020)/7,500	12.6%	5.0%
Shangri-La Rd	Cockleshell Dr to Paradise Rd	1212	(2015)/4,600	(2020)/7,500	12.6%	5.0%
Shangri-La Rd	Old 41 Rd to Cockleshell Dr	1212	(2015)/4,600	(2020)/7,500	12.6%	5.0%
Imperial Pkwy	North of Shangri-La Rd	1226	(2015)/13,000	(2020)/18,500	8.5%	5.9%
Imperial Pkwy	South of Shangri-La Rd	1227	(2015)/13,800	(2020)/20,000	9.0%	6.2%
Old 41 Rd	South of Shangri-La Rd	1220	(2015)/20,700	(2020)/22,000	1.3%	2.0%
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	1228	(2015)/13,600	(2020)/16,300	4.0%	4.0%
Old 41 Rd	Bernwood Pkwy to Strike Ln	1216	(2015)/12,000	(2020)/14,200	3.7%	3.7%
Old 41 Rd	Strike Ln to US 41	1216	(2015)/12,000	(2020)/14,200	3.7%	3.7%

Note(s): (1) SP = South Parcel; NP = North parcel.

Background Traffic Determination – City of Bonita Springs Traffic Data

In accordance with the City of Bonita Springs TIS Guidelines, background traffic volumes reflect peak hour, peak season, peak direction traffic volumes.

The 2020 City of Bonita Springs traffic count report is used to determine the current 2020 peak hour, peak season, peak direction traffic volumes for the analyzed roadway segments. The 2020 peak hour, peak season, peak direction volumes are determined as the highest peak hour, peak direction volume (AM peak hour or PM peak hour) of a typical weekday during peak season (per City's traffic count report – three day average counted under peak season conditions). Refer to **Appendix D: Bonita Springs 2020 Traffic Count Data (Excerpts)**.

Please note that Maddox Lane and Carnousti Court are not traffic monitored roadway facilities.

The 2020 base year traffic volumes were factored by the appropriate annual growth rate (**Table 4A)** in order to determine the 2025 background peak hour, peak season, peak direction traffic volumes.

Table 4B illustrates the year 2020 and 2025 background traffic (without project) and the Level of Service (LOS) for the roadway links within the study area. The LOS evaluation is based on the most current Lee County Generalized Peak Hour Directional Service Volumes (refer to **Appendix F**).

As there are no vested or reserved trips assigned to the analyzed roadway network, this report calculates future background traffic using annual growth rates.

Based on the traffic data illustrated in **Table 4B**, the analyzed roadway segments are shown to operate at LOS "D" or better under 2020 and 2025 background traffic conditions (without project).

Table 4B
Background Traffic without Project (2020 – 2025) – City of Bonita Springs Traffic Data

Roadway	Roadway Segment Location	2020 Peak Hour, Peak Season, Peak Direction Volume - LOS (1)	Traffic Annual Growth Rate (2)	Growth Factor (3)	2025 Peak Hour, Peak Season, Peak Direction Volume – LOS (4)
Paradise Rd	Maddox Ln to NP Access	212 – C	5.0%	1.250	265 - C
Paradise Rd	NP Access to SP Access	212 – C	5.0%	1.250	265 - C
Paradise Rd	SP Access to Shangri-La Rd	212 – C	5.0%	1.250	265 – C
Cockleshell Dr	Maddox Ln to SP Access	140 – C	3.2%	1.160	163 – C
Cockleshell Dr	SP Access to Shangri-La Rd	140 – C	3.2%	1.160	163 – C
Shangri-La Rd	East of Paradise Rd	416 – D	5.0%	1.250	520 – D
Shangri-La Rd	Cockleshell Dr to Paradise Rd	416 – D	5.0%	1.250	520 – D
Shangri-La Rd	Old 41 Rd to Cockleshell Dr	416 – D	5.0%	1.250	520 – D
Imperial Pkwy	North of Shangri-La Rd	1,126 – C	5.9%	1.295	1,459 - C
Imperial Pkwy	South of Shangri-La Rd	1,274 – C	6.2%	1.310	1,669 - C
Old 41 Rd	South of Shangri-La Rd	939 – D	2.0%	1.100	1,033 – D
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	779 – C	4.0%	1.200	935 – C
Old 41 Rd	Bernwood Pkwy to Strike Ln	723 – C	3.7%	1.185	857 – C
Old 41 Rd	Strike Ln to US 41	723 – C	3.7%	1.185	857 - C

Note(s): SP = South Parcel; NP = North Parcel.
(1) Refer to **Appendix D** and **Appendix F;** represent the highest peak hour, peak direction volume (AM or PM peak hour).
(2) Refer to **Table 4A.**
(3) Growth Factor = (1 + Annual Growth Rate x 5)
(4) 2025 Projected Volume = 2020 Volume x Growth Factor.

Existing and Future Roadway Network

Roadway improvements that are currently under construction or are scheduled to be constructed within the five years of the current Capital Improvement Program (CIP), are considered to be committed improvements for the purposes of this study. As no capacity improvements were identified for the evaluated roadway links, no changes to the study network are anticipated in the year 2025.

Based on the City of Bonita Springs Transportation Element – Policy 1.1.3, the minimum acceptable peak hour/peak season/peak direction roadway levels of service (Standard LOS) shall be as follows: LOS "E" for arterials and collectors and LOS"D" for local roads.

Based on the City of Bonita Springs Transportation Element – Figure 1 – Future Road System Functional Classification, the analyzed roadways are classified as follows: Paradise Road, Maddox Lane and

Carnousti Court – local roadways; Cockleshell Drive and Shangri-La Road – minor collectors; and Imperial Parkway and Old 41 Road – major arterials. Refer to **Appendix G: Bonita Springs Future Road System Functional Classification**.

Table 5 illustrates current 2020 and future 2025 roadway conditions, as well as the adopted Standard LOS.

Table 5
Existing and Future Roadway Conditions

Roadway	Roadway Segment Location	2020 Roadway Conditions	2020 Standard LOS	2020 Standard Capacity Volume (1)	2025 Roadway Conditions	2025 Standard LOS	2025 Standard Capacity Volume (1)
Maddox Ln	Cockleshell Dr to SP Access	2LN	D	660	2LN	D	660
Maddox Ln	SP Access to Paradise Rd	2LN	D	660	2LN	D	660
Paradise Rd	Maddox Ln to NP Access	2LN	D	660	2LN	D	660
Paradise Rd	NP Access to SP Access	2LN	D	660	2LN	D	660
Paradise Rd	SP Access to Shangri-La Rd	2LN	D	660	2LN	D	660
Cockleshell Dr	Maddox Ln to SP Access	2LN	E	740	2LN	E	740
Cockleshell Dr	SP Access to Shangri-La Rd	2LN	E	740	2LN	E	740
Shangri-La Rd	East of Paradise Rd	2LN	E	740	2LN	E	740
Shangri-La Rd	Cockleshell Dr to Paradise Rd	2LN	E	740	2LN	E	740
Shangri-La Rd	Old 41 Rd to Cockleshell Dr	2LN	E	740	2LN	E	740
Imperial Pkwy	North of Shangri-La Rd	4LD	E	1,960	4LD	E	1,960
Imperial Pkwy	South of Shangri-La Rd	4LD	E	1,960	4LD	E	1,960
Old 41 Rd	South of Shangri-La Rd	4LD	E	1,660	4LD	E	1,660
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	4LD	E	1,960	4LD	E	1,960
Old 41 Rd	Bernwood Pkwy to Strike Ln	4LD	E	1,960	4LD	E	1,960
Old 41 Rd	Strike Ln to US 41	4LD	E	1,960	4LD	E	1,960
Potential Access on Carnousti Ct							
Paradise Rd	Maddox Ln to Carnousti Ct	2LN	D	660	2LN	D	660
Carnousti Ct	Paradise Rd to NP Access	2LN	D	660	2LN	D	660

Note(s): SP = South Parcel; NP = North Parcel.
2LN = 2-lane narrow roadway; 4LD, 6LD = 4-lane, 6-lane divided roadway, respectively.
LOS = Level of Service.
(1) Refer to **Appendix F.**

Project Impacts to Area Roadway Network – Roadway Link Analysis

Significant impacts and LOS determination for the area roadway network are evaluated to establish the project impacts for the forecast year 2025.

Significantly impacted roadways are defined as any segment where the directional peak hour project trips exceed 2% or 3%, as applicable, of the directional peak hour capacity of the level of service standard for each segment as identified in Subsection 5.03 of the City of Bonita Springs TIS Guidelines.

The LOS evaluation is based on the most current Lee County Generalized Peak Hour Directional Service Volumes (refer to **Appendix F**).

As previously illustrated in this report, the estimated PM peak hour, peak direction project trips are more intensive than the AM peak hour, peak direction project trips, and are conservatively utilized for the purposes of this analysis.

Future 2025 background traffic volumes are combined with estimated PM peak hour, peak direction project trips, as illustrated in **Table 6.**

Consistent with the results presented in **Table 6**, the estimated project's traffic volumes create significant impacts on most of the analyzed roadway segments.

In addition, the analyzed roadway segments are not projected to exceed the adopted LOS Standard with or without the project at 2025 future traffic conditions.

Table 6
Roadway LOS – Traffic Impact – PM Peak Hour, Peak Season, Peak Direction

Roadway Link	Roadway Segment Location	Standard Capacity Volume – LOS [1]	2025 Background Service Volume – LOS [2]	PM Pk Hr, Pk Dir, Project Volume Added[3]	2025 Total PM Pk Hr, Pk Season, Pk Dir, Roadway Volume–LOS[4]	Project PM Pk Hr, Pk Dir as % of Standard Capacity	2025 Background Volume exceeds Standard Capacity?	2025 Total Volume exceeds Standard Capacity?
Maddox Ln	Cockleshell Dr to SP Access	660 – D	N/A	6	N/A	0.9%	N/A	N/A
Maddox Ln	SP Access to Paradise Rd	660 – D	N/A	11	N/A	1.7%	N/A	N/A
Paradise Rd	Maddox Ln to NP Access	660 – D	265 - C	11	276 – C	1.7%	No	No
Paradise Rd	NP Access to SP Access	660 – D	265 - C	152	417 – D	23.0%	No	No
Paradise Rd	SP Access to Shangri-La Rd	660 – D	265 – C	208	473 – D	31.5%	No	No
Cockleshell Dr	Maddox Ln to SP Access	740 – E	163 – C	6	169 – C	0.8%	No	No
Cockleshell Dr	SP Access to Shangri-La Rd	740 – E	163 – C	45	208 – C	6.1%	No	No
Shangri-La Rd	East of Paradise Rd	740 – E	520 – D	76	596 – D	10.3%	No	No
Shangri-La Rd	Cockleshell Dr to Paradise Rd	740 – E	520 – D	133	653 – D	18.0%	No	No
Shangri-La Rd	Old 41 Rd to Cockleshell Dr	740 – E	520 – D	177	697 – E	23.9%	No	No
Imperial Pkwy	North of Shangri-La Rd	1,960 – E	1,459 - C	38	1,497 – C	1.9%	No	No
Imperial Pkwy	South of Shangri-La Rd	1,960 – E	1,669 - C	38	1,707 – C	1.9%	No	No
Old 41 Rd	South of Shangri-La Rd	1,660 – E	1,033 – D	76	1,109 – D	4.6%	No	No
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	1,960 – E	935 – C	102	1,037 – C	5.2%	No	No
Old 41 Rd	Bernwood Pkwy to Strike Ln	1,960 – E	857 – C	63	920 – C	3.2%	No	No
Old 41 Rd	Strike Ln to US 41	1,960 – E	857 - C	50	907 – C	2.6%	No	No
Potential Access on Carnousti Ct								
Paradise Rd	Maddox Ln to Carnousti Ct	660 – D	N/A	14	N/A	2.1%	N/A	N/A
Carnousti Ct	Paradise Rd to NP Access	660 – D	N/A	14	N/A	2.1%	N/A	N/A

Note(s): N/A – not applicable; not a traffic monitored roadway segment;
(1) Refer to **Table 5** from this report.
(2) Refer to **Table 4B** from this report and **Appendix F**.
(3) Refer to **Table 3** from this report.
(4) 2025 Projected Volume = 2025 background + Project Volume added and **Appendix F**.

Additional Roadway Segments Impacted by Project Traffic

Based on the fact that the Old 41 Rd segment south of Shangri-La Rd is significantly impacted by the project's traffic, additional roadway segments are evaluated.

As illustrated in the City of Bonita Springs Transportation Element – Figure 1 – Future Road System Functional Classification, the additional analyzed roadway segments are classified as follows: Old 41 Road (north and south of W Terry St) – major arterial; W Terry St and E Terry St – minor arterials (**Appendix G**).

Table 7A illustrates current 2020 and future projected 2025 roadway conditions, as well as the adopted Standard LOS.

Table 7A
Existing and Future Roadway Conditions

Roadway	Roadway Segment Location	2020 Roadway Conditions	2020 Standard LOS	2020 Standard Capacity Volume (1)	2025 Roadway Conditions	2025 Standard LOS	2025 Standard Capacity Volume (1)
Old 41 Rd	North of W Terry St	4LD	E	1,660	4LD	E	1,660
E Terry St	East of Old 41 Rd	4LD	E	1,660	4LD	E	1,660
W Terry St	West of Old 41 Rd	2LN	E	780	2LN	E	780
Old 41 Rd	South of W Terry St	2LD	E	850(2)	2LD	E	850(2)

Note(s): SP = South Parcel; NP = North Parcel; LOS = Level of Service.
2LN = 2-lane narrow roadway; 2LD, 4LD, 6LD = 2-lane, 4-lane, 6-lane divided roadway, respectively..
(1) Refer to **Appendix F.**
(2) LOS Volume 10% higher than LOS Volume for a 2LN facility.

Significant impacts are evaluated for these additional roadway segments as illustrated in **Table 7B**.

Table 7B
Significant Traffic Impact Evaluation

Roadway	Roadway Segment Location	Standard Capacity Volume - LOS (1)	PM Pk Hr, Pk Dir, Project Volume Added(2)	Project PM Pk Hr, Pk Dir as % of Standard Capacity
Old 41 Rd	North of W Terry St	1,660 – E	63	3.8%
E Terry St	East of Old 41 Rd	1,660 – E	13	0.8%
W Terry St	West of Old 41 Rd	780 – E	25	3.2%
Old 41 Rd	South of W Terry St	850 – E	25	2.9%)

Note(s): SP = South Parcel; NP = North Parcel; LOS = Level of Service.
2LN = 2-lane narrow roadway; 2LD, 4LD, 6LD = 2-lane, 4-lane, 6-lane divided roadway, respectively.
(1) Refer to **Table 7A.**
(2) Refer to **Figure 2**.

Consistent with the results presented in **Table 7B**, the estimated project's traffic volumes create significant impacts on W Terry St. There are significant traffic attractors at the Pine Ave and W Terry St intersection such as Educare Academy, Bonita Springs Middle School and Bonita Springs Recreation Center. As such, project traffic is expected to attenuate at these locations and provide insignificant impacts on W Terry S segment located west of Pine Ave.

Site Access Turn Lane Analysis

As illustrated in the proposed Master Site Plan, connections to the subject site are proposed as follows: North Parcel – one full movement access onto Paradise Road and one potential access onto Carnousti Court; South Parcel – up to two full movement accesses onto Maddox Lane, two full movement accesses onto Paradise Road and one full movement access onto Cockleshell Drive. For more details refer to **Appendix A: Project Master Site Plan**.

Turn lane recommendations coincident with the project build-out conditions have been reviewed based on Lee County Turn Lane Policy AC-11-4 criteria. According to the Lee County Turn Lane Policy, left- and/or right-turn lanes are required when any two or more warrants are satisfied.

The analysis is provided in the attached **Appendix H: Project Turning Movement Exhibits** and **Appendix I: Site Access Turn Lane Warrant Analysis**.

For the purposes of this report, traffic generated by the North Parcel development is conservatively assumed at 100% to access the site via the main proposed entrance located on Paradise Road. The potential connection to Carnousti Court will relieve traffic at the main access.

As previously described in this report, traffic generated by the residential section located on the north side of the South Parcel development is conservatively assumed at 100% to access the site via the proposed entrances located on Maddox Lane. In addition, for turn lane evaluation purposes one access connection servicing the South Parcel development is conservatively considered on Maddox Lane.

Based on the results illustrated in **Appendix I**, turn lanes are not warranted for the proposed accesses that service the South Parcel and are warranted at the proposed North Parcel main access located on Paradise Road.

Paradise Road and North Parcel Access Intersection

Paradise Road has a posted speed limit of 30 miles per hour (mph) in the vicinity of project boundary.

Consistent with the Florida Department of Transportation (FDOT) 2021 Florida Design Manual (FDM), Chapter 212, Exhibit 212-1, design speed of 35 mph – urban conditions – the minimum turn lane length is 145 feet (deceleration length which includes a 50 foot taper) plus required queue.

As illustrated in **Appendix H**, the project is expected to generate 42 and 141vph northbound right-turning movements during the AM and PM peak hour, respectively.

The site connection provides a minimum of 150 feet of "throat" length that may be utilized for stacking and safe ingress into the property. In addition, due to the free flow condition at this access, the queue length may be omitted. Based on these considerations, a stacking right-turn lane is recommended to consist of a minimum 145 feet (deceleration length for a 30 mph facility).

To promote safety improvements and operational performance, the developer proposes a roundabout at this location which is adequate to accommodate projected traffic. In addition, roundabouts have traffic calming effects on streets by reducing vehicle speed using geometric design rather than relying solely on traffic control devices.

Intersection Operational Analyses

The following intersections are analyzed for turn lane warrants and capacity performance for AM and PM peak hour traffic conditions:

- Shangri-La Rd and Paradise Rd.
- Shangri-La Rd and Cockleshell Dr.
- Old 41 Rd and Shangri-La Rd.

Intersection Configurations

- The existing intersection lane configurations are depicted in this report based on existing field conditions.
- The Shangri-La Rd and Paradise Rd intersection is stop controlled on Paradise Rd approach.
- The Shangri-La Rd and Cockleshell Dr intersection is stop controlled on Cockleshell Dr approach.
- The Old 41 Rd and Shangri-La Rd intersection is currently signalized. The northbound right-turn lane is yield controlled.
- The existing configuration at subject intersections is illustrated in **Figures 3A, 3B and 3C**.

Figure 3A – Shangri-La Rd and Paradise Rd intersection – Existing Conditions

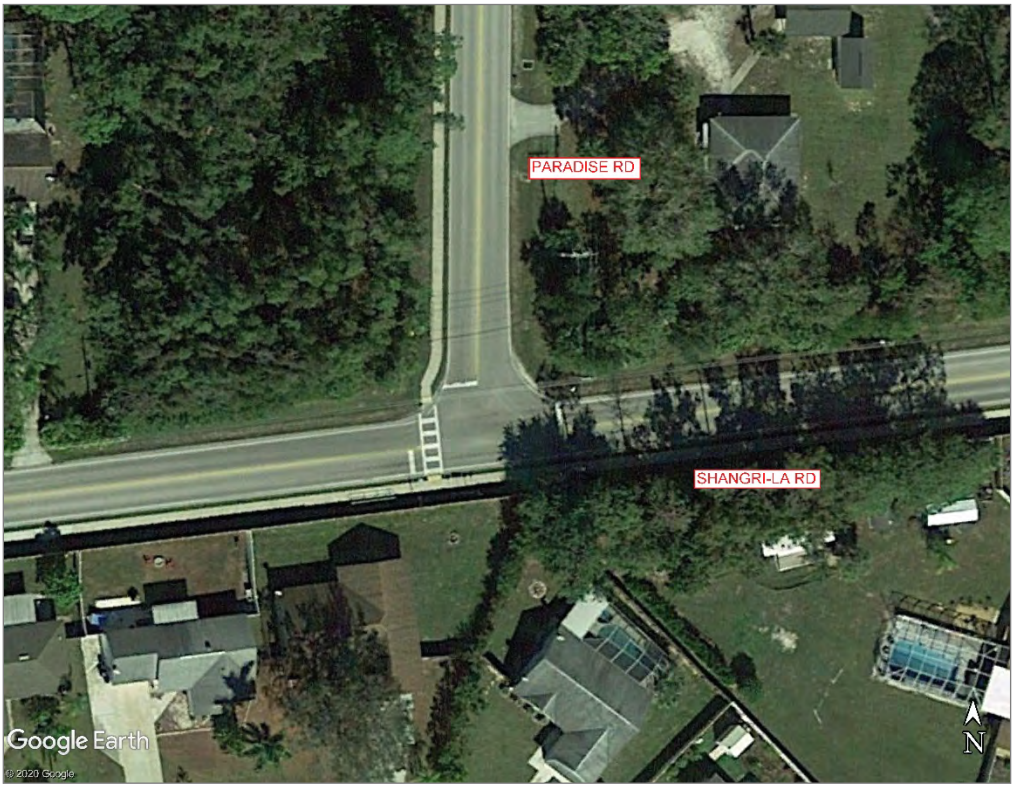


Figure 3B – Shangri-La Rd and Cockleshell Dr intersection – Existing Conditions

Figure 3C – Old 41 Rd and Shangri-La Rd intersection – Existing Conditions

Intersection Traffic Volumes

The existing intersection lane configurations are depicted in this report based on existing field conditions.

To support the traffic analysis, intersection turning movement counts were conducted for the subject intersections on Wednesday December 9, 2020. AM and PM peak period turning movement data were collected in 15-minute intervals from 7-9 AM, and from 4-6 PM.

A summary of the intersection turning movement counts is provided in **Appendix J: Raw Intersection Turning Movement Counts**.

Traffic count volumes collected are adjusted for peak season conditions by using the peak season conversion factor (PSCF) as illustrated in FDOT Peak Season Factor Category Report (reference **Appendix K**). It is noted that there is no data available in the 2019 FDOT Peak Season Factor Category Report for the Bonita Springs Area. As such, the 2018 FDOT Peak Season Factor Category Report is utilized.

Future 2025 intersection traffic volumes are determined based on a growth factor applied to all traffic movements, consistent with the annual growth factor applied to the road segment they service (refer to **Table 4A** in this report).

Forecasted traffic generated by the project is assigned to the subject intersections generally consistent with the project trip distribution and assignment, as illustrated in **Figure 2** in this report.

Intersection traffic projections coincident with the future 2025 forecast year are presented in **Appendix K: Projected Traffic at Subject Intersections**.

Intersection Turn Lane Warrant Analysis

Turn lane recommendations coincident with the project build-out conditions have been reviewed based on Lee County Turn Lane Policy AC-11-4 criteria.

Turn lane requirements are evaluated based on the following scenarios:

- Year 2025 Traffic Background Conditions without project.
- Year 2025 Traffic Background Conditions with project.

The analysis is provided in the **Appendix L: Intersections – Turn Lane Warrant Analysis**.

In agreement with Florida statute, the developer is not responsible to address transportation deficiencies which occur regardless of the project's traffic.

Based on the results presented in **Appendix L**, turn lane warrants are met for the following:

- Shangri-La Rd and Paradise Rd: southbound Right-Turn Lane; southbound Left-Turn Lane (2025 Background with Project traffic).
- Old 41 Rd and Shangri-La Rd – all analyzed turn lanes (2025 Background with no Project traffic).

As such, an exclusive southbound right-turn lane is recommended at Shangri-La Rd and Paradise Rd intersection. The existing lane will service the left-turn movements at this location.

Intersection Capacity Analyses

An assessment of the Level of Service (LOS) and volume to capacity ratio analysis of the subject intersections are conducted using Synchro Version 10 software. The operation of the analyzed intersections is evaluated based on methodologies from the Highway Capacity Manual, 6th Edition (HCM 6).

As illustrated in the HCM 6, Volume 4, Chapter 31, page 31-121, the treatment of right-turn-on-red (RTOR) operation in the motorized vehicle methodology is simplistic. In addition, HCM 6 states that it may be preferable to use an alternative tool to evaluate RTOR operation. As such, in addition to the HCM 6 method, this report utilizes Synchro Control Delay (Percentile Method)/Intersection Capacity Utilization (ICU) Method to evaluate signalized intersection delay.

Signal Timings – To support the signalized intersection analyses, the existing controller timing plan was provided by Lee County Transportation staff. For details refer to **Appendix M: Synchro Analysis Support.**

Percent Heavy Vehicle – The intersection analyses for the current existing conditions reflect counted peak hour truck percentages as illustrated in the peak hour turning movement counts (ref. **Appendix J**).

As illustrated in the FDOT 2019 Annual Average Daily Traffic Report, Site 0170 and Site 4641, a T factor of 4.8% is associated with Old 41 Rd (CR 887), north of Bonita Beach Rd, and a T factor of 3.4% is associated with Shangri-La Rd, east of Old 41 Rd. Refer to **Appendix M: Synchro Analysis Support.**

The percent heavy vehicle utilized in all 2025 peak hour intersection analyses are as follow: 5% for Old 41 Rd; 4% for Shangri-La Rd; and 2% for Imperial Harbor Blvd, Cockleshell Dr and Paradise Rd.

Peak Hour Factor (PHF) – PHF is the ratio of the hourly volume to the peak 15-minute flow rate for that hour. As illustrated in **Appendix J**, the raw intersection turning movement counts provide the existing PHF value for each intersection.

In Section 5.5, Peak Hour Factor (PHF) on page 26 of the 2020 Quality/Level of Service Handbook, FDOT acknowledges that a planning-level approach has been adopted for this Handbook. The FDOT PHF associated with transitioning/urban areas is 0.92. As such, this report utilizes a minimum PHF of 0.92 for all future year analyses.

Synchro intersection worksheets are provided in **Appendix N: Intersection Analyses – Synchro Reports**.

Based on the results illustrated in **Appendix N**, the LOS for AM and PM peak hour traffic conditions is summarized in **Table 8**.

The analyzed intersections are expected to operate at acceptable level of service under future 2025 peak season traffic conditions with or without the project traffic.

Table 8
Intersection Capacity Analysis – Level of Service

Intersection	Level of Service Peak Hour	
	AM	PM
Year 2025 Background Traffic without Project		
Shangri-La Rd and Paradise Rd (1)	**B**	**B**
Shangri-La Rd and Cockleshell Dr (2)	**B**	**B**
Old 41 Rd and Shangri-La Rd (3)	**C / C**	**C / B**
Year 2025 Background Traffic with Project		
Shangri-La Rd and Paradise Rd (1)	**C**	**C**
Shangri-La Rd and Cockleshell Dr (2)	**B**	**B**
Old 41 Rd and Shangri-La Rd (3)	**C / C**	**C / B**
Year 2025 Background Traffic with Project with Improvements		
Shangri-La Rd and Paradise Rd (1)	**B**	**C**

Note(s): (1) Intersection LOS reported – HCM 6 method; AWSC – All Way Stop Control.
(2) Southbound Approach LOS reported – HCM 6 method; TWSC – Two Way Stop Control.
(3) Intersection LOS reported – HCM 6 method / Synchro method - Signal.

Intersection Turn Lane Improvements – Turn Lane Lengths

As previously illustrated in this report, an exclusive southbound right-turn lane is recommended at Shangri-La Rd and Paradise Rd intersection.

Consistent with the FDOT 2021 FDM, Chapter 212, Exhibit 212-1, design speed of 35 mph – urban conditions – the minimum turn lane length is 145 feet (deceleration length which includes a 50 foot taper) plus required queue.

Required queue is determined based on HCM 6 – 95th percentile queue. In addition, a minimum 50 feet of storage is considered. As illustrated in **Appendix N**, the southbound turn lane storage needs at year 2025 background traffic conditions with project is 50 feet.

Based on these considerations, a dedicated southbound right-turn lane is recommended to be 195 feet long (145 foot deceleration lane with taper and 50 feet of storage).

Improvement Analysis

Based on the link analysis presented in this report, there is adequate and sufficient roadway capacity on all analyzed roadway links to accommodate the proposed development at 2025 build-out conditions.

Turn lane improvements are warranted at the proposed North Parcel main access located on Paradise Road. The proposed roundabout is adequate to accommodate projected traffic at this location.

Based on the intersection turn lane warrant analyses, a dedicated 195 foot southbound right-turn lane is recommended at the Shangri-La Rd and Paradise Rd intersection.

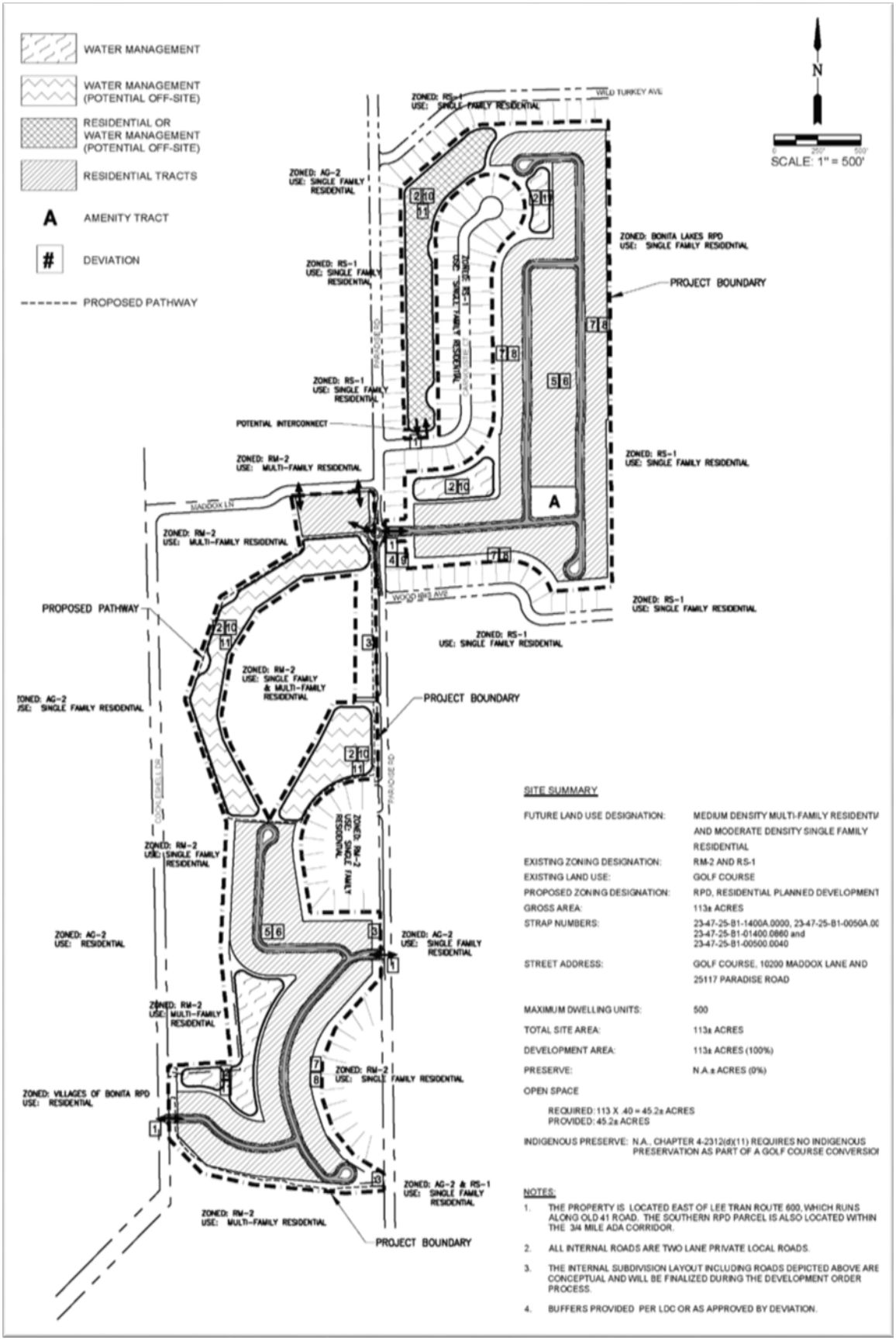
The analyzed intersections are expected to operate at acceptable level of service under future 2025 peak season traffic conditions with or without the project traffic.

Mitigation of Impact

The developer proposes to pay the appropriate City of Bonita Springs transportation impact fees, as applicable, as building permits are issued for the project.

Appendix A:

Project Master Site Plan


WATER MANAGEMENT
WATER MANAGEMENT (POTENTIAL OFF-SITE)
RESIDENTIAL OR WATER MANAGEMENT (POTENTIAL OFF-SITE)
RESIDENTIAL TRACTS
A AMENITY TRACT
DEVIATION
PROPOSED PATHWAY
N
SCALE: 1" = 500'
ZONED: RS-1 USE: SINGLE FAMILY RESIDENTIAL
WILD TURKEY AVE
ZONED: AG-2 USE: SINGLE FAMILY RESIDENTIAL
ZONED: BONITA LAKES RPD USE: SINGLE FAMILY RESIDENTIAL
PROJECT BOUNDARY
PARADISE RD
POTENTIAL INTERCONNECT
ZONED: RM-2 USE: MULTI-FAMILY RESIDENTIAL
MADDOX LN
WOOD BIRD AVE
PROPOSED PATHWAY
ZONED: RM-2 USE: SINGLE FAMILY & MULTI-FAMILY RESIDENTIAL
ZONED: AG-2 USE: SINGLE FAMILY RESIDENTIAL
GOLF DRIVE
ZONED: AG-2 USE: RESIDENTIAL
ZONED: VILLAGES OF BONITA RPD USE: RESIDENTIAL
ZONED: AG-2 & RS-1 USE: SINGLE FAMILY RESIDENTIAL
SITE SUMMARY
FUTURE LAND USE DESIGNATION: MEDIUM DENSITY MULTI-FAMILY RESIDENTIAL AND MODERATE DENSITY SINGLE FAMILY RESIDENTIAL
EXISTING ZONING DESIGNATION: RM-2 AND RS-1
EXISTING LAND USE: GOLF COURSE
PROPOSED ZONING DESIGNATION: RPD, RESIDENTIAL PLANNED DEVELOPMENT
GROSS AREA: 113± ACRES
STRAP NUMBERS: 23-47-25-B1-1400A.0000, 23-47-25-B1-0050A.00 23-47-25-B1-01400.0860 and 23-47-25-B1-00500.0040
STREET ADDRESS: GOLF COURSE, 10200 MADDOX LANE AND 25117 PARADISE ROAD
MAXIMUM DWELLING UNITS: 500
TOTAL SITE AREA: 113± ACRES
DEVELOPMENT AREA: 113± ACRES (100%)
PRESERVE: N.A.± ACRES (0%)
OPEN SPACE
REQUIRED: 113 X .40 = 45.2± ACRES
PROVIDED: 45.2± ACRES
INDIGENOUS PRESERVE: N.A., CHAPTER 4-2312(d)(11) REQUIRES NO INDIGENOUS PRESERVATION AS PART OF A GOLF COURSE CONVERSIO
NOTES:
1. THE PROPERTY IS LOCATED EAST OF LEE TRAN ROUTE 600, WHICH RUNS ALONG OLD 41 ROAD. THE SOUTHERN RPD PARCEL IS ALSO LOCATED WITHIN THE 3/4 MILE ADA CORRIDOR.
2. ALL INTERNAL ROADS ARE TWO LANE PRIVATE LOCAL ROADS.
3. THE INTERNAL SUBDIVISION LAYOUT INCLUDING ROADS DEPICTED ABOVE ARE CONCEPTUAL AND WILL BE FINALIZED DURING THE DEVELOPMENT ORDER PROCESS.
4. BUFFERS PROVIDED PER LDC OR AS APPROVED BY DEVIATION.

Appendix B:

Initial Meeting Checklist (Methodology)

METHODOLOGY - INITIAL MEETING CHECKLIST

Date: March 9, 2021 Time: N/A

Location: N/A – Via Email

People Attending:
Name, Organization, and Telephone Numbers

1) Tom Ross, City of Bonita Springs Transportation Review
2) Norman Trebilcock, TCS
3) Ciprian Malaescu, TCS

Study Preparer:
Preparer's Name and Title: Norman Trebilcock, AICP, PTOE, PE
Organization: Trebilcock Consulting Solutions, PA
Address & Telephone Number: 2800 Davis Boulevard, Suite 200, Naples, Fl 34104; ph 239-566-9551

Reviewer(s):
Reviewer's Name & Title: Tom Ross, PE
Address: 225 East Robinson St., Suite 505, Orlando, FL 32801
Telephone Number: 407-423-0030

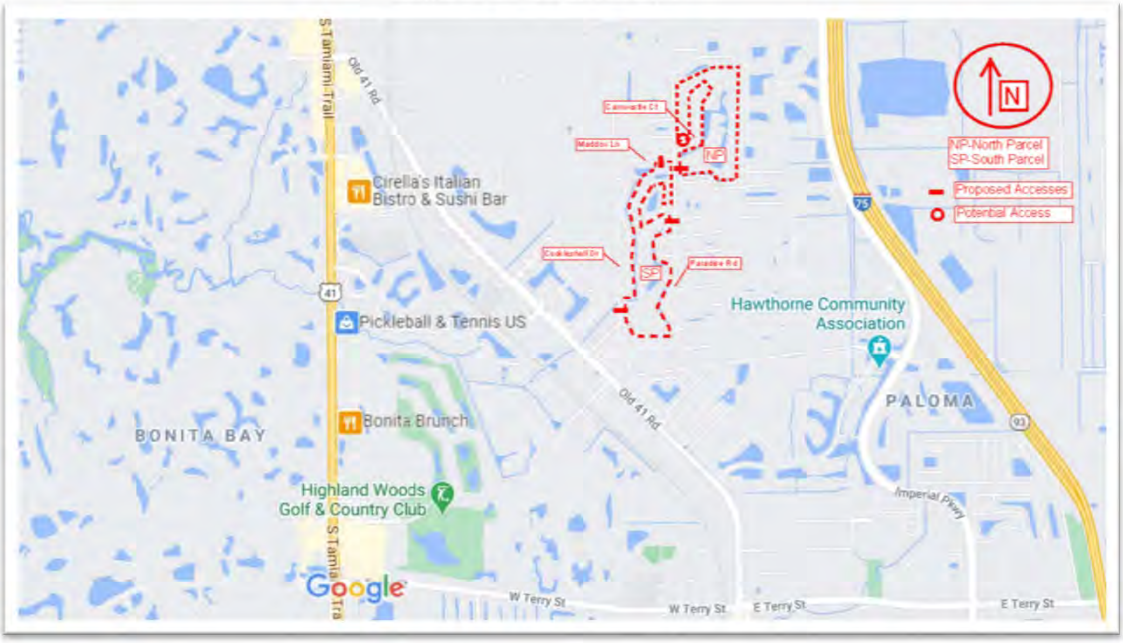
Applicant:
Applicant's Name: Peninsula Engineering
Address: 2600 Golden Gate Parkway, Naples, FL 34105
Telephone Number: 239-403-6700

Proposed Development:
Name: Bonita Springs Golf Course – Rezone
Location: East of Cockleshell Drive, south of Maddox Lane and east of Paradise Road, south of Wild Turkey Avenue, Bonita Springs, FL – refer to **Figure 1** on next page
ITE Land Use Type: Single-Family Detached Housing
ITE Code #: Land Use Code (LUC) 210
Description:
The project proposes to allow for a new Residential Planned Development (RPD) to consist of a mix of single-family and multi-family dwelling units (du) in 2 parcels: North Parcel and South Parcel.

Page **1** of **5**

Zoning:
Existing: RS-1 and RM-2
Comprehensive plan recommendation: N/A
Requested: Zoning change to RPD

Figure 1 – Location Map



Findings of the Preliminary Study:
TIS will satisfy City of Bonita Springs TIS Guidelines requirements (Resolution #17-76).
Trip Generation – ITE 10th Edition – OTISS. Traffic generation illustrates buildout conditions with traffic assigned to each parcel based on the number of units.
No internal capture or pass-by traffic reduction are considered for this project.
Project Traffic Distribution, Link Assignment – AM and PM peak hour traffic
Significance Test – based on 2% or 3% threshold, as applicable.
Level of Service (LOS) analyses will be performed for existing, background and proposed (background with project traffic) conditions for AM and PM peak hour periods.
TIS will provides LOS analysis of the nearest arterial or collector streets to which the proposed project will discharge its traffic. The LOS evaluation is based on the most current Lee County Generalized Level of Service Thresholds.
Background traffic will reflect peak season, peak hour, peak direction values (100th Highest Hour Directional Volume). TIS will utilize traffic counts provided in the 2020 City of Bonita Springs Traffic Count Report.

Growth rates will be used in lieu of vested or reserved trips.
K and D factors will be calculated based on the data illustrated in the 2020 City of Bonita Springs Traffic Count Report.
Turning Movement Counts in 15 min intervals – 1 mid-weekday – AM (7-9 AM) and PM (4-6 PM) for the following locations: Old 41 Rd at Shangri-La Rd, Shangri-La Rd at Cockleshell Dr, and Shangri-La Rd at Paradise Rd. Traffic counts will reflect 2021 peak season conditions.
Report will provide capacity analyses for the above mentioned intersections for both AM and PM peak hours based on the following scenarios: existing 2021 peak season conditions; future 2025 peak season conditions without and with proposed project.
Turn lane warrant analyses for the 3 intersections and project access points – AM-PM peak hours – based on Lee County Turn Lane Policy AC 11-4.
Paradise Rd and Cockleshell Dr are 2 lane roadways with a posted speed limit of 30 mph and are under the jurisdiction of the City of Bonita Springs.
Based on the City of Bonita Springs Transportation Element (Figure 1 – Future Road System Functional Classification), the analyzed roadways are classified as follows: Paradise Road – local roadway, Cockleshell Drive and Shangri-La Road – minor collectors and Old 41 Road – major arterial.

Study Area:
Roadway Links: Old 41 Road, Shangrila Road
Additional intersections to be analyzed: N/A
Build Out Year: 2024
Horizon Year: 2025
Analysis Time Period(s): AM/PM peak hour
Future Off-Site Developments: to be determined
Source of Trip Generation Rates: ITE Trip Generation Manual (TGM) 10th Edition – OTISS software

Reductions in Trip Generation Rates:
None: N/A
Pass-by trips: Based on ITE recommendations and City of Bonita Springs TIS Guidelines
Internal trips: Based on ITE recommendations and City of Bonita Springs TIS Guidelines
Transit use: N/A

Horizon Year Roadway Network Improvements: 2025

Methodology & Assumptions:
Non-site traffic estimates: City of Bonita Springs 2020 Traffic Count Report
Site-trip generation: ITE TGM 10th Edition - LUC 210
Trip distribution - assignment method: Engineer's Estimate – Refer to **Figure 2**
Traffic site access: Refer to **Figure 3**
Traffic growth rate: growth rate 2% minimum or historical traffic count data as contained within Bonita Springs Traffic Count Report, as applicable.

Figure 2 – Project Trip Distribution Map by Percentage

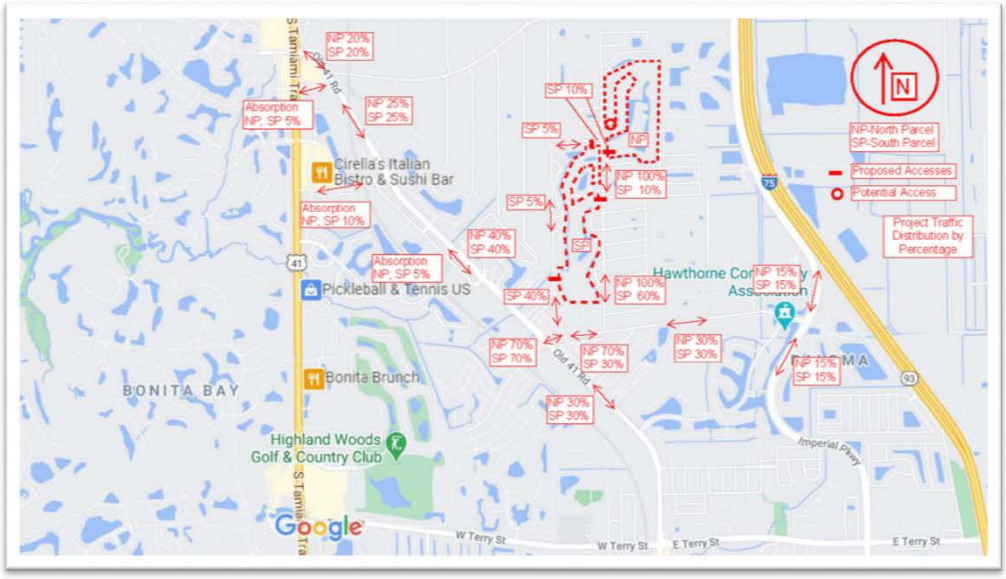
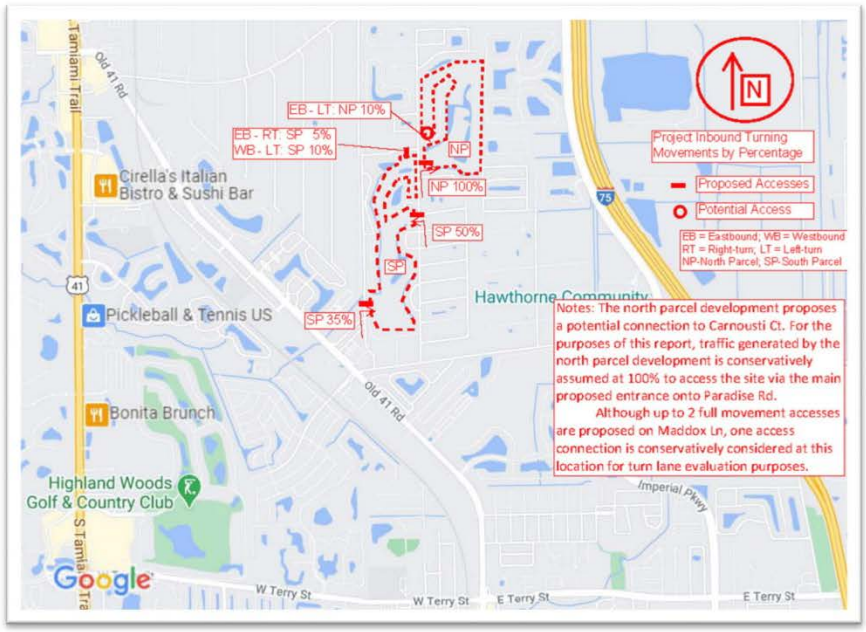


Figure 3 – Project Turning Movements Map by Percentage



Special Features: (from preliminary study or prior experience)
Accidents locations: N/A
Sight distance: N/A
Queuing: to be determined
Access location & configuration: N/A
Traffic control: MUTCD
Signal system location & progression needs: N/A
On-site parking needs: N/A
Data Sources: ITE TGM 10th Edition – OTISS Software
Base maps: N/A
Prior study reports: N/A
Access policy and jurisdiction: N/A
Review process: N/A
Requirements: N/A
Miscellaneous: N/A

SIGNATURES

Norman Trebilcock

Study Preparer—Norman Trebilcock

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Appendix C:

ITE Trip Generation Calculations

ITE Trip Generation Manual 10th Edition – Land Use Description

Land Use: 210
Single-Family Detached Housing

Description

Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

Additional Data

The number of vehicles and residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it was usually readily available, easy to project, and had a high correlation with average weekday vehicle trip ends.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Single-family detached units had the highest trip generation rate per dwelling unit of all residential uses because they were the largest units in size and had more residents and more vehicles per unit than other residential land uses; they were generally located farther away from shopping centers, employment areas, and other trip attractors than other residential land uses; and they generally had fewer alternative modes of transportation available because they were typically not as concentrated as other residential land uses.

Time-of-day distribution data for this land use are presented in Appendix A. For the six general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:00 and 5:00 p.m., respectively. For the two sites with Saturday data, the overall highest vehicle volume was counted between 3:00 and 4:00 p.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 10:15 and 11:15 a.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Delaware, Illinois, Indiana, Maryland, Minnesota, Montana, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, and Virginia.

Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 903, 925, 936

Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels (floors). Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), and off-campus student apartment (Land Use 225) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the low-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:45 and 5:45 p.m., respectively. For the one site with Saturday data, the overall highest vehicle volume was counted between 9:45 and 10:45 a.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 11:45 a.m. and 12:45 p.m.

For the one dense multi-use urban site with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 6:15 and 7:15 p.m., respectively.

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

The average numbers of person trips per vehicle trip at the five general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.13 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.21 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, District of Columbia, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Minnesota, New Jersey, New York, Ontario, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington.

It is expected that the number of bedrooms and number of residents are likely correlated to the number of trips generated by a residential site. Many of the studies included in this land use did not indicate the total number of bedrooms. To assist in the future analysis of this land use, it is important that this information be collected and included in trip generation data submissions.

Source Numbers

168, 187, 188, 204, 211, 300, 305, 306, 319, 320, 321, 357, 390, 412, 418, 525, 530, 571, 579, 583, 864, 868, 869, 870, 896, 903, 918, 946, 947, 948, 951

Proposed Buildout Conditions – ITE 10th Edition

Project Information	
Project Name:	Bonita Springs Golf Course - Proposed
Date:	3/1/2021
Edition:	Trip Gen Manual, 10th Ed + Supplement

North Parcel - 230 SF du;
e.g. PM Enter - 141
South Parcel 70 SF du + 200 MF du;
e.g. PM Enter - 112

Land Use	Size	Daily		AM Peak		PM Peak	
		Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing (General Urban/Suburban)	300 Dwelling Units	1429	1428	55	163	184	108
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		0	0	0	0	0	0
Non-pass-by		1429	1428	55	163	184	108
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	200 Dwelling Units	736	735	21	71	69	40
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		0	0	0	0	0	0
Non-pass-by		736	735	21	71	69	40
Total		2165	2163	76	234	253	148
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		0	0	0	0	0	0
Total Non-pass-by		2165	2163	76	234	253	148

PERIOD SETTING

Analysis Name :	Daily		
Project Name :	Bonita Springs Golf Course - Proposed	**No :**	
Date:	3/1/2021	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Gen Manual, 10th Ed + Supplement

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing (General Urban/Suburban)	Dwelling Units	300	Weekday	Best Fit (LOG) Ln(T) = 0.92Ln(X) +2.71	1429 50%	1428 50%	2857
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	200	Weekday	Best Fit (LIN) T = 7.56 (X)+-40.86	736 50%	735 50%	1471

PERIOD SETTING

Analysis Name :	AM Peak Hour		
Project Name :	Bonita Springs Golf Course - Proposed	**No :**	
Date:	3/1/2021	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Gen Manual, 10th Ed + Supplement

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing (General Urban/Suburban)	Dwelling Units	300	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) T = 0.71 (X)+4.8	55 25%	163 75%	218
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	200	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LOG) Ln(T) = 0.95Ln(X) +-0.51	21 23%	71 77%	92

PERIOD SETTING

Analysis Name :	PM Peak Hour		
Project Name :	Bonita Springs Golf Course - Proposed	**No :**	
Date:	3/1/2021	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Gen Manual, 10th Ed + Supplement

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing (General Urban/Suburban)	Dwelling Units	300	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.96Ln(X) +0.2	184 63%	108 37%	292
220 - Multifamily Housing (Low-Rise) (General Urban/Suburban)	Dwelling Units	200	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.89Ln(X) +-0.02	69 63%	40 37%	109

Appendix D:

Bonita Springs 2020 Traffic Count Data (Excerpts)

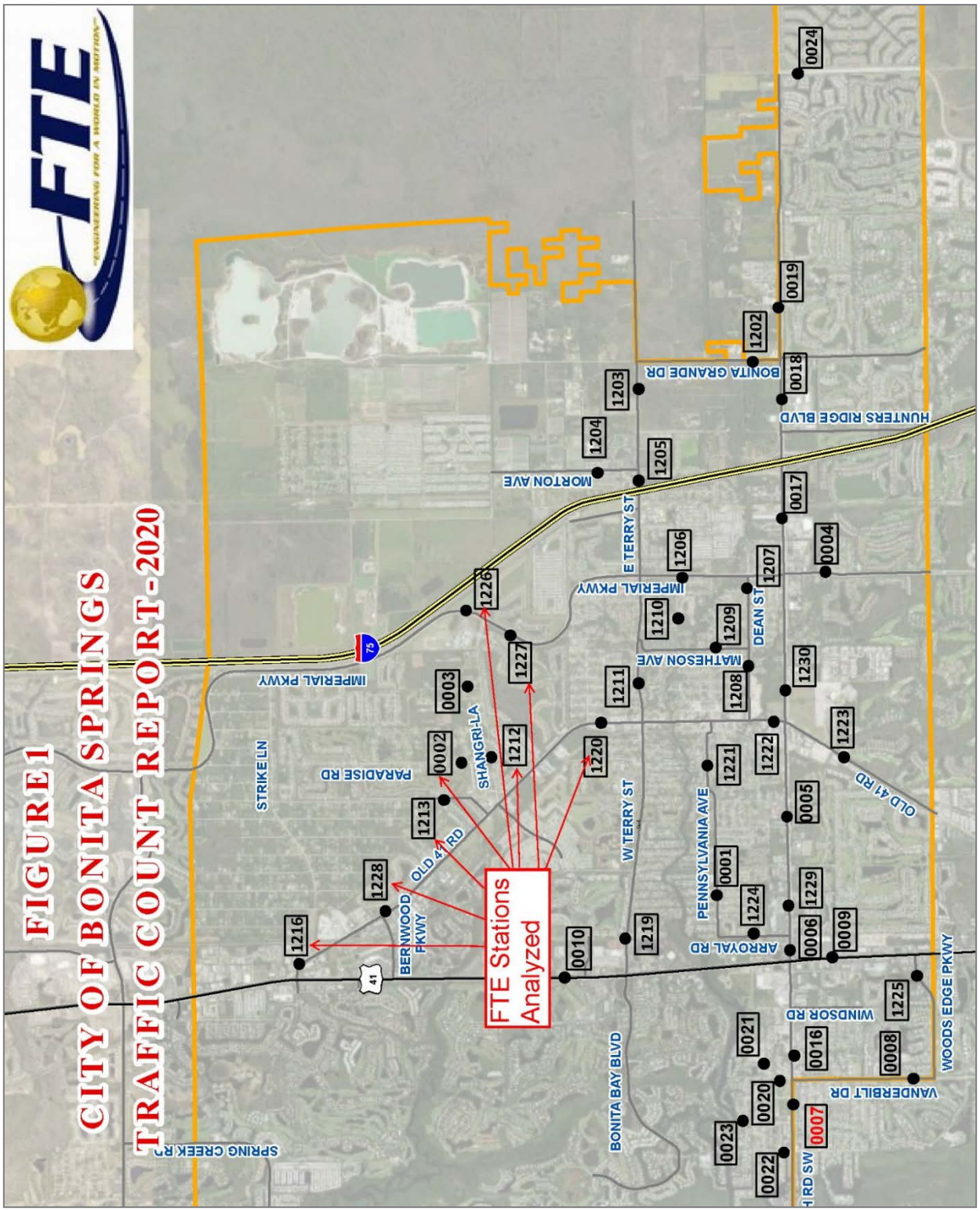
FIGURE1
CITY OF BONITA SPRINGS
TRAFFIC COUNT REPORT-2020
FTE Stations Analyzed
IMPERIAL PKWY
STRIKE LN
PARADISE RD
SHANGRI-LA
OLD 41 RD
BERNWOOD FKWY
W TERRY ST
E TERRY ST
MORTON AVE
IMPERIAL PKWY
MATHESON AVE
DEAN ST
BONITA GRANDE DR
HUNTERS RIDGE BLVD
PENNSYLVANIA AVE
ARROYAL RD
OLD 41 RD
WINDSOR RD
WOODS EDGE PKWY
VANDERBILT DR
BONITA BAY BLVD
SPRING CREEK RD
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TABLE 1 2020 TRAFFIC COUNT SUMMARY
CITY OF BONITA SPRINGS, FL

FTE Station Number	Reference Lee County Station Number	Location	Start Date	Direction 1 and 2	3 Day Average Direction 1	3 Day Average Direction 2	ADT Direction 1 and 2	FDOT Seasonal Factor	AADT Direction 1 and 2	K Factor from Lee County	D Factor from Lee County	Peak Hour Two-way Service Volumes	Level Of Service (LOS)	Lee County PCS
1224	496	Arroyal Rd N of Bonita Beach Rd	3-Mar-20	N/S	3020	3741	6761	0.93	6300	10%	51%	630	D	42
0005	N/A	Bonita Beach Rd between Wisconsin & Michigan St	3-Mar-20	E/W	16672	16945	33617	0.93	31300	10%	51%	3130	C	42
0016	7	Bonita Beach Rd E. of Vandebilt Dr	3-Mar-20	E/W	15765	15884	31649	0.93	29400	12%	57%	3528	E	7
1229	221	Bonita Beach Rd East of Arroyal Rd	3-Mar-20	E/W	18264	19892	38156	0.93	35500	10%	51%	3550	C	42
0006	N/A	Bonita Beach Rd W. of Arroyal Rd	3-Mar-20	E/W	19345	18228	37573	0.93	34900	11%	60%	3839	C	92
1230	N/A	Bonita Beach W of Race Track Rd	3-Mar-20	E/W	22698	22023	44721	0.93	41600	10%	51%	4160	C	42
0012**	N/A	Bonita Beach Rd E. of Barefoot Blvd	3-Mar-20	E/W	12329	12339	24668	0.93	22900	12%	57%	2748	C	7
0007**	N/A	Bonita Beach Rd W. of Vanderbilt Dr	3-Mar-20	E/W	15434	15287	30721	0.93	28600	12%	57%	3432	D	7
1202	519	Bonita Grande Dr N of Bonita Beach Rd	3-Mar-20	N/S	4937	4833	9770	0.93	9100	10%	51%	910	D	42
1213	N/A	Cockleshell Dr N of Shangri-La Rd	3-Mar-20	N/S	1408	1004	2412	0.93	2200	11%	62%	242	C	16
1207	N/A	Dean St E of Lime St	3-Mar-20	E/W	1905	1886	3791	0.93	3500	10%	51%	350	C	42
1208	N/A	Dean St W of Matheson Ave	3-Mar-20	E/W	1204	1636	2840	0.93	2600	10%	51%	260	C	42
1205	N/A	E Terry St E of I-75	3-Mar-20	E/W	5911	6137	12048	0.93	11200	10%	51%	1120	D	42
1211	271	E Terry St E of Old 41 Rd	3-Mar-20	E/W	8268	9720	17988	0.93	16700	10%	51%	1670	C	42
1203	N/A	E Terry St W of Bonita Grande Dr	3-Mar-20	E/W	4120	4382	8502	0.93	7900	10%	51%	790	D	42
0013**	N/A	Estero Blvd N. of Hickory Blvd	3-Mar-20	N/S	5635	5776	11411	0.93	10600	10%	69%	1060	D	44
0015**	N/A	Estero Blvd N. of Lovers Key State Park	3-Mar-20	N/S	5196	5235	10431	0.93	9700	10%	69%	970	C	44
0014**	N/A	Estero Blvd S. of Lovers Key State Park	3-Mar-20	N/S	5420	5486	10906	0.93	10100	10%	69%	1010	C	44
1206	N/A	Imperial Pkwy Between Bonita Beach Rd and E Terry St	3-Mar-20	N/S	13637	13212	26849	0.93	25000	14%	61%	3500	C	63
1226	N/A	Imperial Pkwy N/O Shangri-LA	3-Mar-20	N/S	10034	9892	19926	0.93	18500	14%	61%	2590	C	63
0004	N/A	Imperial Pkwy S. of Tropic Dr	3-Mar-20	N/S	12526	12270	24796	0.93	23100	14%	61%	3234	C	63
1227	N/A	Imperial Pkwy S/O Shangri-LA	3-Mar-20	N/S	11013	10455	21468	0.93	20000	14%	61%	2800	C	63
1209	N/A	Matheson Ave N of Dean St	3-Mar-20	N/S	1097	1034	2131	0.93	2000	10%	51%	200	C	42

FTE Station Number	Reference Lee County Station Number	Location	Start Date	Direction 1 and 2	3 Day Average Direction 1	3 Day Average Direction 2	ADT Direction 1 and 2	FDOT Seasonal Factor	AADT Direction 1 and 2	K Factor from Lee County	D Factor from Lee County	Peak Hour Two-way Service Volumes	Level Of Service (LOS)	Lee County PCS
1204	N/A	Morton Ave N of East Terry St	3-Mar-20	N/S	3568	3553	7121	0.93	6600	10%	51%	660	D	42
1223	N/A	Old 41 Rd Between Collier County Line to Bonita Beach Rd	3-Mar-20	N/S	9861	9002	18863	0.93	17500	11%	62%	1925	F	16
1222	N/A	Old 41 Rd N of Bonita Beach Rd	3-Mar-20	N/S	6356	6930	13286	0.93	12400	11%	62%	1364	D	16
1220	N/A	Old 41 Rd N of E/W Terry St	3-Mar-20	N/S	11404	12222	23626	0.93	22000	11%	62%	2420	D	16
1216	N/A	Old 41 Rd S of US 41	3-Mar-20	N/S	8750	6514	15264	0.93	14200	11%	62%	1562	C	16
1228	N/A	Old 41 S/O Bernwood Pkwy	3-Mar-20	N/S	8705	8843	17548	0.93	16300	11%	62%	1793	C	16
0002	N/A	Paradise Rd N. of Shangri-La	3-Mar-20	N/S	1971	1885	3856	0.93	3600	14%	61%	504	C	63
0001	N/A	Pennsylvania Ave E. of Los Amigos Lane	3-Mar-20	E/W	1866	2027	3893	0.93	3600	11%	60%	396	C	92
1221	494	Pennsylvania Ave W of Old 41 Rd	3-Mar-20	E/W	2488	3893	6381	0.93	5900	10%	51%	590	C	42
0003	N/A	Tropical Acers Dr N. of Shangri-La	3-Mar-20	N/S	282	264	546	0.93	500	14%	61%	70	C	63
1212	N/A	Shangri-La Rd E of Old US 41	3-Mar-20	E/W	4163	3857	8020	0.93	7500	11%	62%	825	C	16
0010	N/A	US-41, N. of Shopping Center Entrance	3-Mar-20	N/S	27417	26943	54360	0.93	50600	10%	63%	5060	C	93
0009	N/A	US-41, S. of Beaumont Rd	3-Mar-20	N/S	21394	22829	44223	0.93	41100	11%	60%	4521	F	92
0008	N/A	Vanderbilt Dr N. of Woods Edge Pkwy	3-Mar-20	N/S	5445	5518	10963	0.93	10200	12%	57%	1224	C	7
1219	N/A	W Terry St E of US 41	3-Mar-20	E/W	6982	7108	14090	0.93	13100	10%	51%	1310	C	42
1225	N/A	Woods Edge Pkwy W of US 41	3-Mar-20	E/W	3245	2751	5996	0.93	5600	11%	63%	616	C	23
1210	N/A	Longfellow Ln W of Imperial Pkwy	3-Mar-20	E/W	338	287	625	0.93	600	10%	51%	60		42
0017	N/A	Bonita Beach Rd between Imperial Parkway and I-75	3-Mar-20	E/W	25240	24914	50154	0.93	46600	10%	51%	4660	C	42
0018	N/A	Bonita Beach Rd between Hunters Ridge Blvd and Bonita Grande Dr	3-Mar-20	E/W	11795	12404	24199	0.93	22500	10%	51%	2250	C	42
0019	N/A	Bonita Beach Rd E. of Bonita Grande Dr	3-Mar-20	E/W	9804	10432	20236	0.93	18800	10%	51%	1880	C	42
0020	N/A	Luke St between Kens Way and Bonita Beach Rd	3-Mar-20	N/S	396	604	1000	0.93	900	12%	57%	108	C	7
0021	N/A	Quails Walk E. of Luke St	3-Mar-20	E/W	294	251	545	0.93	500	12%	57%	60	C	7
0022	N/A	Imperial Shores Blvd S. of Vanda Dr	3-Mar-20	N/S	1180	1223	2403	0.93	2200	12%	57%	264		7
0023	N/A	Tarpon Avenue E. of Sherry Ln	3-Mar-20	E/W	396	361	757	0.93	700	12%	57%	84		7
0024	N/A	Logan Blvd S. of Bonita Beach Rd	3-Mar-20	N/S	2542	2051	4593	0.93	4300	10%	51%	430		42

** Collected weekend counts also.

TABLE 2 HISTORIC TRAFFIC COUNT SUMMARY
CITY OF BONITA SPRINGS, FL

FTE Station Number	Reference Lee County Station Number	Location	Obtained from the Lee County Traffic Count Report 2012						Counts performed by FTE or obtained from Lee County									
			2003	2004	2005	2006	2007	2008	Dec-09	Dec-10	Feb-12	Jan-14	Feb-15	Feb-16	March-17	March-18	April-19	March-20
1224	0496	Arroyal Rd N of Bonita Beach Rd	5000	6200	6500	6400	5300	4700	6000	5600	5000	5900	5500	6300	6100	6300	6700	6300
0005	N/A	Bonita Beach Rd between Wisconsin & Michigan St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28500	26700	30500	31300
0016	0007	Bonita Beach Rd E. of Vandebilt Dr	N/A	N/A	N/A	N/A	U/C	23400	24800	23000	23500	24600	25700	25900	30300	25300	28600	29400
1229	0221	Bonita Beach Rd East of Arroyal Rd	N/A	27000	25200	25600	26300	26300	22900	23600	N/A	N/A	N/A	32300	31100	28800	32800	35500
0006	N/A	Bonita Beach Rd W. of Arroyal Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30700	30500	34500	34900
1230	N/A	Bonita Beach W of Race Track Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37500	36100	34900	41000	41600
0012**	N/A	Bonita Beach Rd E. of Barefoot Blvd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19400	19000	21300	22900
0007**	N/A	Bonita Beach Rd W. of Vandebilt Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25300	24200	26800	28600
1202	0519	Bonita Grande Dr N of Bonita Beach Rd	5400	7400	7100	8200	6800	5300	5300	5600	6100	5500	6200	6600	6300	7200	7900	9100
1213	N/A	Cockleshell Dr N of Shangri-La Rd	N/A	N/A	N/A	N/A	N/A	N/A	1900	1900	2300	1700	1900	3900	3700	2100	1600	2200
1207	N/A	Dean St E of Lime St	N/A	N/A	N/A	N/A	N/A	N/A	3400	3100	3200	2800	2700	3000	2900	2600	3400	3500
1208	N/A	Dean St W of Matheson Ave	N/A	N/A	N/A	N/A	N/A	N/A	2800	2300	2400	2000	2000	2500	2400	2100	2600	2600
1205	N/A	E Terry St E of I-75	N/A	N/A	N/A	N/A	N/A	N/A	8100	7900	7900	7800	8100	9000	8600	8700	10100	11200
1211	0271	E Terry St E of Old 41 Rd	9900	12000	13800	U/C	10000	13000	14400	14300	14800	13400	12700	14800	14200	13200	15700	16700
1203	N/A	E Terry St W of Bonita Grande Dr	N/A	N/A	N/A	N/A	N/A	N/A	4600	4500	4600	4400	4500	5600	5400	5700	6900	7900
0013**	N/A	Estero Blvd N. of Hickory Blvd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9100	9300	10000	10600
0015**	N/A	Estero Blvd N. of Lovers Key State Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8600	9000	9600	9700
0014**	N/A	Estero Blvd S. of Lovers Key State Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8800	9100	9700	10100
1206	N/A	Imperial Pkwy Between Bonita Beach Rd and E Terry St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16300	17400	19600	20600	23300	21100	23300	27400	25000
1226	N/A	Imperial Pkwy N/O Shangri-LA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13000	15900	15300	15700	19900	18500
0004	N/A	Imperial Pkwy S. of Tropic Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20200	20500	25100	23100
1227	N/A	Imperial Pkwy S/O Shangri-LA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13800	17200	16600	18000	21400	20000
1209	N/A	Matheson Ave N of Dean St	N/A	N/A	N/A	N/A	N/A	N/A	1900	1700	1500	1800	1500	2100	2100	1600	2000	2000
1204	N/A	Morton Ave N of East Terry St	N/A	N/A	N/A	N/A	N/A	N/A	5800	5400	5700	5300	5300	5900	5700	5600	6600	6600
1223	N/A	Old 41 Rd Between Collier County Line to Bonita Beach Rd	12600	13700	14000	14000	13000	11600	N/A	15200	14600	14100	14900	14700	14200	15200	17600	17500
1222	N/A	Old 41 Rd N of Bonita Beach Rd	16500	18500	17600	17400	18300	13200	15400	15000	14700	13500	13100	9000	8700	10500	12200	12400
1220	N/A	Old 41 Rd N of E/W Terry St	22000	24600	26300	26700	23500	19900	23800	23700	28300	25200	20700	18400	17700	19000	11900	22000
1216	N/A	Old 41 Rd S of US 41	13000	14200	15000	16000	13200	N/A	12000	12500	12200	12100	12000	11900	11500	11800	13500	14200
1228	N/A	Old 41 S/O Bernwood Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13600	13900	13300	13700	15700	16300
0002	N/A	Paradise Rd N. of Shangri-La	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2500	2900	3500	3600

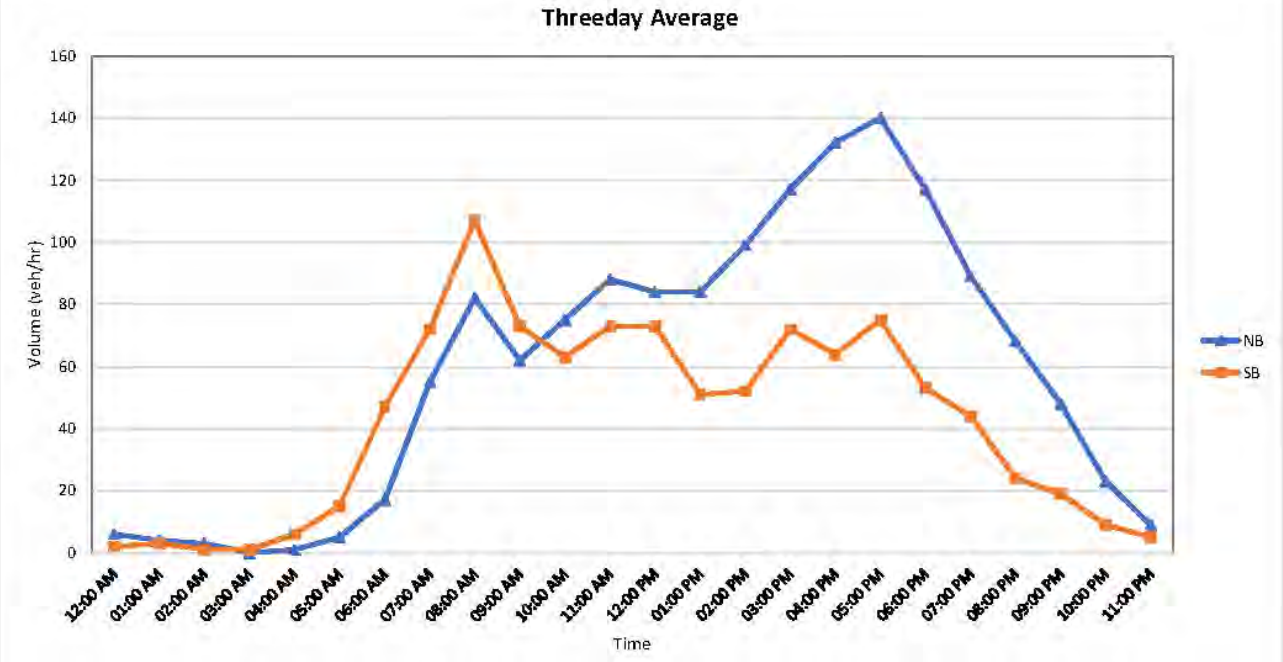
FTE Station Number	Reference Lee County Station Number	Location	Obtained from the Lee County Traffic Count Report 2012						Counts preformed by FTE or obtained from Lee County								
			2003	2004	2005	2006	2007	2008	Dec-09	Dec-10	Feb-12	Jan-14	Feb-15	Feb-16	March-17	March-18	April-19	March-20
0001	N/A	Pennsylvania Ave E. of Los Amigos Lane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3100	3500	4200	3600
1221	0494	Pennsylvania Ave W of Old 41 Rd	4100	4000	4900	4500	4300	3000	6300	6400	6000	5600	4400	3400	3300	4300	4800	5900
0003	N/A	Tropical Acres Dr N. of Shangri-La	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	400	500	500
1212	N/A	Shangri-La Rd E of Old US 41	N/A	N/A	N/A	N/A	N/A	N/A	5000	5100	5100	4900	4600	5800	5600	6300	7100	7300
0010	N/A	US-41, N. of Shopping Center Entrance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	49200	45600	54200	50600
0009	N/A	US-41, S. of Beaumont Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35600	35500	44000	41100
0008	N/A	Vanderbilt Dr N. of Woods Edge Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6900	8400	9500	10200
1219	N/A	W Terry St E of US 41	13300	12000	11400	12200	12200	11600	12700	12800	13900	11000	12400	13300	12800	11700	12700	13100
1225	N/A	Woods Edge Pkwy W of US 41	N/A	N/A	N/A	N/A	N/A	N/A	4500	5000	3900	5300	4200	4500	4400	4100	5100	5600
1210	N/A	Longfellow Ln W of Imperial Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	500	300	300	200	U/C	600	500	N/A	800	600
0017	N/A	Bonita Beach Rd between Imperial Parkway and I-75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3700	30300	46600
0018	N/A	Lake St between Kane Way and Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18300	21400	22500
0019	N/A	Bonita Beach Rd E. of Bonita Grande Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9700	15900	18800
0020	N/A	Lake St between Kane Way and Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	900	800	900
0021	N/A	Quails Walk E. of Lake St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	500	400	500
0022	N/A	Imperial Shore Blvd S. of Vanda Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2200	2200
0023	N/A	Tarpon Avenue E. of Cherry Ln	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	800	700
0024	N/A	Logan Blvd S. of Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4300

** Collected weekend counts also

1213-Cockleshell Dr N of Shangri-La Rd
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

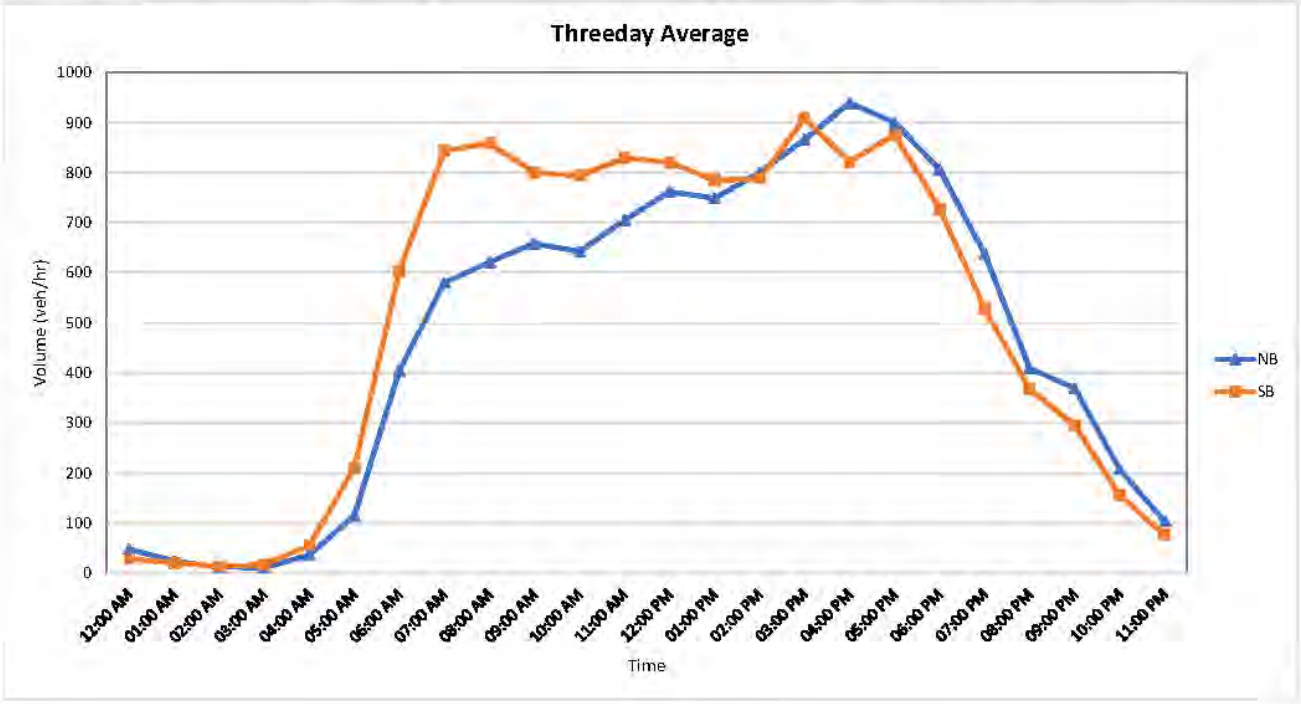
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	4	0	5	1	9	5	6	2
01:00 AM	1	1	5	4	5	3	4	3
02:00 AM	1	1	3	1	4	2	3	1
03:00 AM	0	0	0	1	1	1	0	1
04:00 AM	1	8	0	5	2	6	1	6
05:00 AM	4	15	6	15	6	15	5	15
06:00 AM	15	46	20	46	15	48	17	47
07:00 AM	58	71	53	72	53	74	55	72
08:00 AM	84	109	81	112	81	100	82	107
09:00 AM	65	72	66	77	54	69	62	73
10:00 AM	76	66	67	53	83	70	75	63
11:00 AM	92	87	77	55	96	76	88	73
12:00 PM	77	75	82	68	93	77	84	73
01:00 PM	74	61	71	46	106	47	84	51
02:00 PM	97	50	98	47	102	60	99	52
03:00 PM	114	56	117	73	121	86	117	72
04:00 PM	132	68	137	62	127	63	132	64
05:00 PM	151	71	151	76	117	79	140	75
06:00 PM	112	58	126	46	112	56	117	53
07:00 PM	97	41	78	52	91	40	89	44
08:00 PM	75	21	70	22	58	28	68	24
09:00 PM	55	15	35	11	55	32	48	19
10:00 PM	17	5	20	11	31	11	23	9
11:00 PM	11	6	6	5	9	3	9	5
Day Total	1413	1003	1374	961	1431	1051	1408	1004
Combine Totals	2416		2335		2482		2412	



1220-Old 41 Rd N of E W Terry St
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

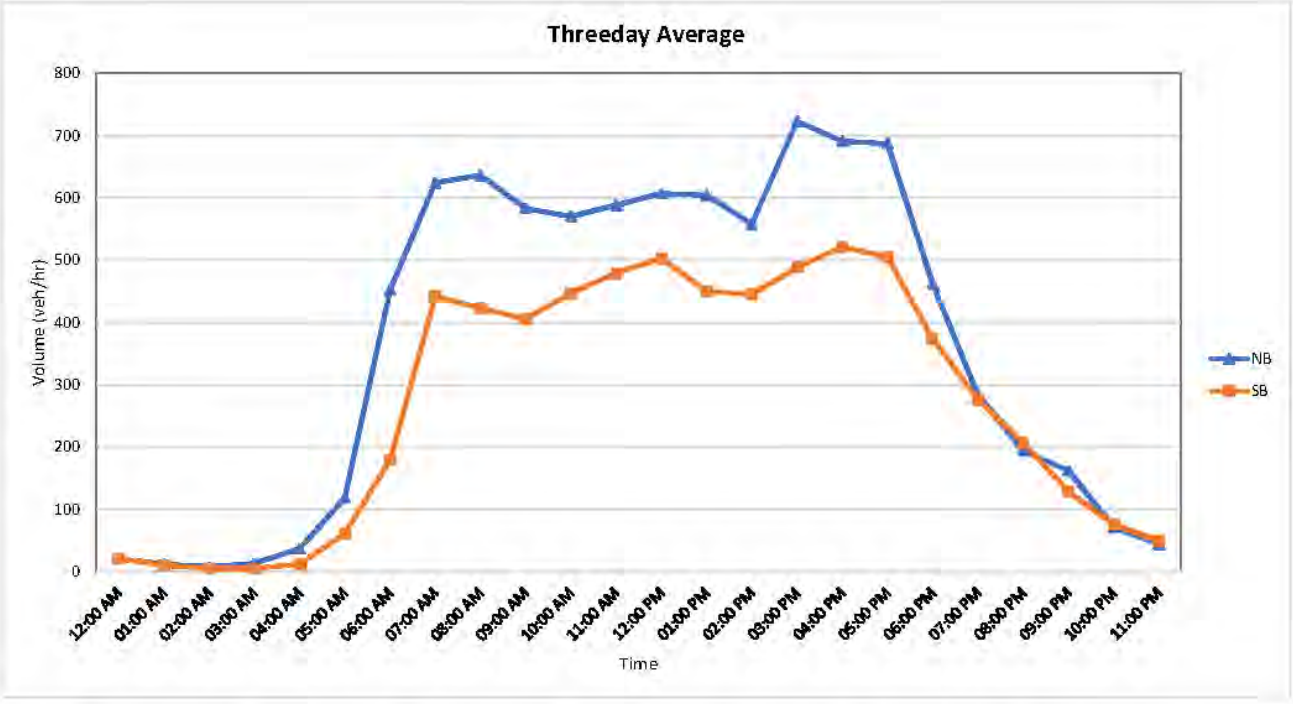
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	48	27	48	33	47	27	48	29
01:00 AM	18	20	22	14	33	25	24	20
02:00 AM	7	12	12	13	17	18	12	14
03:00 AM	10	20	8	14	15	18	11	17
04:00 AM	36	57	30	51	41	61	36	56
05:00 AM	111	209	109	201	126	220	115	210
06:00 AM	406	626	410	588	399	599	405	604
07:00 AM	586	831	601	844	553	857	580	844
08:00 AM	642	913	633	838	589	823	621	858
09:00 AM	642	818	675	790	658	792	658	800
10:00 AM	706	825	624	792	597	765	642	794
11:00 AM	751	865	695	791	669	831	705	829
12:00 PM	760	870	742	768	784	822	762	820
01:00 PM	745	770	737	804	764	778	749	784
02:00 PM	829	794	810	769	762	801	800	788
03:00 PM	882	908	833	916	882	899	866	908
04:00 PM	916	819	936	813	964	833	939	822
05:00 PM	910	886	871	887	919	853	900	875
06:00 PM	816	838	838	688	765	658	806	728
07:00 PM	647	551	635	526	630	507	637	528
08:00 PM	425	369	433	365	368	366	409	367
09:00 PM	477	312	308	275	322	297	369	295
10:00 PM	179	143	208	163	233	163	207	156
11:00 PM	101	71	103	82	106	76	103	76
Day Total	11650	12554	11321	12025	11243	12089	11404	12222
Combine Totals	24204		23346		23332		23626	



1216-Old 41 Rd S of US 41
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

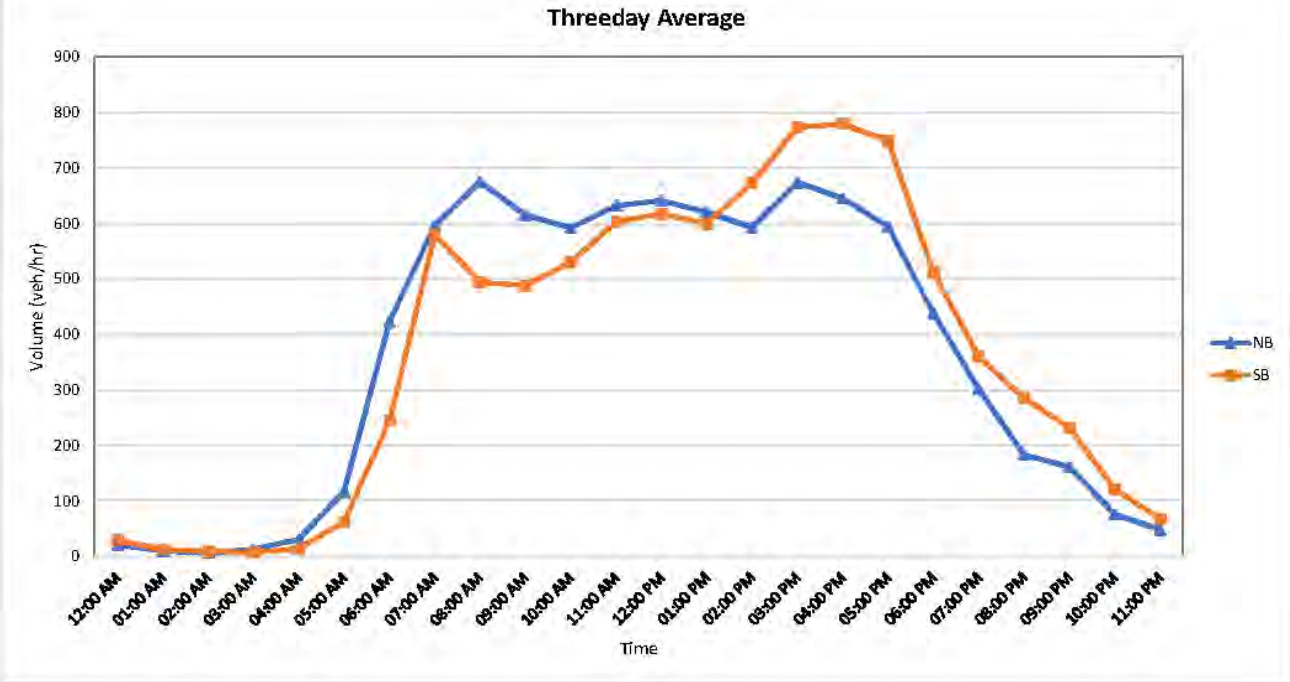
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	17	21	22	19	25	22	21	21
01:00 AM	16	10	8	14	10	8	12	10
02:00 AM	7	6	10	5	6	3	8	5
03:00 AM	11	5	11	5	17	5	13	5
04:00 AM	31	12	45	10	34	15	37	12
05:00 AM	120	60	113	61	121	62	118	61
06:00 AM	454	176	442	180	461	185	452	180
07:00 AM	608	468	641	441	622	419	624	442
08:00 AM	641	423	618	406	650	441	636	423
09:00 AM	583	379	583	426	582	410	583	405
10:00 AM	588	456	533	449	590	436	570	447
11:00 AM	581	490	590	450	594	497	588	479
12:00 PM	626	476	581	487	615	548	607	503
01:00 PM	577	454	590	468	645	429	604	450
02:00 PM	562	424	556	452	555	460	558	445
03:00 PM	729	494	725	501	715	470	723	488
04:00 PM	703	520	647	502	722	540	691	521
05:00 PM	654	521	686	525	720	468	687	505
06:00 PM	457	397	493	369	437	356	462	374
07:00 PM	244	270	300	292	307	266	284	276
08:00 PM	189	172	194	247	199	201	194	207
09:00 PM	189	116	141	117	157	155	162	129
10:00 PM	66	56	71	70	79	103	72	76
11:00 PM	34	54	46	48	51	49	44	50
Day Total	8687	6458	8647	6544	8914	6544	8750	6514
Combine Totals	15145		15191		15458		15264	



1228-Old 41 SO Bernwood Pkwy
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

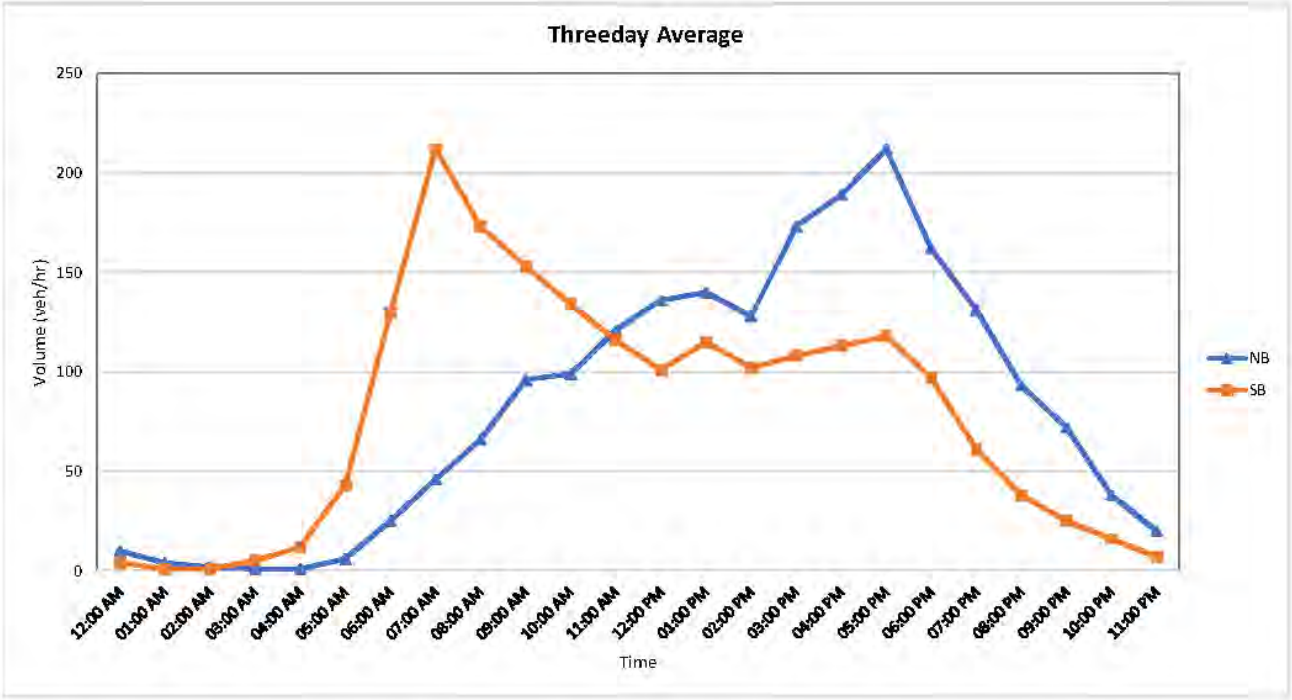
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	16	23	21	29	26	35	21	29
01:00 AM	9	11	11	16	10	12	10	13
02:00 AM	4	9	7	8	6	12	6	10
03:00 AM	9	6	13	6	17	9	13	7
04:00 AM	27	15	40	11	26	17	31	14
05:00 AM	118	68	112	56	122	63	117	62
06:00 AM	417	231	413	258	438	246	423	245
07:00 AM	578	589	628	582	583	565	596	579
08:00 AM	677	514	676	460	671	509	675	494
09:00 AM	619	469	597	507	629	487	615	488
10:00 AM	668	531	536	522	573	538	592	530
11:00 AM	612	636	654	585	631	587	632	603
12:00 PM	684	633	596	581	643	637	641	617
01:00 PM	619	568	597	620	645	611	620	600
02:00 PM	597	661	580	666	602	692	593	673
03:00 PM	683	776	643	778	697	764	674	773
04:00 PM	637	775	645	787	652	775	645	779
05:00 PM	571	781	596	739	616	727	594	749
06:00 PM	423	579	459	502	433	455	438	512
07:00 PM	288	341	298	394	317	345	301	360
08:00 PM	192	263	194	295	164	296	183	285
09:00 PM	198	223	138	215	146	258	161	232
10:00 PM	69	104	73	121	87	138	76	121
11:00 PM	39	73	53	70	53	61	48	68
Day Total	8754	8879	8580	8808	8787	8839	8705	8843
Combine Totals	17633		17388		17626		17548	



0002-Paradise Rd N. of Shangri-La
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

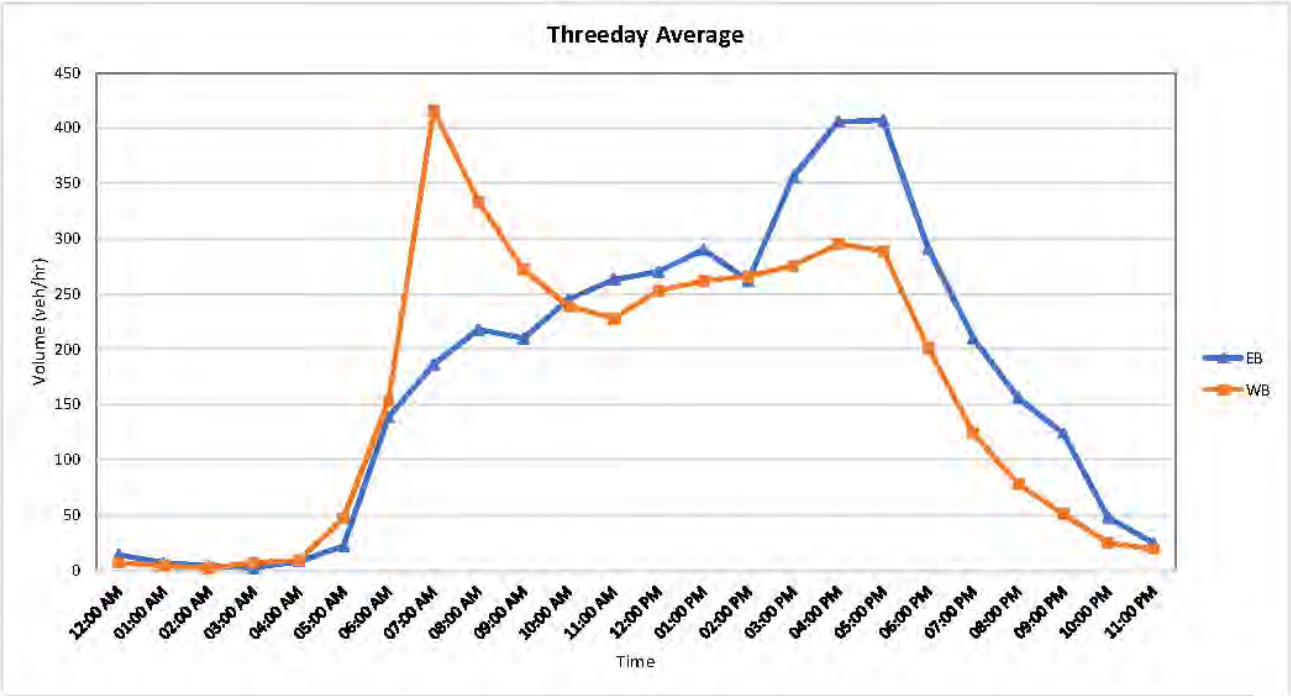
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	7	4	10	4	12	3	10	4
01:00 AM	3	1	6	2	3	1	4	1
02:00 AM	3	3	0	0	4	1	2	1
03:00 AM	1	4	1	7	0	3	1	5
04:00 AM	0	13	3	8	1	14	1	12
05:00 AM	5	45	5	40	8	43	6	43
06:00 AM	26	140	21	130	27	119	25	130
07:00 AM	52	192	36	230	49	214	46	212
08:00 AM	71	175	67	159	61	185	66	173
09:00 AM	77	144	108	158	103	156	96	153
10:00 AM	93	142	111	136	92	125	99	134
11:00 AM	125	104	122	133	115	110	121	116
12:00 PM	118	92	143	93	148	119	136	101
01:00 PM	136	112	143	107	142	125	140	115
02:00 PM	148	83	117	111	120	112	128	102
03:00 PM	167	108	173	109	179	107	173	108
04:00 PM	206	134	177	105	183	100	189	113
05:00 PM	211	132	208	110	217	112	212	118
06:00 PM	167	105	173	104	146	83	162	97
07:00 PM	126	58	131	53	137	72	131	61
08:00 PM	83	28	109	42	88	44	93	38
09:00 PM	81	22	65	24	71	29	72	25
10:00 PM	30	16	37	16	48	15	38	16
11:00 PM	18	6	22	7	20	7	20	7
Day Total	1954	1863	1988	1888	1974	1899	1971	1885
Combine Totals	3817		3876		3873		3856	



1212-Shangri-La Rd E of Old US 41
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

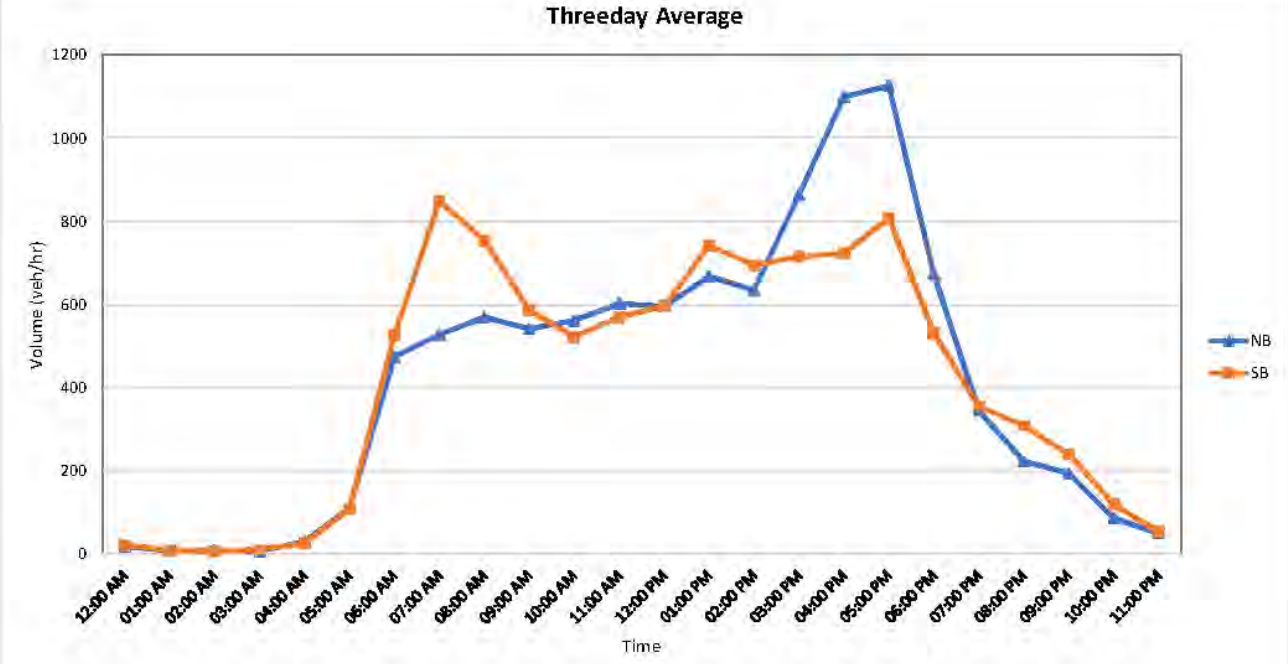
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	11	5	13	10	19	7	14	7
01:00 AM	6	4	10	5	6	4	7	4
02:00 AM	1	2	5	2	5	1	4	2
03:00 AM	2	6	1	9	3	7	2	7
04:00 AM	8	11	10	7	7	8	8	9
05:00 AM	22	47	20	43	23	51	22	47
06:00 AM	146	172	135	152	137	135	139	153
07:00 AM	199	387	183	446	176	416	186	416
08:00 AM	219	336	224	325	211	340	218	334
09:00 AM	197	270	231	281	203	265	210	272
10:00 AM	251	270	231	223	254	223	245	239
11:00 AM	267	228	264	226	258	231	263	228
12:00 PM	246	252	271	238	292	268	270	253
01:00 PM	280	285	278	235	311	266	290	262
02:00 PM	269	260	259	257	258	280	262	266
03:00 PM	364	292	340	271	364	264	356	276
04:00 PM	416	310	399	298	404	277	406	295
05:00 PM	423	282	402	281	397	303	407	289
06:00 PM	286	212	297	195	291	196	291	201
07:00 PM	216	120	199	119	216	134	210	124
08:00 PM	152	62	172	80	144	91	158	78
09:00 PM	131	45	96	42	144	67	124	51
10:00 PM	38	29	47	26	60	20	48	25
11:00 PM	25	16	25	19	25	22	25	19
Day Total	4175	3903	4112	3790	4208	3876	4163	3857
Combine Totals	8078		7902		8084		8020	



1226-Imperial Pkwy NO Shangri-LA
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

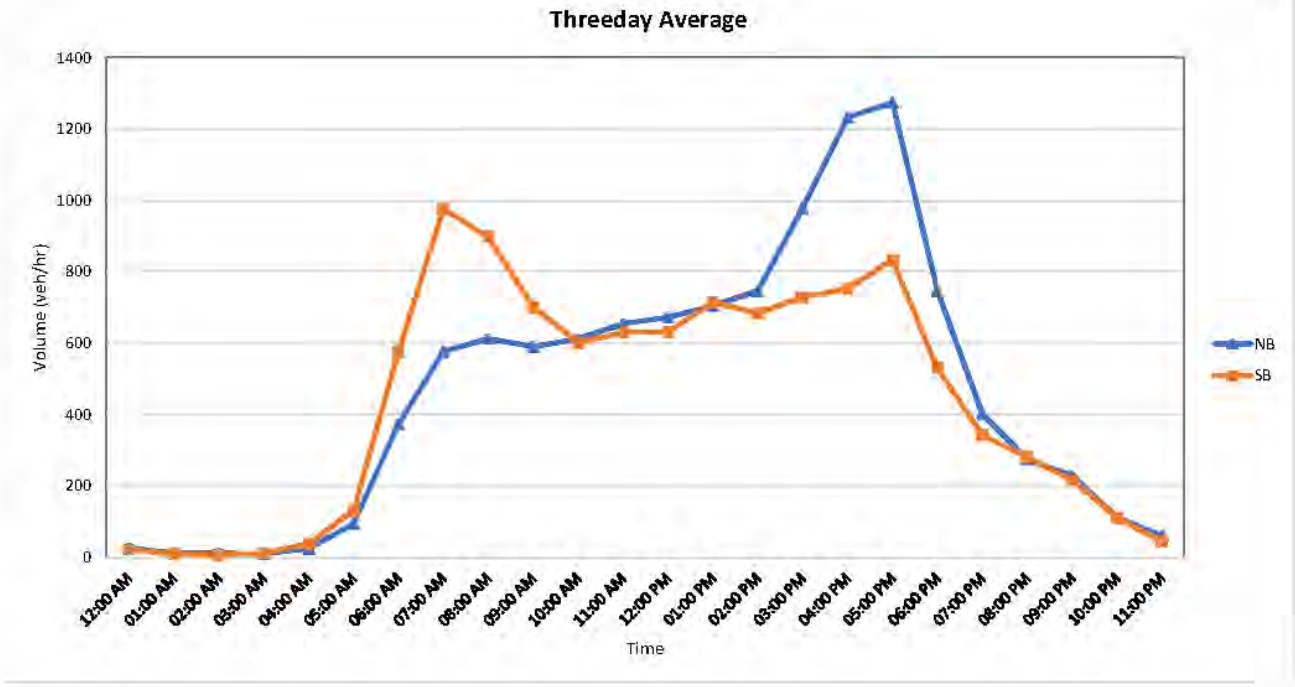
Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	20	27	20	24	17	19	19	23
01:00 AM	11	3	6	19	11	9	9	10
02:00 AM	10	7	11	9	11	9	11	8
03:00 AM	7	17	6	9	10	11	8	12
04:00 AM	29	23	34	28	30	30	31	27
05:00 AM	114	110	106	112	114	104	111	109
06:00 AM	470	538	473	526	481	517	475	527
07:00 AM	525	852	538	875	522	819	528	849
08:00 AM	597	774	551	751	562	739	570	755
09:00 AM	526	593	581	566	520	601	542	587
10:00 AM	536	493	558	583	593	514	562	523
11:00 AM	584	575	605	545	620	592	603	571
12:00 PM	570	594	585	591	634	603	596	596
01:00 PM	668	764	655	702	683	759	668	742
02:00 PM	613	670	633	729	660	687	635	695
03:00 PM	835	677	867	698	891	771	864	715
04:00 PM	1046	743	1062	721	1193	705	1100	723
05:00 PM	1112	782	1103	812	1162	829	1126	808
06:00 PM	812	523	682	532	725	539	673	531
07:00 PM	337	390	348	298	356	384	348	357
08:00 PM	211	309	242	289	220	328	224	309
09:00 PM	201	186	174	277	211	259	195	241
10:00 PM	76	109	89	133	98	119	88	120
11:00 PM	42	52	52	55	57	55	50	54
Day Total	9750	9811	9979	9864	10381	10002	10034	9892
Combine Totals	19561		19843		20383		19926	



1227 Imperial Pkwy SO Shangri-LA
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	24	23	30	19	25	22	26	21
01:00 AM	9	3	8	15	15	7	11	8
02:00 AM	10	5	11	7	11	9	11	7
03:00 AM	10	15	7	8	11	11	9	11
04:00 AM	24	37	28	37	21	40	24	38
05:00 AM	93	132	89	135	97	121	93	129
06:00 AM	374	579	371	588	370	558	372	575
07:00 AM	580	981	585	1009	582	938	576	976
08:00 AM	639	907	603	898	593	886	612	897
09:00 AM	559	709	634	686	576	711	590	702
10:00 AM	605	565	618	644	613	594	611	601
11:00 AM	650	631	648	608	664	647	654	629
12:00 PM	643	624	665	650	708	617	672	630
01:00 PM	694	726	686	676	731	742	704	715
02:00 PM	735	659	746	696	758	693	746	683
03:00 PM	946	677	989	732	1002	777	979	729
04:00 PM	1192	782	1186	742	1317	731	1232	752
05:00 PM	1261	800	1258	846	1303	855	1274	834
06:00 PM	883	528	764	527	790	532	746	529
07:00 PM	385	359	400	300	417	365	401	341
08:00 PM	248	271	314	261	257	305	273	279
09:00 PM	232	167	199	247	250	230	227	215
10:00 PM	88	94	117	120	128	117	111	110
11:00 PM	49	44	58	49	71	40	59	44
Day Total	10713	10318	11012	10500	11310	10548	11013	10455
Combine Totals	21031		21512		21858		21468	



2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: DISTRICT
CATEGORY: 1252 BONITA SPRINGS AREA

WEEK	DATES	SF	MOCF: 0.95 PSCF
1	01/01/2018 - 01/06/2018	1.00	1.05
2	01/07/2018 - 01/13/2018	1.00	1.05
3	01/14/2018 - 01/20/2018	0.99	1.04
4	01/21/2018 - 01/27/2018	0.98	1.03
* 5	01/28/2018 - 02/03/2018	0.97	1.02
* 6	02/04/2018 - 02/10/2018	0.95	1.00
* 7	02/11/2018 - 02/17/2018	0.94	0.99
* 8	02/18/2018 - 02/24/2018	0.94	0.99
* 9	02/25/2018 - 03/03/2018	0.94	0.99
*10	03/04/2018 - 03/10/2018	0.93	0.98
*11	03/11/2018 - 03/17/2018	0.93	0.98
*12	03/18/2018 - 03/24/2018	0.94	0.99
*13	03/25/2018 - 03/31/2018	0.95	1.00
*14	04/01/2018 - 04/07/2018	0.95	1.00
*15	04/08/2018 - 04/14/2018	0.96	1.01
*16	04/15/2018 - 04/21/2018	0.97	1.02
*17	04/22/2018 - 04/28/2018	0.98	1.03
18	04/29/2018 - 05/05/2018	1.00	1.05
19	05/06/2018 - 05/12/2018	1.01	1.06
20	05/13/2018 - 05/19/2018	1.02	1.07
21	05/20/2018 - 05/26/2018	1.03	1.08
22	05/27/2018 - 06/02/2018	1.03	1.08
23	06/03/2018 - 06/09/2018	1.04	1.09
24	06/10/2018 - 06/16/2018	1.04	1.09
25	06/17/2018 - 06/23/2018	1.05	1.11
26	06/24/2018 - 06/30/2018	1.05	1.11
27	07/01/2018 - 07/07/2018	1.06	1.12
28	07/08/2018 - 07/14/2018	1.06	1.12
29	07/15/2018 - 07/21/2018	1.07	1.13
30	07/22/2018 - 07/28/2018	1.06	1.12
31	07/29/2018 - 08/04/2018	1.05	1.11
32	08/05/2018 - 08/11/2018	1.04	1.09
33	08/12/2018 - 08/18/2018	1.03	1.08
34	08/19/2018 - 08/25/2018	1.04	1.09
35	08/26/2018 - 09/01/2018	1.04	1.09
36	09/02/2018 - 09/08/2018	1.05	1.11
37	09/09/2018 - 09/15/2018	1.05	1.11
38	09/16/2018 - 09/22/2018	1.04	1.09
39	09/23/2018 - 09/29/2018	1.03	1.08
40	09/30/2018 - 10/06/2018	1.02	1.07
41	10/07/2018 - 10/13/2018	1.01	1.06
42	10/14/2018 - 10/20/2018	1.00	1.05
43	10/21/2018 - 10/27/2018	1.00	1.05
44	10/28/2018 - 11/03/2018	1.00	1.05
45	11/04/2018 - 11/10/2018	1.00	1.05
46	11/11/2018 - 11/17/2018	1.00	1.05
47	11/18/2018 - 11/24/2018	1.00	1.05
48	11/25/2018 - 12/01/2018	1.00	1.05
49	12/02/2018 - 12/08/2018	1.00	1.05
50	12/09/2018 - 12/15/2018	1.00	1.05
51	12/16/2018 - 12/22/2018	1.00	1.05
52	12/23/2018 - 12/29/2018	0.99	1.04
53	12/30/2018 - 12/31/2018	0.99	1.04

* PEAK SEASON

26-FEB-2019 18:31:28 830UPD 1_1252_PKSEASON.TXT

Appendix E:

Traffic Growth Trends

Traffic Growth Trends

Bonita Springs Golf Course

Residential Planned Development (RPD) Rezone

Bonita Springs, FL
5/14/2021

Prepared for:
Barron Collier Companies
2600 Golden Gate Parkway
Naples, FL 34105
Phone: 239-403-6804

Prepared by:
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Future Traffic Growth Trend

Future Growth Rates Determination per TIS dated 3-10-21

As illustrated in the Traffic Impact Statement (TIS) dated 3-10-21 associated with Bonita Springs Golf Course Planned Development, historic growth rates are estimated for the segments of the roadway network in the study area using a general guidance of a minimum 2% growth rate, or historical growth rates from available traffic counts.

Projected historical linear growth rates are calculated for a 5-year period (2015 – 2020) based on daily traffic volumes illustrated in the 2020 City of Bonita Springs traffic count report. Refer to **Appendix A: Bonita Springs 2020 Traffic Count Data (Excerpts)**.

For the purposes of the TIS, calculated growth rates were moderated to a maximum reasonable rate of 5%. Based on traffic data presented for Old 41 Rd, a historical growth rate of 4% was determined which is representative for the expected traffic growth for the roadway network in the vicinity of project. Annual growth rate determination is illustrated in **Table 1**.

Table 1
Annual Growth Rate Determination

Roadway	Roadway Segment Location	FTE Station Number	Historic Traffic Count (Year)\Volume		Growth Rate Calculated	Growth Rate Applied
			From	To		
Paradise Rd	North Project Access to Shangri-La Rd	0002	(2017)/2,500	(2020)/3,600	14.7%	5.0%
Cockleshell Dr	Maddox Ln to Shangri-La Rd	1213	(2015)/1,900	(2020)/2,200	3.2%	3.2%
Shangri-La Rd	Old 41 Rd to Imperial Pkwy	1212	(2015)/4,600	(2020)/7,500	12.6%	5.0%
Imperial Pkwy	North of Shangri-La Rd	1226	(2015)/13,000	(2020)/18,500	8.5%	5.0%
Imperial Pkwy	South of Shangri-La Rd	1227	(2015)/13,800	(2020)/20,000	9.0%	5.0%
Old 41 Rd	South of Shangri-La Rd	1220	(2015)/20,700	(2020)/22,000	1.3%	2.0%
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	1228	(2015)/13,600	(2020)/16,300	4.0%	4.0%
Old 41 Rd	Bernwood Pkwy to US 41	1216	(2015)/12,000	(2020)/14,200	3.7%	3.7%

Traffic Growth Trends – Additional Considerations

As illustrated in Traffic Comment #4: "Staff does not agree with moderating the calculated growth rates to 5%. The growth rates calculated from the historical counts reflect the rapid growth the City is experiencing. Please revise all tables using the growth rates obtained from the counts."

Additional considerations were evaluated to determine realistic and adequate traffic growth trends for the future forecast year 2025.

1. Paradise Road

a) This roadway services residential uses which are traffic generators in nature with typical moderate growth patterns.

b) Segment located north of Maddox Lane is a no outlet roadway. This limits the amount of additional traffic expected to occur in the future.

c) The proposed project traffic is considered in addition to the estimated future background traffic.

d) A linear regression analysis is performed using the FDOT Traffic Trends Analysis Tool, current version Trend_v03a.xls. Refer to **Appendix B: FDOT Traffic Trend Analysis.** Based on the results of this analysis, an annual growth rate of 10.8% is projected.

It is noted that limited count data (2017-2020) may not reflect sustainable growth trends at this location.

e) Cockleshell Drive is a parallel similar type (2LN) facility with a higher functional classification (collector) and connectivity to Strike Lane to the north. The estimated annual growth for this facility is 3.2% as illustrated in **Table 1.**

Conclusion – Based on the above observations, a maximum reasonable annual rate of 5% should be considered for this roadway.

2. Shangri-La Road

a) A linear regression analysis is performed for the 2015 – 2020 period using the FDOT Traffic Trends Analysis Tool as illustrated in **Appendix B.** Based on this analysis, an annual growth rate of 7.2% is projected.

b) Based on 2019 FDOT Traffic Forecasting Handbook (Section 4.4.1 – 3.b page 59), 5 to 10 years of historical data is recommended to determine traffic growth trends. A linear regression analysis is performed for the 2010 – 2020 period using the FDOT Traffic Trends Analysis Tool as illustrated in **Appendix B.** As there is no data available for the years 2011 and 2013, the 2011 and 2013 traffic counts are assumed as the highest threshold between the volumes presented for the adjacent years. Based on this analysis, an annual growth rate of 3.5% is projected.

Conclusion – Based on the above observations, a maximum reasonable annual rate of 5% should be considered for this roadway.

3. Imperial Parkway – North of Shangri-La Road

a) A linear regression analysis is performed for the 2015 – 2020 period using the FDOT Traffic Trends Analysis Tool (**Appendix B**). Based on this analysis, an annual growth rate of 5.9% is projected.

b) No additional traffic data is available as presented in the 2020 City of Bonita Springs Traffic Count Report.

Conclusion - Based on the above observations, an annual rate of 5.9% should be considered for this roadway for traffic forecasting purposes.

4. Imperial Parkway – South of Shangri-La Road

a) A linear regression analysis is performed for the 2015 – 2020 period using the FDOT Traffic Trends Analysis Tool (**Appendix B**). An annual growth rate of 6.2% is projected for the future 2025 buildout conditions.

b) No additional traffic data is available as presented in the 2020 City of Bonita Springs Traffic Count Report.

Conclusion - Based on the above observations, a maximum reasonable rate of 6.2% should be considered for this roadway.

Traffic Growth Trends – Recommendations

Other jurisdictional agencies have implemented similar methodologies to promote reasonable traffic forecasting:

Collier County – a 4 % maximum annual growth rate is utilized for all County monitored facilities as presented in the latest 2020 AUIR – Master Attachment F Spreadsheet available to consultants.

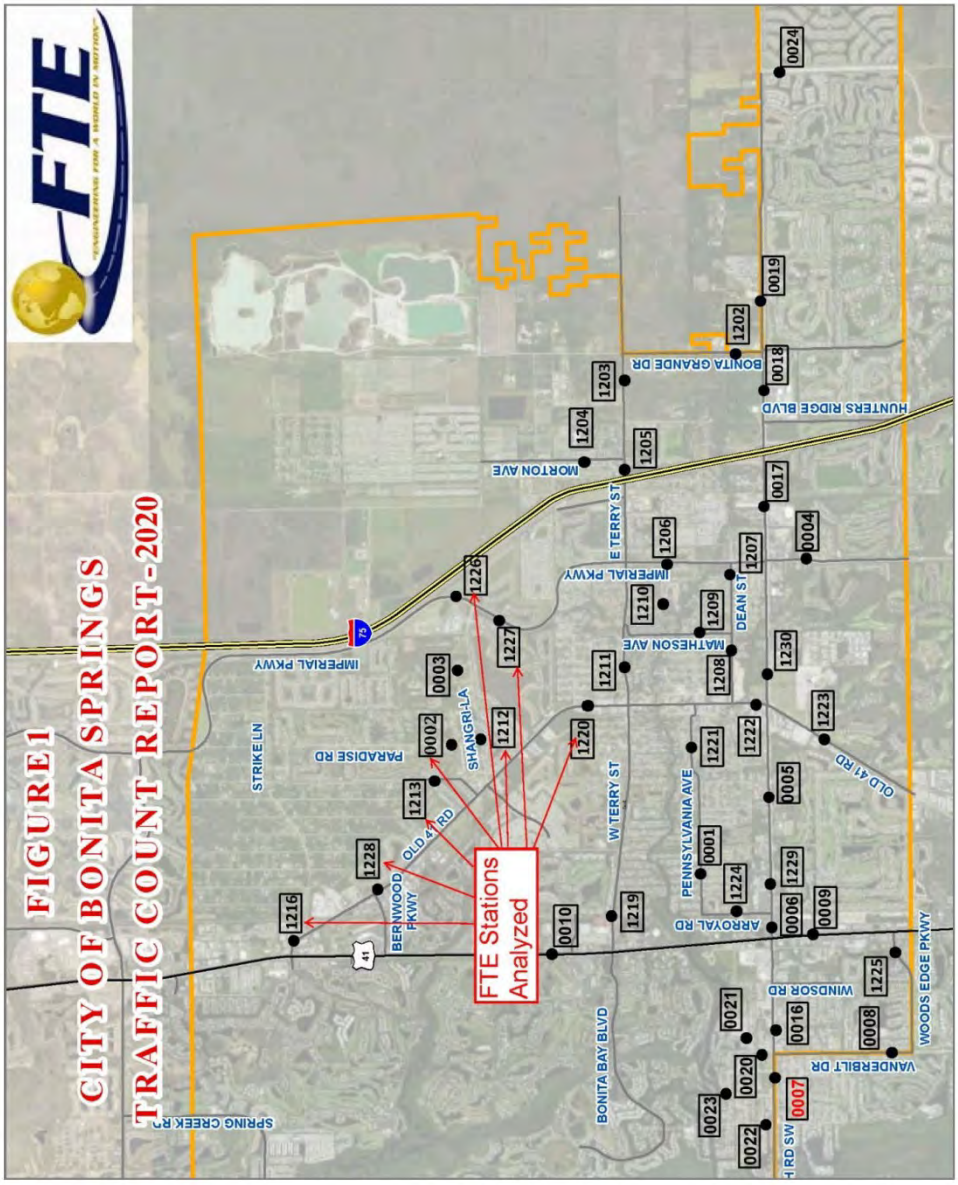
Lee County - The Esplanade Lake Club Phase 2 Development Order (DO) – TIS dated 3-15-21. This project proposed 80 single-family dwelling units and 122 twin villa residential units. The development is located east of I-75, on the south side of Alico Road, approximately one mile east of Ben Hill Griffin Parkway and lies within Section 12, Township 46 South, Range 25 East, in Lee County, Florida. As presented in the TIS, for the segment of Alico Road west of I-75, the calculated growth rate for the period 2014 through 2019 was 5.9%. Similarly, for the segment of Alico Road east of Ben Hill Griffin, the calculated growth rate for the period 2014 through 2019 was 4.7%. Based on coordination with Lee County Transportation Staff, a maximum 4.0% growth rate was selected for calculating the future background traffic for these links.

Based on the above analyses, we recommend the following annual growth rates be implemented for traffic forecasting purposes: Paradise Rd and Shangri-La Rd – 5%; Imperial Parkway – North of Shangri-La – 5.9%; Imperial Parkway – South of Shangri-La – 6.2%; all other analyzed roadway segments – as presented in **Table 1** with no changes proposed.

Appendix A:

Bonita Springs 2020 Traffic Count Data (Excerpts)

Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021

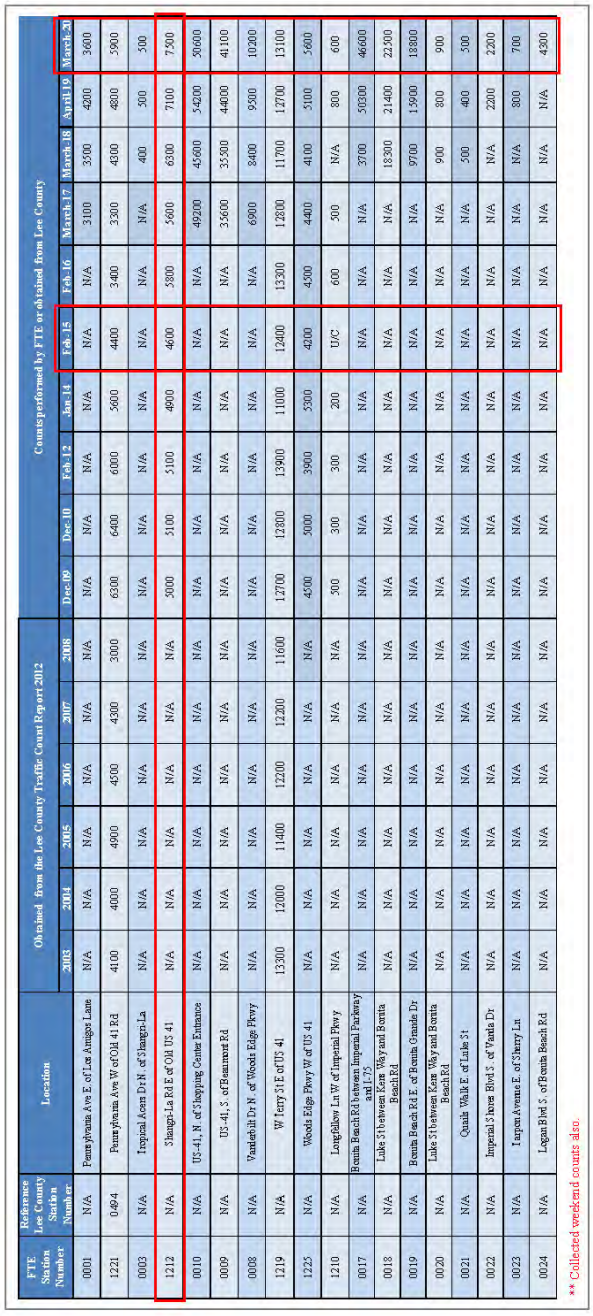


Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021

TABLE 2 HISTORIC TRAFFIC COUNT SUMMARY
CITY OF BONITA SPRINGS, FL

FTE Station Number	Reference Lee County Station Number	Location	Obtained from the Lee County Traffic Count Report 2012								Count performed by FTE or obtained from Lee County								
			2003	2004	2005	2006	2007	2008	Dec-09	Dec-10	Feb-12	Jan-14	Feb-15	Feb-16	March-17	March-18	April-19	March-21
1224	0496	Arnold Rd N of Bonita Beach Rd	5000	6200	6500	6400	5300	4700	6000	5600	5000	5900	5500	6300	6100	6300	6700	6300
0005	N/A	Bonita Beach Rd between Wisconsin & Michigan St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28500	26700	30500	31300
0016	0007	Bonita Beach Rd E. of Vanderbilt Dr	N/A	N/A	N/A	N/A	UC	23400	24800	23000	23500	24600	25700	25900	30300	25300	28600	29400
1229	0221	Bonita Beach Rd East of Arnoal Rd	N/A	27000	25200	25600	26300	26300	22900	23600	N/A	N/A	N/A	32300	31100	28800	32800	33500
0006	N/A	Bonita Beach Rd W. of Arnoal Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30700	30000	34500	34900
1230	N/A	Bonita Beach W of Race Track Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37500	36100	34900	41000	41600
0012**	N/A	Bonita Beach Rd E. of Barefoot Blvd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19400	19000	21300	22900
0007**	N/A	Bonita Beach Rd W. of Vanderbilt Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25300	24000	26800	28600
1202	0519	Bonita Grande Dr N of Bonita Beach Rd	5400	7400	7100	8200	6800	5300	5300	5600	6100	5500	6200	6600	6300	7200	7900	9100
1213	N/A	Cocohatchi Dr N of Shangri-La Rd	N/A	N/A	N/A	N/A	N/A	N/A	1900	1900	2300	1700	1900	3900	3700	2100	1600	2200
1207	N/A	Dean St E of Lime St	N/A	N/A	N/A	N/A	N/A	N/A	3400	3100	3200	2800	2700	3000	2900	2600	3400	3500
1208	N/A	Dean St W of Madison Ave	N/A	N/A	N/A	N/A	N/A	N/A	2800	2300	2400	2000	2000	2500	2400	2100	2600	2600
1205	N/A	E Terry St E of I-75	N/A	N/A	N/A	N/A	N/A	N/A	8100	7900	7900	7800	8100	9000	8600	8700	10100	11200
1211	0271	E Terry St E of Old 41 Rd	9900	12000	13800	UC	10000	13000	14400	14300	14800	13400	12700	14800	14200	13200	15700	16700
1203	N/A	E Terry St W of Bonita Grande Dr	N/A	N/A	N/A	N/A	N/A	N/A	4600	4500	4600	4400	4500	5600	5400	5700	6900	7900
0013**	N/A	Estero Blvd E. of Hickory Blvd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9100	9300	10000	10600
0015**	N/A	Estero Blvd W. of Lovers Key State Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8600	9000	9600	9700
0014**	N/A	Estero Blvd S. of Lovers Key State Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8800	9100	9700	10100
1206	N/A	Imperial Pkwy Between Bonita Beach Rd and E Terry St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16300	17400	19600	20600	23300	21100	23300	27400	25000
1226	N/A	Imperial Pkwy NO Shangri-LA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13000	15900	15300	15700	19900	18500
0004	N/A	Imperial Pkwy S. of Tropic Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20200	20500	25100	23100
1227	N/A	Imperial Pkwy SO Shangri-LA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13800	17200	16600	18000	21400	20000
1209	N/A	Madison Ave N of Dean St	N/A	N/A	N/A	N/A	N/A	N/A	1900	1700	1900	1800	1500	2100	2100	1600	2000	2000
1204	N/A	Morton Ave N of East Terry St	N/A	N/A	N/A	N/A	N/A	N/A	3800	5400	5700	5300	5300	5900	5700	5600	6600	6600
1223	N/A	Old 41 Rd Between Collier County Line to Bonita Beach Rd	12600	13700	14000	14000	13000	11600	N/A	15200	14600	14100	14900	14700	14200	15200	17600	17500
1222	N/A	Old 41 Rd N of Bonita Beach Rd	16500	18500	17600	17400	18300	13200	13400	15000	14700	13500	13100	9000	8700	10500	12200	12400
1220	N/A	Old 41 Rd N of E/W Terry St	22000	24600	26300	26700	23500	19900	23800	23700	28300	25200	20700	18400	17700	19000	21900	22000
1216	N/A	Old 41 Rd S of I-75/ 41	13000	14200	15000	16000	13200	N/A	12000	12500	12200	12100	13000	11900	11500	11800	13500	14200
1228	N/A	Old 41 S/O Bernwood Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13600	13900	13300	13700	15700	16300
0002	N/A	Paradise Rd N of Shangri-La	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2500	2900	3500	3600

Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021



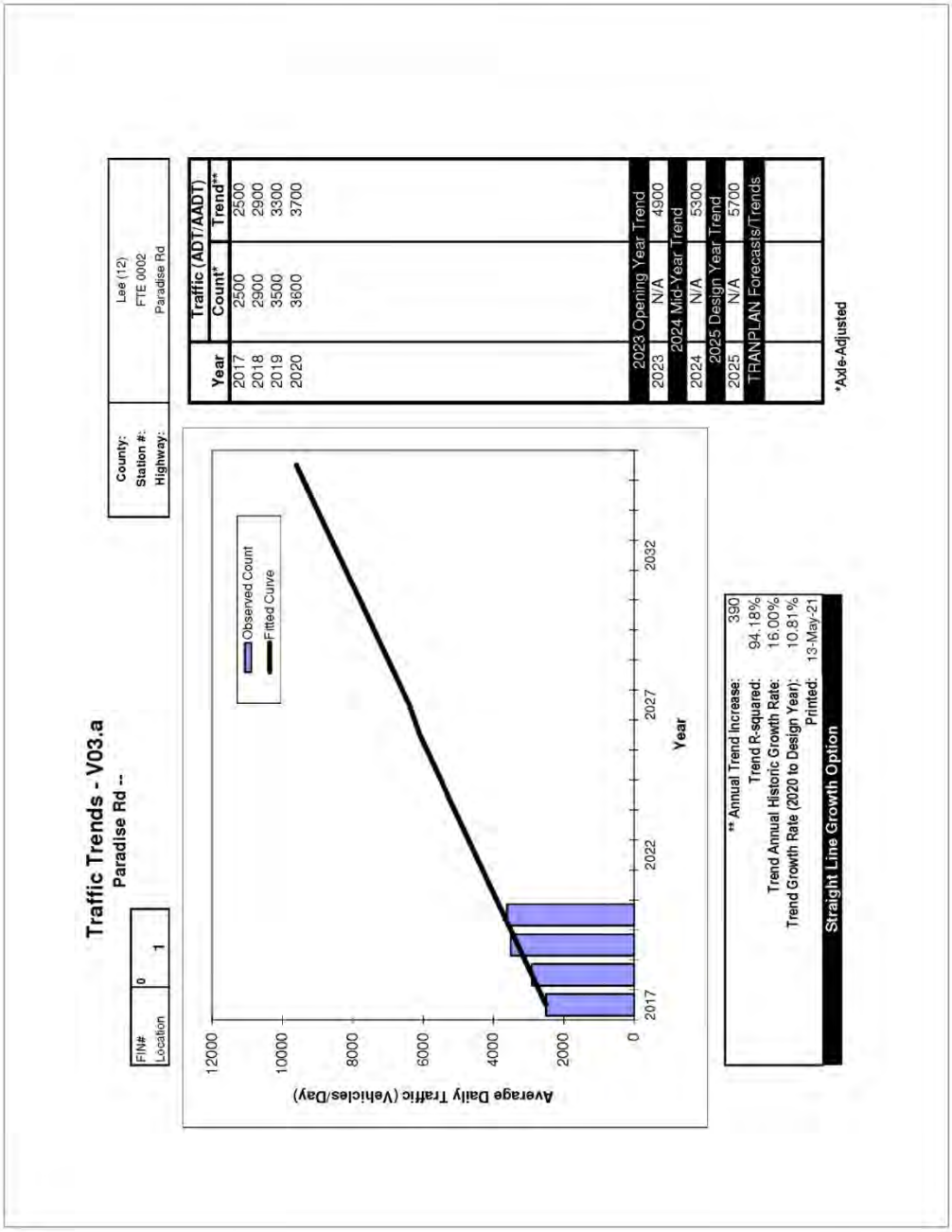
FTE Station Number	Reference Lee County Station Number	Location	Obtained from the Lee County Traffic Count Report 2012						Counts performed by FTE or obtained from Lee County											
			2013	2014	2015	2016	2017	2018	Dec-09	Dec-10	Feb-12	Sep-14	Feb-15	Feb-16	March-17	March-18	April-19	March-20
0001	N/A	Pennsylvania Ave E. of Los Amigos Lane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3100	3500	4200	3600
1221	0494	Pennsylvania Ave W of Old 41 Rd	4100	4000	4900	4500	4300	3000	6300	6400	6000	5600	4400	3400	3300	4300	4800	5900
0003	N/A	Tropical Acres Dr N. of Shangri-La	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	400	500	500
1212	N/A	Shangri-La Rd E of Old US 41	N/A	N/A	N/A	N/A	N/A	N/A	5000	5100	5100	4900	4600	5800	5600	6300	7100	7500
0010	N/A	US-41, N. of Shopping Center Entrance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	49200	45600	54200	50600
0009	N/A	US-41, S. of Beaumont Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35600	35500	44000	41100
0008	N/A	Vanderbilt Dr N. of Woods Edge Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6900	8400	9500	10200
1219	N/A	W Ferry St E of US 41	13300	12000	11400	12200	12200	11600	12700	12800	13900	11000	12400	13300	12800	11700	12700	13100
1225	N/A	Woods Edge Pkwy W of US 41	N/A	N/A	N/A	N/A	N/A	N/A	4500	5000	3900	5300	4200	4500	4400	4100	5100	5600
1210	N/A	Longfellow Ln W of Imperial Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	300	300	300	200	U/C	600	500	N/A	800	600
0017	N/A	Bonita Beach Rd between Imperial Parkway and I-75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3700	50300	46600
0018	N/A	Lake St between Kent Way and Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18300	21400	22500
0019	N/A	Bonita Beach Rd E. of Bonita Grande Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9700	15900	18800
0020	N/A	Lake St between Kent Way and Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	900	800	900
0021	N/A	Quail Walk E. of Lake St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	500	400	500
0022	N/A	Imperial Street Blvd S. of Panda Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2200	2200
0023	N/A	Airport Avenue E. of Sherry Ln	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	800	700
0024	N/A	Logan Blvd S. of Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4300

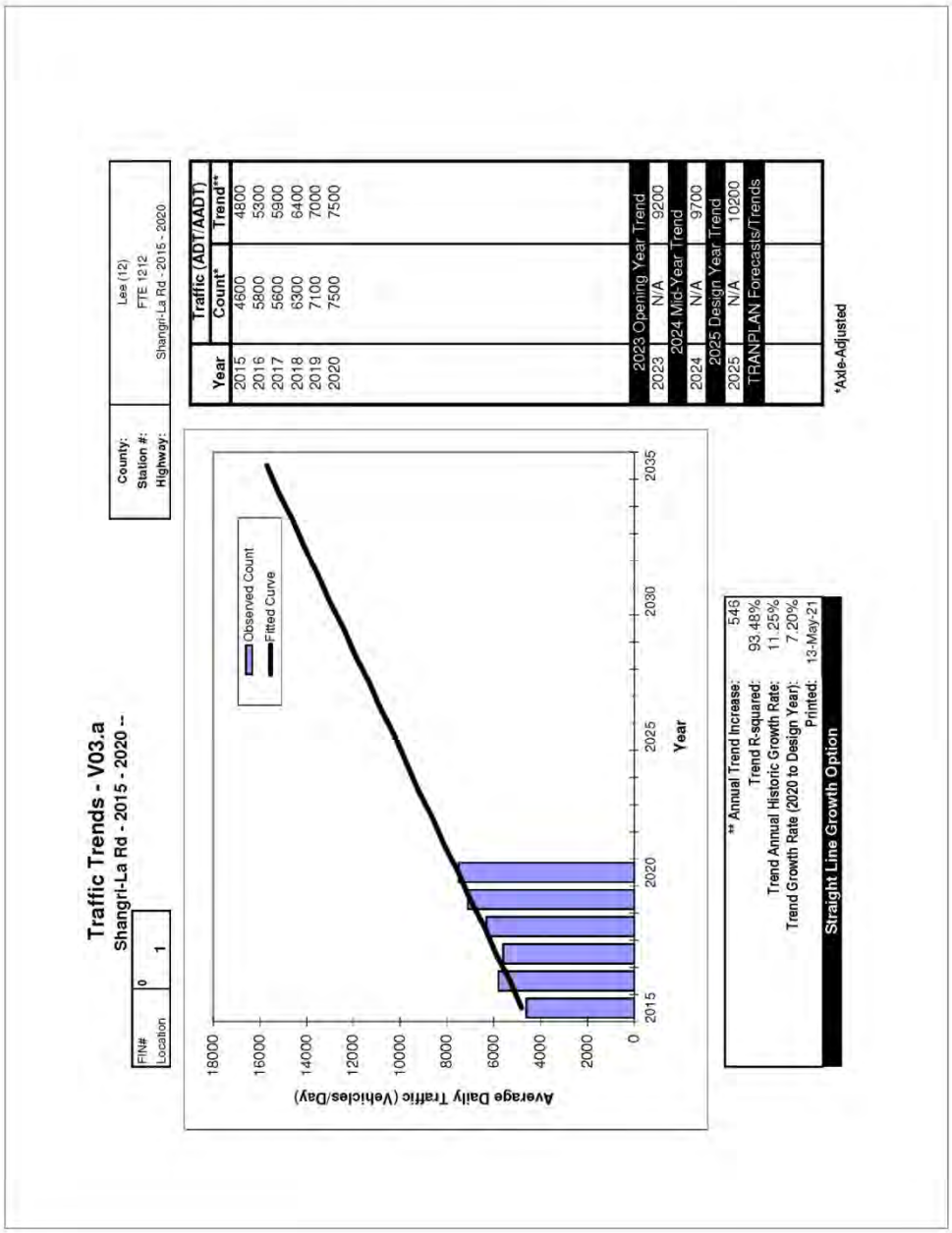
** Collected weekend counts also.

Appendix B:

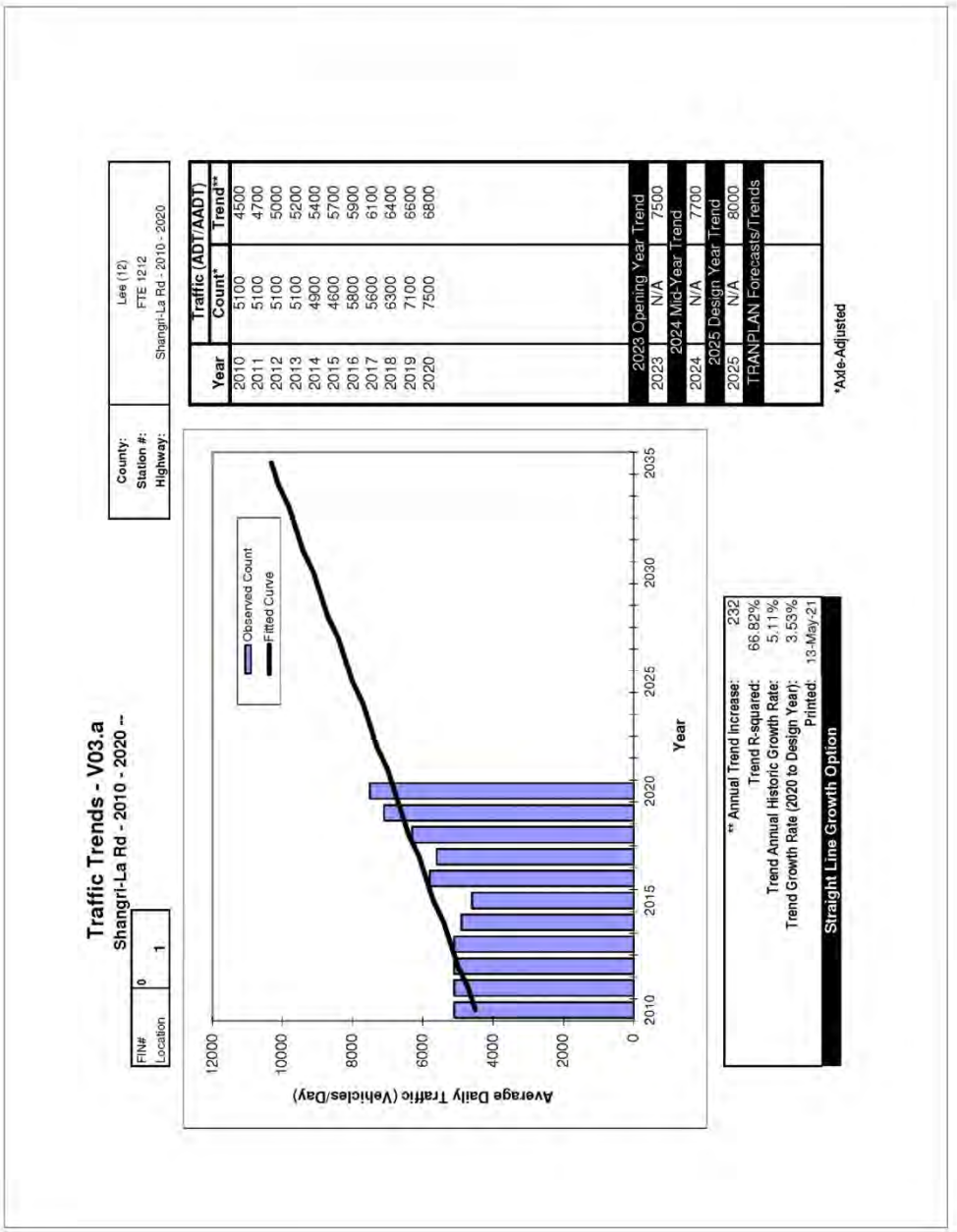
FDOT Traffic Trend Analysis

Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021

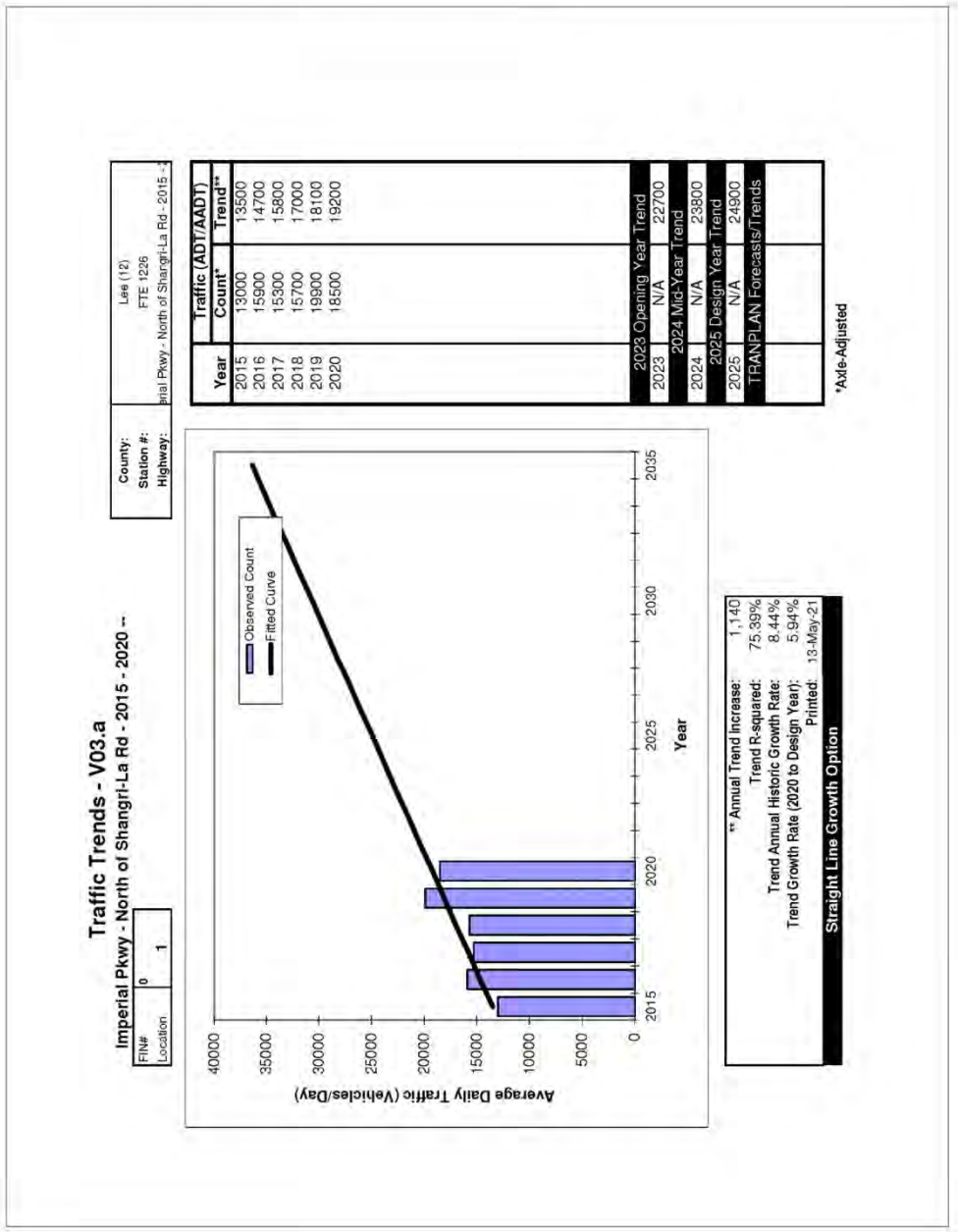



Traffic Trends - V03.a
Shangri-La Rd - 2015 - 2020 --
FIN# 0
Location 1
County: Lee (12)
Station #: FTE 1212
Highway: Shangri-La Rd - 2015 - 2020
Traffic (ADT/AADT)
Year | Count* | Trend**
2015 4600 4800
2016 5800 5300
2017 5600 5900
2018 6300 6400
2019 7100 7000
2020 7500 7500
2023 Opening Year Trend
2023 N/A 9200
2024 Mid-Year Trend
2024 N/A 9700
2025 Design Year Trend
2025 N/A 10200
TRANPLAN Forecasts/Trends
*Axle-Adjusted
Observed Count
Fitted Curve
Average Daily Traffic (Vehicles/Day)
Year
** Annual Trend Increase: 546
Trend R-squared: 93.48%
Trend Annual Historic Growth Rate: 11.25%
Trend Growth Rate (2020 to Design Year): 7.20%
Printed: 13-May-21
Straight Line Growth Option

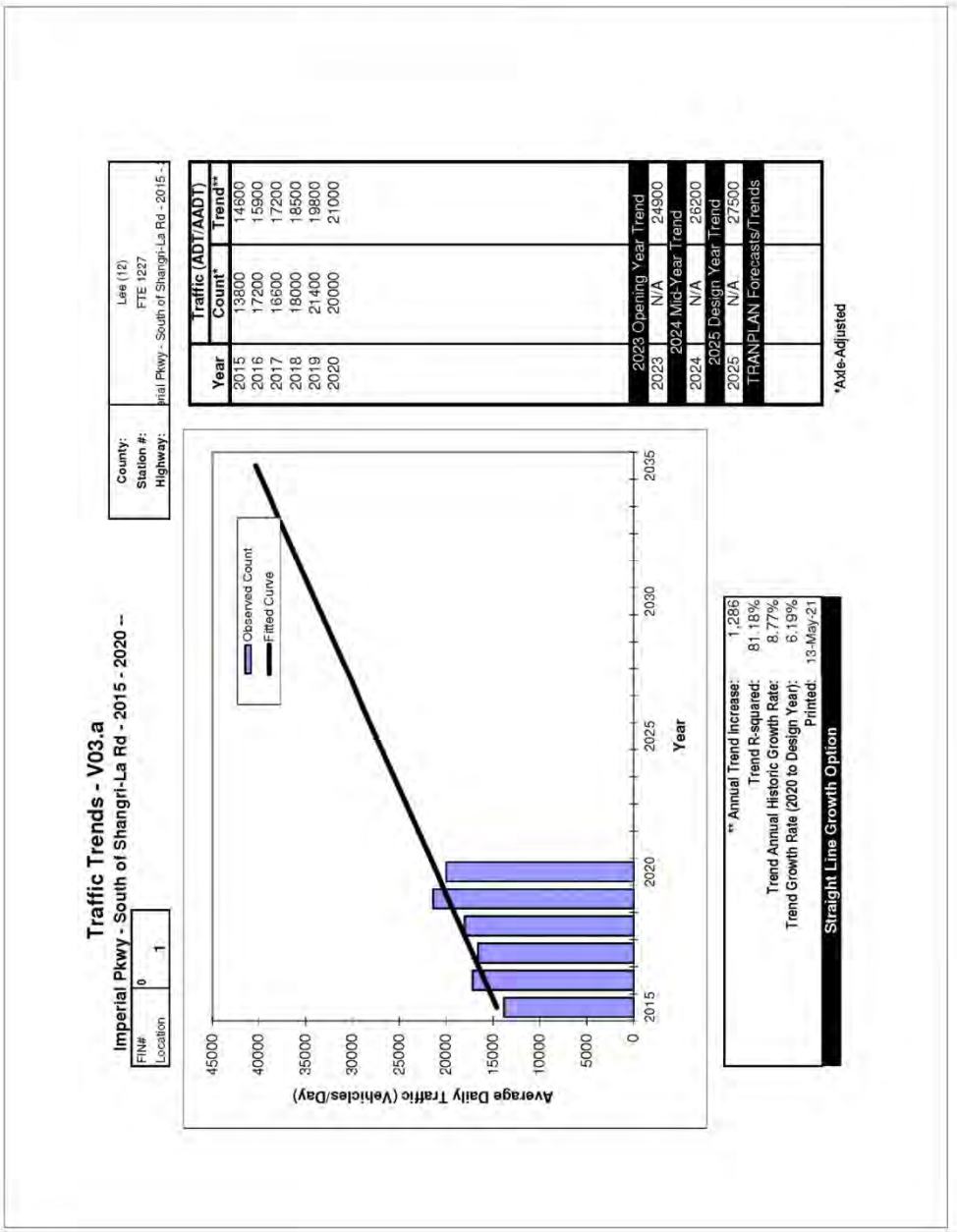
Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021



Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021



Bonita Springs Golf Course – RPD Rezone – Traffic Growth Trends – May 2021



Appendix F:

Lee County Generalized Peak Hour Directional Service Volumes (Excerpts)

Lee County
Generalized Peak Hour Directional Service Volumes
Urbanized Areas

April 2016 c:\input5

Uninterrupted Flow Highway
Level of Service

Lane	Divided	A	B	C	D	E
1	Undivided	130	420	850	1,210	1,640
2	Divided	1,060	1,810	2,560	3,240	3,590
3	Divided	1,600	2,720	3,840	4,860	5,380

Arterials
Class I (40 mph or higher posted speed limit)
Level of Service

Lane	Divided	A	B	C	D	E
1	Undivided	*	140	800	860	860
(1) 2	Divided	*	250	1,840	1,960	1,960
3	Divided	*	400	2,840	2,940	2,940
4	Divided	*	540	3,830	3,940	3,940

Class II (35 mph or slower posted speed limit)
Level of Service

Lane	Divided	A	B	C	D	E
1	Undivided	*	*	330	710	780
(2) 2	Divided	*	*	710	1,590	1,660
3	Divided	*	*	1,150	2,450	2,500
4	Divided	*	*	1,580	3,310	3,340

Controlled Access Facilities
Level of Service

Lane	Divided	A	B	C	D	E
1	Undivided	*	160	880	940	940
2	Divided	*	270	1,970	2,100	2,100
3	Divided	*	430	3,050	3,180	3,180

Collectors
Level of Service

Lane	Divided	A	B	C	D	E
(3) 1	Undivided	*	*	310	660	740
1	Divided	*	*	330	700	780
2	Undivided	*	*	730	1,440	1,520
2	Divided	*	*	770	1,510	1,600

Note: the service volumes for I-75 (freeway), bicycle mode, pedestrian mode, and bus mode should be from FDOT's most current version of LOS Handbook.

(1) - Old 41 Rd - from Shangri-La Rd to US 41, posted speed 45 mph
- Imperial Pkwy - north and south of Shangri-La Rd, posted speed 45 mph
(2) - Old 41 Rd - south of Shangri-La Rd, posted speed 35 mph
(3) - Paradise Rd, Cockleshell Dr, Shangri-La Rd, Maddox Ln and Carnousti Ct

Appendix G:

Bonita Springs Future Road System Functional Classification

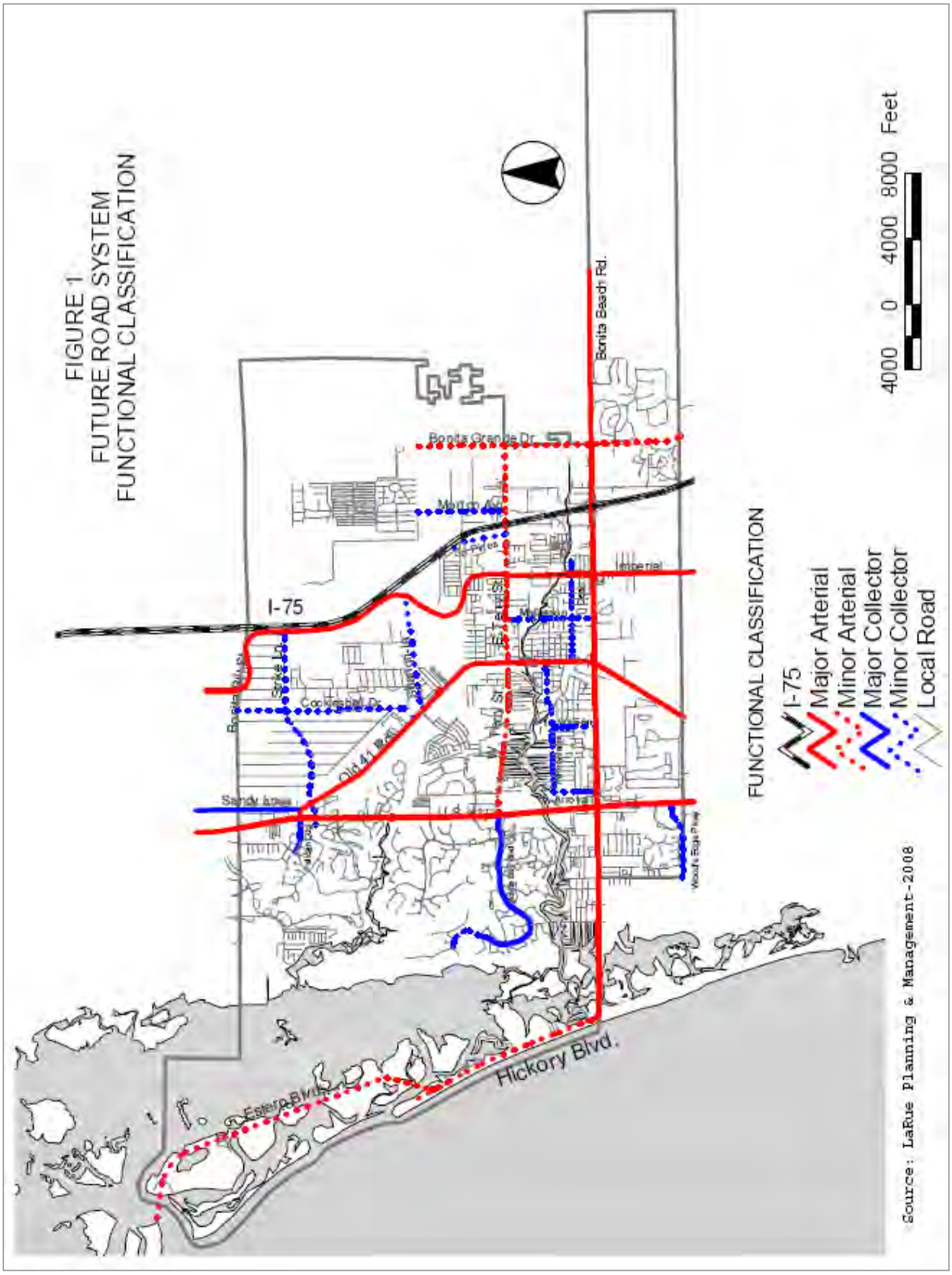
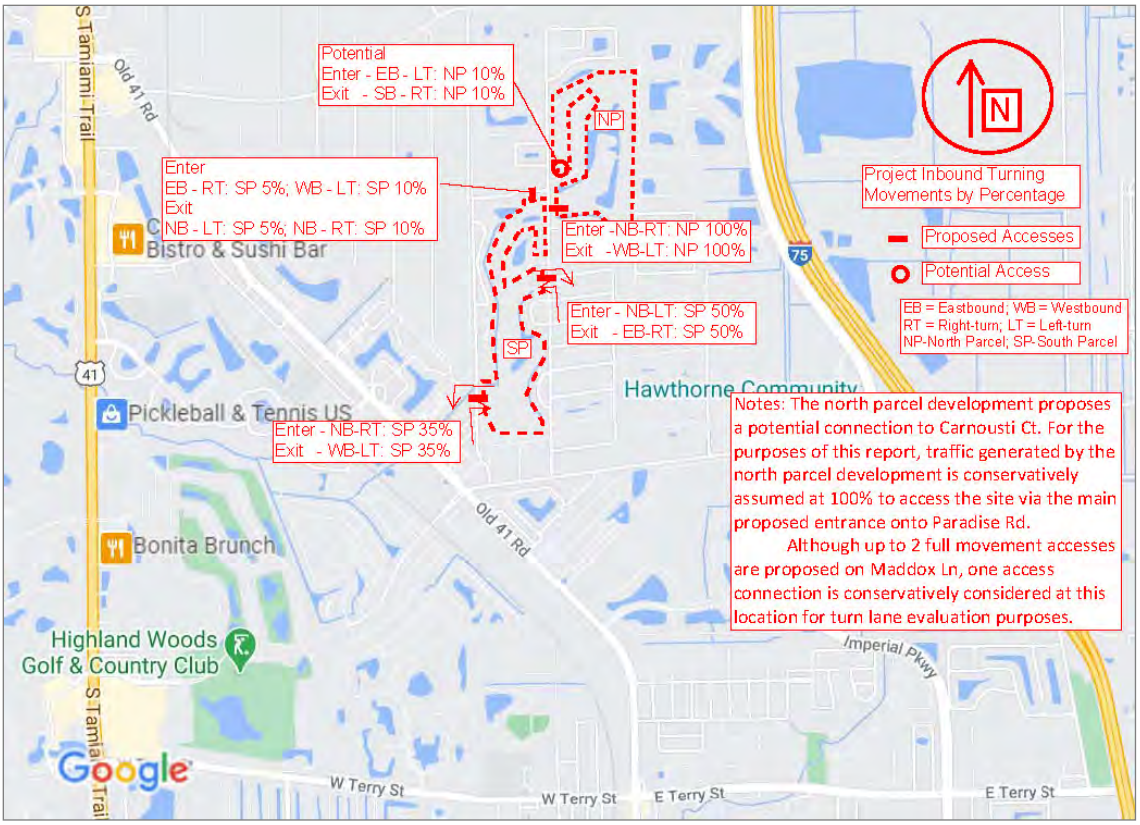
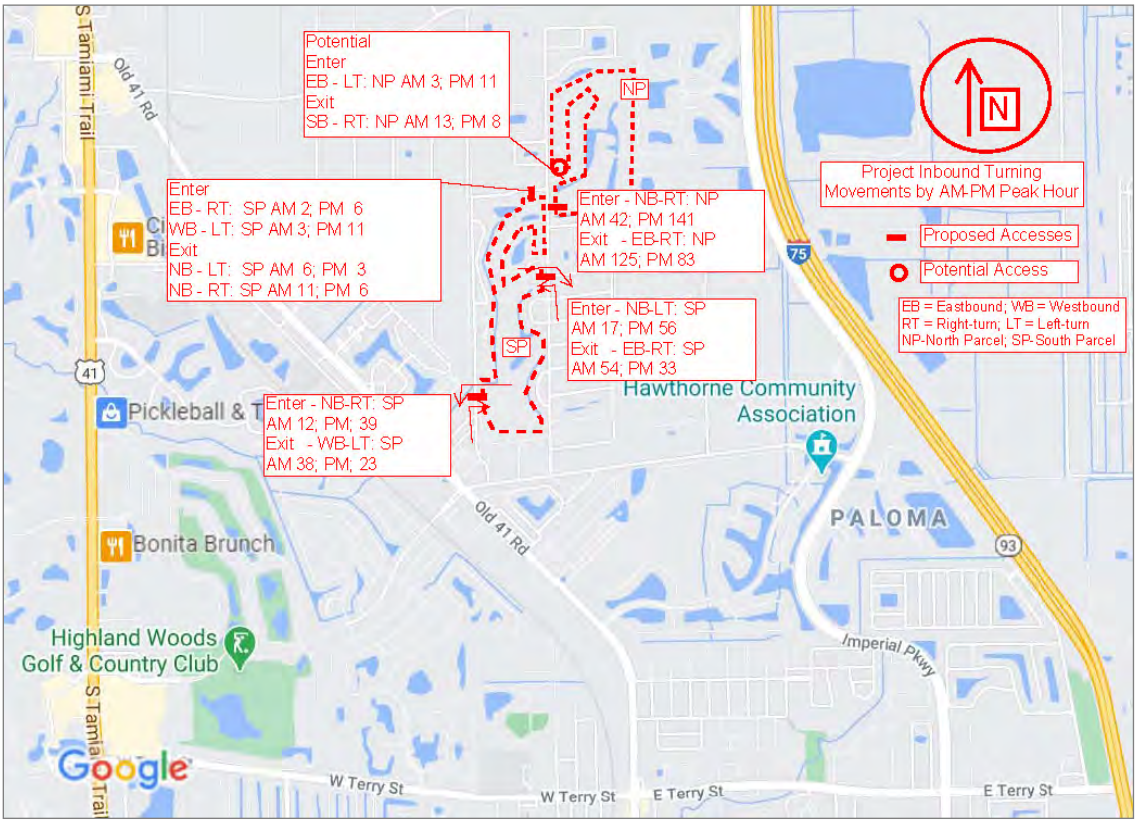


FIGURE 1
FUTURE ROAD SYSTEM
FUNCTIONAL CLASSIFICATION
4000 0 4000 8000 Feet
FUNCTIONAL CLASSIFICATION
I-75
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Local Road
I-75
Bonita Beach Rd.
Bonita Grande Dr.
Imperial
Old 41
Hickory Blvd.
Estero Blvd.
Source: LaRue Planning & Management-2008

Appendix H:

Project Turning Movement Exhibits


Potential
Enter - EB - LT: NP 10%
Exit - SB - RT: NP 10%
NP
Enter
EB - RT: SP 5%; WB - LT: SP 10%
Exit
NB - LT: SP 5%; NB - RT: SP 10%
Enter -NB-RT: NP 100%
Exit -WB-LT: NP 100%
Enter - NB-LT: SP 50%
Exit - EB-RT: SP 50%
SP
Enter - NB-RT: SP 35%
Exit - WB-LT: SP 35%
Project Inbound Turning Movements by Percentage
Proposed Accesses
Potential Access
EB = Eastbound; WB = Westbound
RT = Right-turn; LT = Left-turn
NP-North Parcel; SP-South Parcel
Notes: The north parcel development proposes a potential connection to Carnousti Ct. For the purposes of this report, traffic generated by the north parcel development is conservatively assumed at 100% to access the site via the main proposed entrance onto Paradise Rd.
Although up to 2 full movement accesses are proposed on Maddox Ln, one access connection is conservatively considered at this location for turn lane evaluation purposes.
S Tamiami Trail
Old 41 Rd
Bistro & Sushi Bar
Pickleball & Tennis US
Hawthorne Community
Bonita Brunch
Highland Woods Golf & Country Club
Imperial Pkwy
W Terry St
E Terry St
Google
41
75
N


Potential
Enter
EB - LT: NP AM 3; PM 11
Exit
SB - RT: NP AM 13; PM 8
NP
Enter
EB - RT: SP AM 2; PM 6
WB - LT: SP AM 3; PM 11
Exit
NB - LT: SP AM 6; PM 3
NB - RT: SP AM 11; PM 6
Enter - NB-RT: NP
AM 42; PM 141
Exit - EB-RT: NP
AM 125; PM 83
Enter - NB-LT: SP
AM 17; PM 56
Exit - EB-RT: SP
AM 54; PM 33
SP
Enter - NB-RT: SP
AM 12; PM; 39
Exit - WB-LT: SP
AM 38; PM; 23
Project Inbound Turning Movements by AM-PM Peak Hour
Proposed Accesses
Potential Access
EB = Eastbound; WB = Westbound
RT = Right-turn; LT = Left-turn
NP-North Parcel; SP-South Parcel
S Tamiami Trail
Old 41 Rd
Hawthorne Community Association
PALOMA
Bonita Brunch
Highland Woods Golf & Country Club
Imperial Pkwy
W Terry St
E Terry St
Google
41
75
93
N

Appendix I:

Site Access Turn Lane Warrant Analysis

Intersection	Movement	Posted Speed (mph)	AM Peak Hour (vph)	PM Peak Hour (vph)	Traffic Signal Present	Turn Lane Warrant per AC-11-4					
						Speed (mph)		Peak Hour Volume (vph)		Signal	2 Warrants Met?
						Criteria	Warrant	Criteria	Warrant	Warrant	
Carnousti Ct and North Parcel Potential Site Access Paradise Rd - Local Street	EB-LT	30	4	14	No	>/=30	Yes	>/=60*	No	No	No
Paradise Rd and North Parcel Site Access Paradise Rd - Local Street	NB-RT	30	42	141	No	>/=30	Yes	>/=60	Yes	No	Yes
Paradise Rd and South Parcel Site Access Paradise Rd - Local Street	NB-LT	30	17	56	No	>/=30	Yes	>/=60**	No	No	No
Cockleshell Dr and South Parcel Site Access Cockleshell Dr - Collector	NB-RT	30	12	39	No	>/=35	No	>/=45	No	No	No
Maddox Ln and South Parcel Site Access Maddox Ln - Local Street	EB-RT	30	2	6	No	>/=30	Yes	>/=60	No	No	No
Maddox Ln and South Parcel Site Access Maddox Ln - Local Street	WB-LT	30	3	11	No	>/=30	Yes	>/=60*	No	No	No

Notes: * The opposing though traffic is not expected to exceed the 500 vph threshold; ** Project peak hour volume does not meet warant threshold. In addition, the opposing though traffic was estimated as 401 vph and 417 vph during AM and PM Peak Hour, respectivelly (TIS Tables 6A and 6B) which is below the 500 vph threshold.

Appendix J:

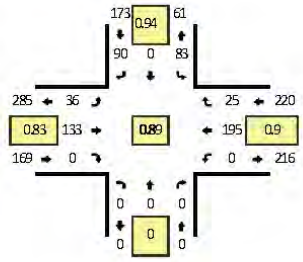
Raw Intersection Turning Movement Counts

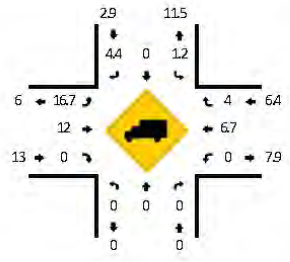
Shangri-La Rd and Paradise Rd Intersection

Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

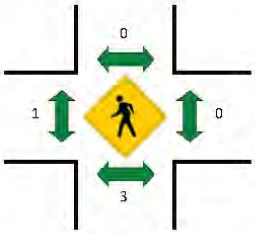
LOCATION: C. Paradise Rd -- Shangri-La Rd — **QC JOB #:** 15326905
CITY/STATE: Bonita Springs, FL — **DATE:** Wed, Dec 9 2020

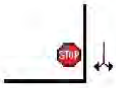
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

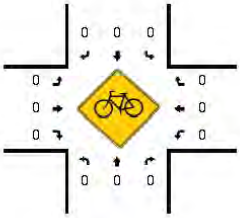


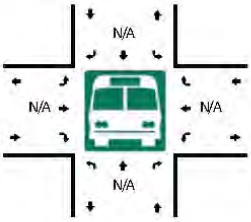


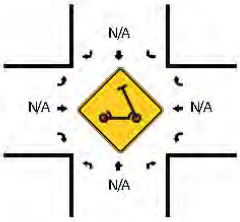
Quality Counts
DATA THAT DRIVES COMMUNITIES











R* = RTOR

15-Min Count Period Beginning At	C. Paradise Rd (Northbound)					C. Paradise Rd (Southbound)					Shangri-La Rd (Eastbound)					Shangri-La Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	21	0	17	0	0	5	32	0	0	0	0	46	5	0	0	126	
7:15 AM	0	0	0	0	0	23	0	21	0	0	5	31	0	0	0	0	52	6	0	0	138	
7:30 AM	0	0	0	0	0	20	0	25	0	0	10	35	0	0	0	0	43	7	0	0	140	
7:45 AM	0	0	0	0	0	19	0	27	0	0	16	35	0	0	0	0	54	7	0	0	158	562
8:00 AM	0	0	0	0	0	17	0	15	0	0	14	32	0	0	0	0	36	5	0	0	119	555
8:15 AM	0	0	0	0	0	28	0	19	0	0	7	27	0	0	0	0	33	11	0	0	125	542
8:30 AM	0	0	0	0	0	18	0	33	0	0	6	24	0	0	0	0	31	4	0	0	116	518
8:45 AM	0	0	0	0	0	14	0	26	0	0	15	14	0	0	0	0	39	9	0	0	117	477

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	76	0	108	0	0	64	140	0	0	0	0	216	28	0	0	632
Heavy Trucks	0	0	0			4	0	4			8	12	0			0	24	4			56
Buses																					
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

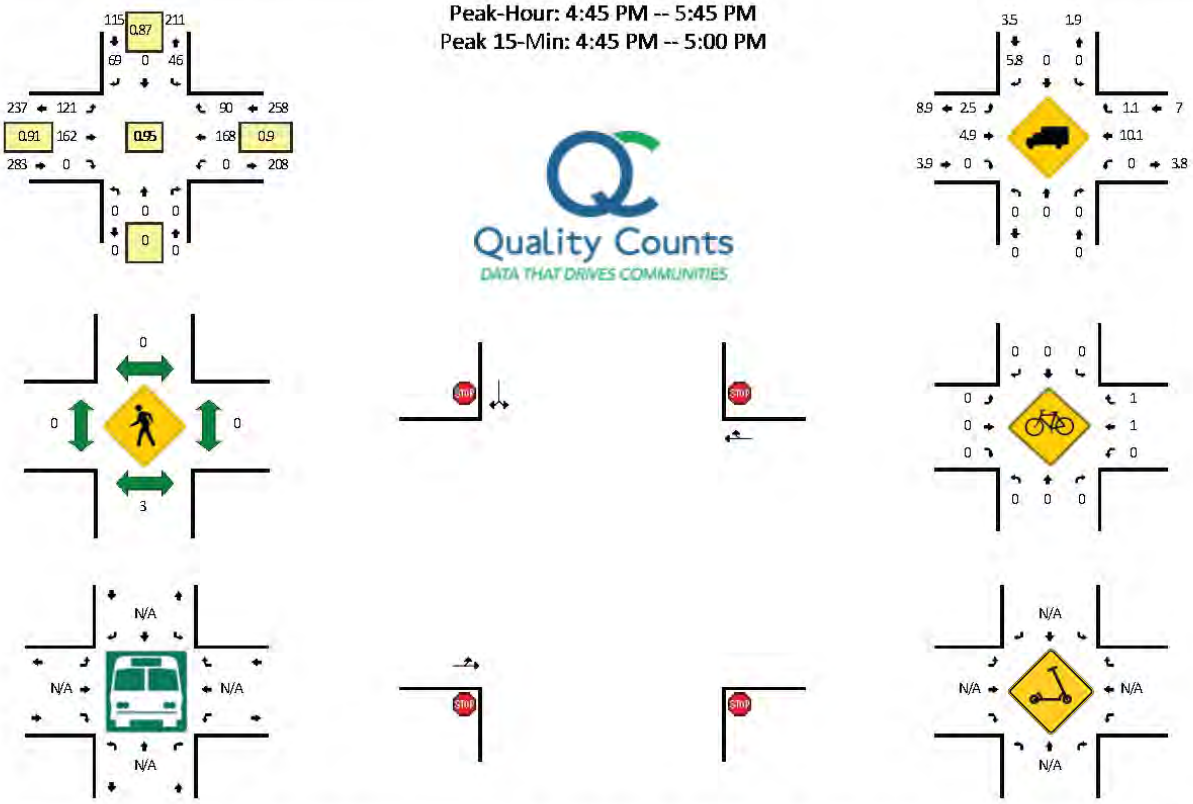
Comments:

Report generated on 12/16/2020 7:52 AM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: C. Paradise Rd -- Shangri-La Rd | **QC JOB #:** 15326906
CITY/STATE: Bonita Springs, FL | **DATE:** Wed, Dec 9 2020

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM



R* = RTOR

15-Min Count Period Beginning At	C. Paradise Rd (Northbound)					C. Paradise Rd (Southbound)					Shangri-La Rd (Eastbound)					Shangri-La Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	12	0	17	0	0	22	43	0	0	0	0	54	19	0	0	167	
4:15 PM	0	0	0	0	0	5	0	10	0	0	23	40	0	0	0	0	51	26	0	0	155	
4:30 PM	0	0	0	0	0	8	0	13	0	0	36	42	0	0	0	0	44	16	0	0	159	
4:45 PM	0	0	0	0	0	12	0	19	0	0	30	39	0	0	0	0	48	24	0	0	172	653
5:00 PM	0	0	0	0	0	7	0	19	0	0	28	38	0	0	0	0	43	19	0	0	154	640
5:15 PM	0	0	0	0	0	13	0	12	0	0	36	42	0	0	0	0	33	27	0	0	163	648
5:30 PM	0	0	0	0	0	14	0	19	0	0	27	43	0	0	0	0	44	20	0	0	167	656
5:45 PM	0	0	0	0	0	9	0	13	0	0	26	37	0	0	0	0	34	19	0	0	138	622

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	48	0	76	0	0	120	156	0	0	0	0	192	96	0	0	688
Heavy Trucks	0	0	0			0	0	8			4	4	0			0	24	4			44
Buses																					
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 12/16/2020 7:52 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Shangri-La Rd and Cockleshell Dr Intersection

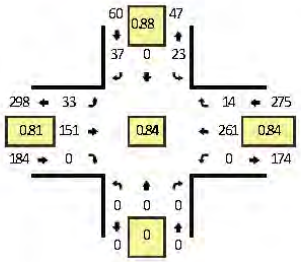
Type of peak hour being reported: Intersection Peak

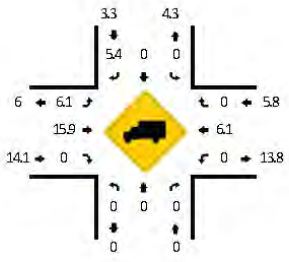
Method for determining peak hour: Total Entering Volume

LOCATION: B.Cockleshell Dr -- Shangri-La Rd
CITY/STATE: Bonita Springs, FL

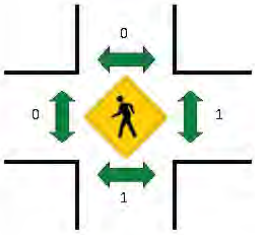
QC JOB #: 15326903
DATE: Wed, Dec 9 2020

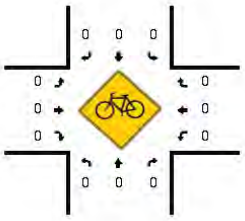
Peak-Hour: 7:15 AM – 8:15 AM
Peak 15-Min: 7:45 AM – 8:00 AM

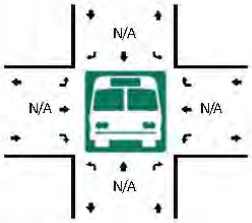


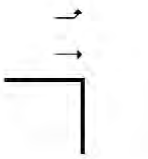


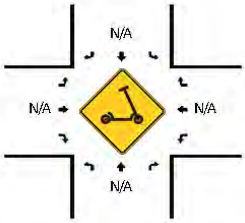
Quality Counts
DATA THAT DRIVES COMMUNITIES











R* = RTOR

15-Min Count Period Beginning At	B.Cockleshell Dr (Northbound)					B.Cockleshell Dr (Southbound)					Shangri-La Rd (Eastbound)					Shangri-La Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	7	0	8	0	0	4	31	0	0	0	0	59	5	0	0	114	
7:15 AM	0	0	0	0	0	6	0	9	0	0	4	32	0	0	0	0	70	1	0	0	122	
7:30 AM	0	0	0	0	0	7	0	6	0	0	6	37	0	0	0	0	66	4	0	0	126	
7:45 AM	0	0	0	0	0	7	0	8	0	0	15	42	0	0	0	0	81	1	0	0	154	516
8:00 AM	0	0	0	0	0	3	0	14	0	0	8	40	0	0	0	0	44	8	0	0	117	519
8:15 AM	0	0	0	0	0	8	0	11	0	0	8	25	0	0	0	0	47	4	0	0	103	500
8:30 AM	0	0	0	0	0	4	0	13	0	0	6	28	0	0	0	0	62	0	0	0	113	487
8:45 AM	0	0	0	0	0	3	0	8	0	0	13	28	0	0	0	0	65	2	0	0	119	452

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	28	0	32	0	0	60	168	0	0	0	0	324	4	0	0	616
Heavy Trucks	0	0	0			0	0	8			8	20	0			0	32	0			68
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 12/16/2020 7:52 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

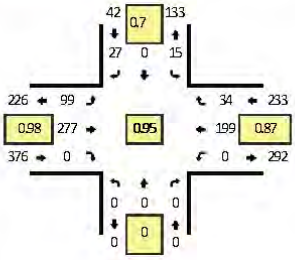
Type of peak hour being reported: Intersection Peak

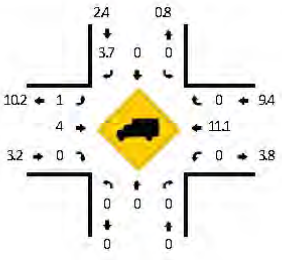
Method for determining peak hour: Total Entering Volume

LOCATION: B.Cockleshell Dr -- Shangri-La Rd
CITY/STATE: Bonita Springs, FL

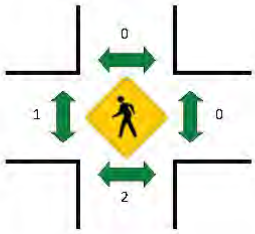
QC JOB #: 15326904
DATE: Wed, Dec 9 2020

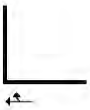
Peak-Hour: 4:30 PM – 5:30 PM
Peak 15-Min: 4:45 PM – 5:00 PM

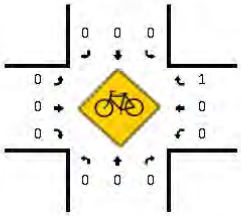


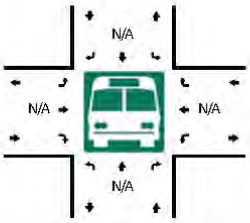


Quality Counts
DATA THAT DRIVES COMMUNITIES









R* = RTOR

15-Min Count Period Beginning At	B.Cockleshell Dr (Northbound)					B.Cockleshell Dr (Southbound)					Shangri-La Rd (Eastbound)					Shangri-La Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	5	0	3	0	0	15	63	0	0	0	0	64	6	0	0	156	
4:15 PM	0	0	0	0	0	2	0	5	0	0	20	63	0	0	0	0	54	6	0	0	150	
4:30 PM	0	0	0	0	0	4	0	3	0	0	25	70	0	0	0	0	47	10	0	0	159	
4:45 PM	0	0	0	0	0	1	0	9	0	0	23	72	0	0	0	0	58	9	0	0	172	637
5:00 PM	0	0	0	0	0	2	0	8	0	0	26	64	0	0	0	0	50	11	0	0	161	642
5:15 PM	0	0	0	0	0	8	0	7	0	0	25	71	0	0	0	0	44	4	0	0	159	651
5:30 PM	0	0	0	0	0	2	0	1	0	0	23	65	0	0	0	0	55	4	0	0	150	642
5:45 PM	0	0	0	0	0	6	0	3	0	0	20	61	0	0	0	0	42	8	0	0	140	610

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	4	0	36	0	0	92	288	0	0	0	0	232	36	0	0	688
Heavy Trucks	0	0	0			0	0	0			0	8	0			0	36	0			44
Buses																					
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 12/16/2020 7:52 AM

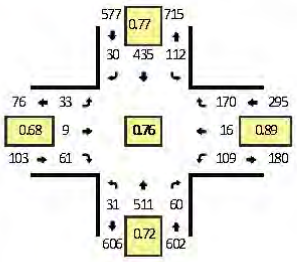
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

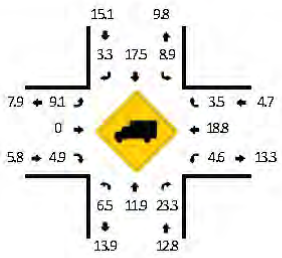
Old 41 Rd and Shangri-La Rd Intersection

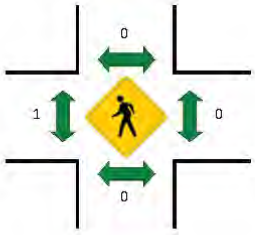
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

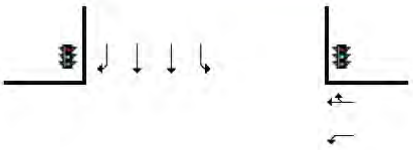
LOCATION: A.Old 41 Rd -- Shangri-La Rd — **QC JOB #:** 15326901
CITY/STATE: Bonita Springs, FL — **DATE:** Wed, Dec 9 2020

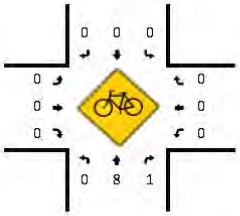
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

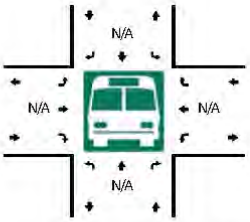


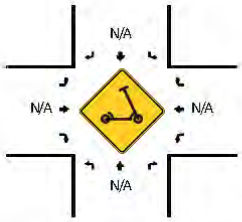












R* = RTOR

15-Min Count Period Beginning At	A.Old 41 Rd (Northbound)					A.Old 41 Rd (Southbound)					Shangri-La Rd (Eastbound)					Shangri-La Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	7	83	9	0	0	25	67	3	0	1	12	3	10	0	8	33	6	17	0	10	294	
7:15 AM	4	110	16	0	0	14	64	9	0	1	6	2	2	0	14	31	7	18	0	23	321	
7:30 AM	14	119	16	1	1	30	110	5	0	1	10	1	4	0	5	25	2	21	0	23	388	
7:45 AM	6	192	12	0	0	41	137	8	1	0	12	4	6	0	16	25	2	35	0	21	518	1521
8:00 AM	6	90	15	0	0	26	124	3	0	3	5	2	6	0	8	28	5	16	0	13	350	1577
8:15 AM	6	97	9	0	0	20	88	6	0	3	11	4	3	0	11	32	2	14	0	12	318	1574
8:30 AM	8	90	10	1	1	21	100	3	0	1	7	4	5	0	9	35	6	17	0	17	335	1521
8:45 AM	11	108	19	0	0	19	104	11	0	5	11	4	4	0	10	30	1	22	0	22	381	1384

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	24	768	48	0	0	164	548	32	4	0	48	16	88	0	64	100	8	224	0	84	2220
Heavy Trucks	0	56	12			12	60	0			8	0	0			12	4	20			184
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	8	0			0	0	0			0	0	0			0	0	0			8
Scooters																					

Comments:

Report generated on 12/16/2020 7:52 AM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

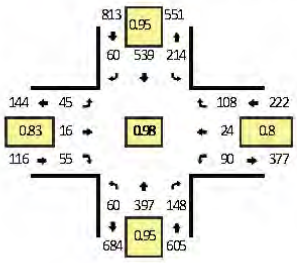
Type of peak hour being reported: Intersection Peak

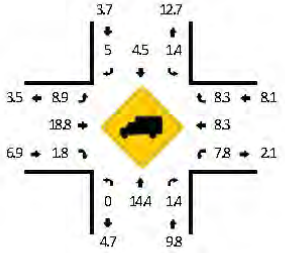
Method for determining peak hour: Total Entering Volume

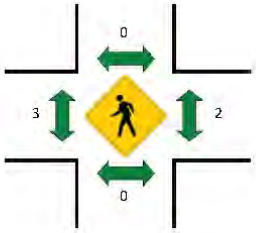
LOCATION: A.Old 41 Rd -- Shangri-La Rd
CITY/STATE: Bonita Springs, FL

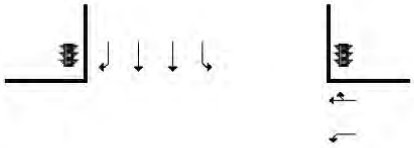
QC JOB #: 15326902
DATE: Wed, Dec 9 2020

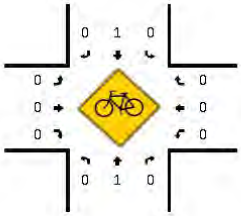
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

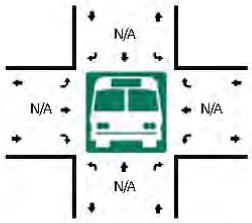


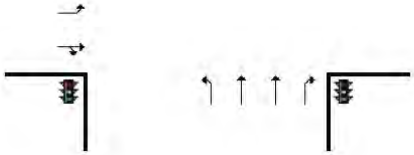


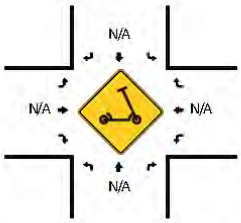












R* = RTOR

15-Min Count Period Beginning At	A.Old 41 Rd (Northbound)					A.Old 41 Rd (Southbound)					Shangri-La Rd (Eastbound)					Shangri-La Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	18	98	12	0	14	47	108	14	0	5	14	6	9	0	9	28	5	14	0	20	421	
4:15 PM	20	85	17	1	17	46	103	10	1	4	19	3	8	0	6	20	5	16	0	19	400	
4:30 PM	15	105	18	0	22	53	138	19	0	3	12	3	7	0	6	16	7	12	0	13	449	
4:45 PM	14	109	16	0	14	59	129	12	0	3	11	4	4	0	6	28	6	19	0	16	450	1720
5:00 PM	15	91	22	0	21	51	151	8	0	5	11	5	5	0	7	27	3	16	0	9	447	1746
5:15 PM	16	92	19	0	16	50	121	7	1	3	11	4	6	0	14	19	8	11	0	12	410	1756
5:30 PM	35	76	18	1	19	44	106	7	0	7	10	6	6	0	12	24	8	11	0	16	406	1713
5:45 PM	23	80	19	0	11	42	107	9	0	7	10	8	8	0	10	16	6	4	0	19	379	1642

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	56	436	120	0	56	236	516	60	0	12	44	16	40	0	24	112	24	140	0	64	1956
Heavy Trucks	0	64	4			0	20	4			8	4	4			12	4	20			144
Buses																					
Pedestrians		0					0					8					4				12
Bicycles	0	4	0			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 12/16/2020 7:52 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix K:

Projected Traffic at Subject Intersections

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 1252 BONITA SPRINGS AREA

MOCF: 2.00

WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	0.00	0.00
2	01/06/2019 - 01/12/2019	0.00	0.00
3	01/13/2019 - 01/19/2019	0.00	0.00
4	01/20/2019 - 01/26/2019	0.00	0.00
5	01/27/2019 - 02/02/2019	0.00	0.00
6	02/03/2019 - 02/09/2019	0.00	0.00
7	02/10/2019 - 02/16/2019	0.00	0.00
8	02/17/2019 - 02/23/2019	0.00	0.00
9	02/24/2019 - 03/02/2019	0.00	0.00
10	03/03/2019 - 03/09/2019	0.00	0.00
11	03/10/2019 - 03/16/2019	0.00	0.00
12	03/17/2019 - 03/23/2019	0.00	0.00
13	03/24/2019 - 03/30/2019	0.00	0.00
14	03/31/2019 - 04/06/2019	0.00	0.00
15	04/07/2019 - 04/13/2019	0.00	0.00
16	04/14/2019 - 04/20/2019	0.00	0.00
17	04/21/2019 - 04/27/2019	0.00	0.00
18	04/28/2019 - 05/04/2019	0.00	0.00
19	05/05/2019 - 05/11/2019	0.00	0.00
20	05/12/2019 - 05/18/2019	0.00	0.00
21	05/19/2019 - 05/25/2019	0.00	0.00
22	05/26/2019 - 06/01/2019	0.00	0.00
23	06/02/2019 - 06/08/2019	0.00	0.00
24	06/09/2019 - 06/15/2019	0.00	0.00
25	06/16/2019 - 06/22/2019	0.00	0.00
26	06/23/2019 - 06/29/2019	0.00	0.00
27	06/30/2019 - 07/06/2019	0.00	0.00
28	07/07/2019 - 07/13/2019	0.00	0.00
29	07/14/2019 - 07/20/2019	0.00	0.00
30	07/21/2019 - 07/27/2019	0.00	0.00
31	07/28/2019 - 08/03/2019	0.00	0.00
32	08/04/2019 - 08/10/2019	0.00	0.00
33	08/11/2019 - 08/17/2019	0.00	0.00
34	08/18/2019 - 08/24/2019	0.00	0.00
35	08/25/2019 - 08/31/2019	0.00	0.00
36	09/01/2019 - 09/07/2019	0.00	0.00
37	09/08/2019 - 09/14/2019	0.00	0.00
38	09/15/2019 - 09/21/2019	0.00	0.00
39	09/22/2019 - 09/28/2019	0.00	0.00
40	09/29/2019 - 10/05/2019	0.00	0.00
41	10/06/2019 - 10/12/2019	0.00	0.00
*42	10/13/2019 - 10/19/2019	0.00	0.00
*43	10/20/2019 - 10/26/2019	0.00	0.00
*44	10/27/2019 - 11/02/2019	0.00	0.00
*45	11/03/2019 - 11/09/2019	0.00	0.00
*46	11/10/2019 - 11/16/2019	0.00	0.00
*47	11/17/2019 - 11/23/2019	0.00	0.00
*48	11/24/2019 - 11/30/2019	0.00	0.00
*49	12/01/2019 - 12/07/2019	0.00	0.00
*50	12/08/2019 - 12/14/2019	0.00	0.00
*51	12/15/2019 - 12/21/2019	0.00	0.00
*52	12/22/2019 - 12/28/2019	0.00	0.00
*53	12/29/2019 - 12/31/2019	0.00	0.00

* PEAK SEASON

14-FEB-2020 15:39:19 830UPD 1_1252_PKSEASON.TXT

2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: DISTRICT
CATEGORY: 1252 BONITA SPRINGS AREA

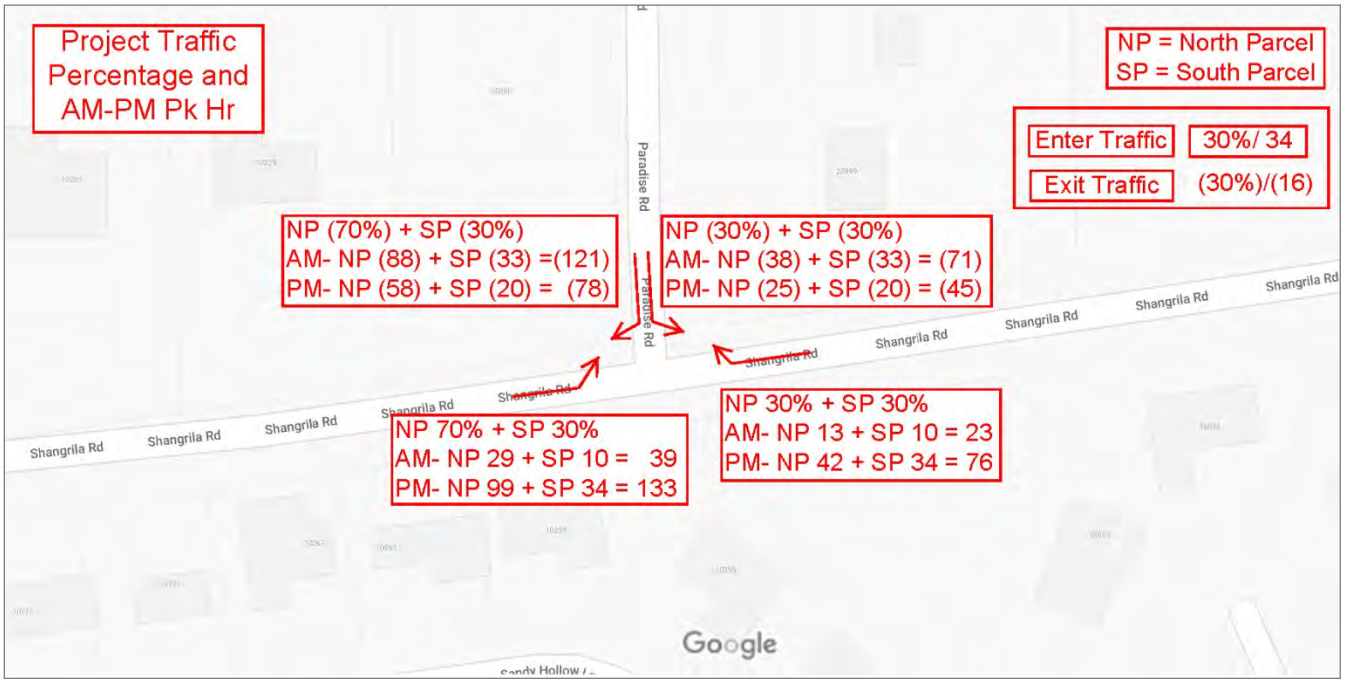
MOCF: 0.95

WEEK	DATES	SF	PSCF
1	01/01/2018 - 01/06/2018	1.00	1.05
2	01/07/2018 - 01/13/2018	1.00	1.05
3	01/14/2018 - 01/20/2018	0.99	1.04
4	01/21/2018 - 01/27/2018	0.98	1.03
* 5	01/28/2018 - 02/03/2018	0.97	1.02
* 6	02/04/2018 - 02/10/2018	0.95	1.00
* 7	02/11/2018 - 02/17/2018	0.94	0.99
* 8	02/18/2018 - 02/24/2018	0.94	0.99
* 9	02/25/2018 - 03/03/2018	0.94	0.99
*10	03/04/2018 - 03/10/2018	0.93	0.98
*11	03/11/2018 - 03/17/2018	0.93	0.98
*12	03/18/2018 - 03/24/2018	0.94	0.99
*13	03/25/2018 - 03/31/2018	0.95	1.00
*14	04/01/2018 - 04/07/2018	0.95	1.00
*15	04/08/2018 - 04/14/2018	0.96	1.01
*16	04/15/2018 - 04/21/2018	0.97	1.02
*17	04/22/2018 - 04/28/2018	0.98	1.03
18	04/29/2018 - 05/05/2018	1.00	1.05
19	05/06/2018 - 05/12/2018	1.01	1.06
20	05/13/2018 - 05/19/2018	1.02	1.07
21	05/20/2018 - 05/26/2018	1.03	1.08
22	05/27/2018 - 06/02/2018	1.03	1.08
23	06/03/2018 - 06/09/2018	1.04	1.09
24	06/10/2018 - 06/16/2018	1.04	1.09
25	06/17/2018 - 06/23/2018	1.05	1.11
26	06/24/2018 - 06/30/2018	1.05	1.11
27	07/01/2018 - 07/07/2018	1.06	1.12
28	07/08/2018 - 07/14/2018	1.06	1.12
29	07/15/2018 - 07/21/2018	1.07	1.13
30	07/22/2018 - 07/28/2018	1.06	1.12
31	07/29/2018 - 08/04/2018	1.05	1.11
32	08/05/2018 - 08/11/2018	1.04	1.09
33	08/12/2018 - 08/18/2018	1.03	1.08
34	08/19/2018 - 08/25/2018	1.04	1.09
35	08/26/2018 - 09/01/2018	1.04	1.09
36	09/02/2018 - 09/08/2018	1.05	1.11
37	09/09/2018 - 09/15/2018	1.05	1.11
38	09/16/2018 - 09/22/2018	1.04	1.09
39	09/23/2018 - 09/29/2018	1.03	1.08
40	09/30/2018 - 10/06/2018	1.02	1.07
41	10/07/2018 - 10/13/2018	1.01	1.06
42	10/14/2018 - 10/20/2018	1.00	1.05
43	10/21/2018 - 10/27/2018	1.00	1.05
44	10/28/2018 - 11/03/2018	1.00	1.05
45	11/04/2018 - 11/10/2018	1.00	1.05
46	11/11/2018 - 11/17/2018	1.00	1.05
47	11/18/2018 - 11/24/2018	1.00	1.05
48	11/25/2018 - 12/01/2018	1.00	1.05
49	12/02/2018 - 12/08/2018	1.00	1.05
50	12/09/2018 - 12/15/2018	1.00	1.05
51	12/16/2018 - 12/22/2018	1.00	1.05
52	12/23/2018 - 12/29/2018	0.99	1.04
53	12/30/2018 - 12/31/2018	0.99	1.04

* PEAK SEASON

26-FEB-2019 18:31:28 830UPD 1_1252_PKSEASON.TXT

Shangri-La Rd and Paradise Rd Intersection



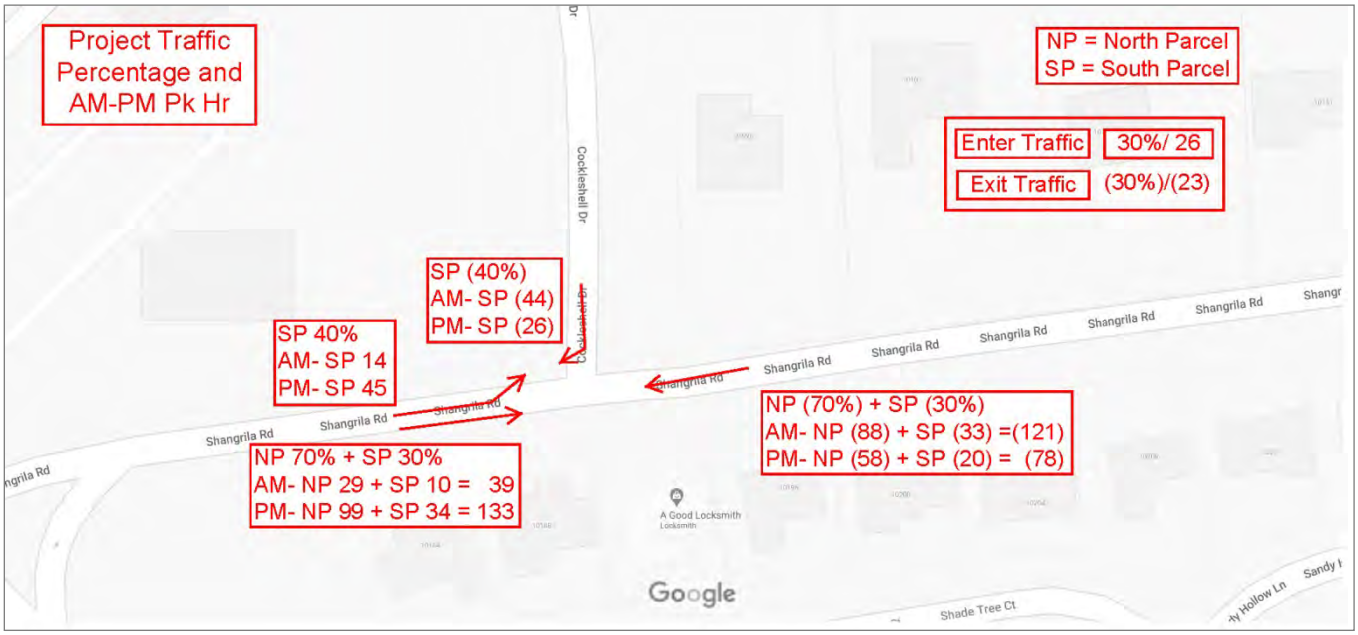
TURNING MOVEMENTS
INTERSECTION - SHANGRI-LA RD AND PARADISE RD
COUNT DATA - DATE - 12-09-2020
COUNT DATA - TIME - 7.00 AM - 9.00 AM
PEAK HOUR - 7.00 AM - 8.00 AM

AM PEAK HOUR FUTURE TRAFFIC									
	SHANGRI-LA RD						PARADISE RD		
	EASTBOUND			WESTBOUND			SOUTHBOUND		
	LEFT	THRU	TOTAL	THRU	RIGHT	TOTAL	LEFT	RIGHT	TOTAL
TMC	36	133	169	195	25	220	83	90	173
PSCF (2018 DATA)	1.05	1.05		1.05	1.05		1.05	1.05	
2021 BACKGROUND	**38**	**140**	**178**	**205**	**27**	**232**	**88**	**95**	**183**
GROWTH RATE	5.0%	5.0%		5.0%	5.0%		5.0%	5.0%	
YEARS TO BUILD-OUT	4	4		4	4		4	4	
2025 BACKGROUND	47	171	218	250	33	283	107	116	223
PROJECT TURNING VOLUMES	39	0	39	0	23	23	71	121	192
2025 BACKGROUND + PROJECT	**86**	**171**	**257**	**250**	**56**	**306**	**178**	**237**	**415**

TURNING MOVEMENTS
INTERSECTION - SHANGRI-LA RD AND PARADISE RD
COUNT DATA - DATE - 12-09-2020
COUNT DATA - TIME - 4.00 PM - 6.00 PM
PEAK HOUR - 4.45 PM - 5.45 PM

PM PEAK HOUR FUTURE TRAFFIC									
	SHANGRI-LA RD						PARADISE RD		
	EASTBOUND			WESTBOUND			SOUTHBOUND		
	LEFT	**THRU**	**TOTAL**	**THRU**	**RIGHT**	**TOTAL**	**LEFT**	**RIGHT**	**TOTAL**
TMC	121	162	283	168	90	258	46	69	115
PSCF (2018 DATA)	1.05	1.05		1.05	1.05		1.05	1.05	
2021 BACKGROUND	**128**	**171**	**299**	**177**	**95**	**272**	**49**	**73**	**122**
GROWTH RATE	5.0%	5.0%		5.0%	5.0%		5.0%	5.0%	
YEARS TO BUILD-OUT	4	4		4	4		4	4	
2025 BACKGROUND	156	208	364	216	116	332	60	89	149
PROJECT TURNING VOLUMES	133	0	133	0	76	76	45	78	123
2025 BACKGROUND + PROJECT	**289**	**208**	**497**	**216**	**192**	**408**	**105**	**167**	**272**

Shangri-La Rd and Cockleshell Dr Intersection



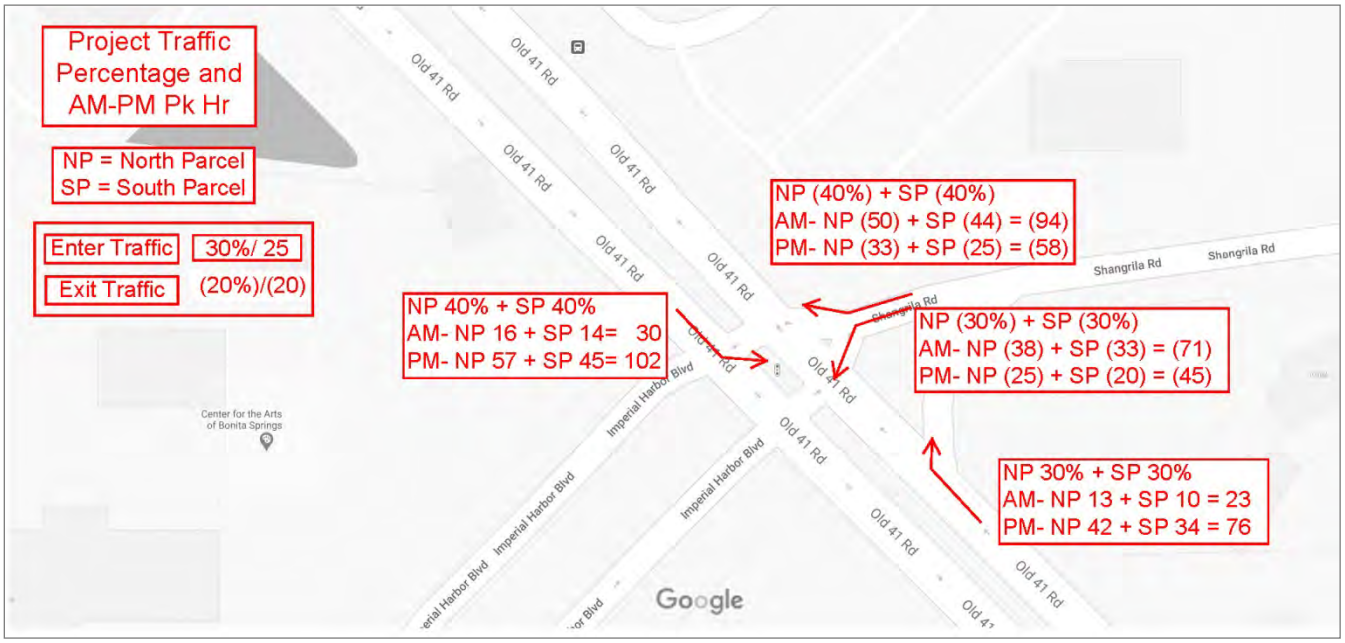
TURNING MOVEMENTS
INTERSECTION - SHANGRI-LA RD AND COCKLESHELL DR
COUNT DATA - DATE - 12-09-2020
COUNT DATA - TIME - 7.00 AM - 9.00 AM
PEAK HOUR - 7.15 AM - 8.15 AM

AM PEAK HOUR FUTURE TRAFFIC									
	SHANGRI-LA RD						COCKLESHELL DR		
	EASTBOUND			WESTBOUND			SOUTHBOUND		
	LEFT	THRU	TOTAL	THRU	RIGHT	TOTAL	LEFT	RIGHT	TOTAL
TMC	33	151	184	261	14	275	23	37	60
PSCF (2018 DATA)	1.05	1.05		1.05	1.05		1.05	1.05	
2021 BACKGROUND	**35**	**159**	**194**	**275**	**15**	**290**	**25**	**39**	**64**
GROWTH RATE	5.0%	5.0%		5.0%	5.0%		3.2%	3.2%	
YEARS TO BUILD-OUT	4	4		4	4		4	4	
2025 BACKGROUND	43	194	237	335	19	354	29	45	74
PROJECT TURNING VOLUMES	14	39	53	121	0	121	0	44	44
2025 BACKGROUND + PROJECT	**57**	**233**	**290**	**456**	**19**	**475**	**29**	**89**	**118**

TURNING MOVEMENTS
INTERSECTION - SHANGRI-LA RD AND COCKLESHELL DR
COUNT DATA - DATE - 12-09-2020
COUNT DATA - TIME - 4.00 PM - 6.00 PM
PEAK HOUR - 4.30 PM - 5.30 PM

PM PEAK HOUR FUTURE TRAFFIC									
	SHANGRI-LA RD						COCKLESHELL DR		
	EASTBOUND			WESTBOUND			SOUTHBOUND		
	LEFT	**THRU**	**TOTAL**	**THRU**	**RIGHT**	**TOTAL**	**LEFT**	**RIGHT**	**TOTAL**
TMC	99	277	376	199	34	233	15	27	42
PSCF (2018 DATA)	1.05	1.05		1.05	1.05		1.05	1.05	
2021 BACKGROUND	**104**	**291**	**395**	**209**	**36**	**245**	**16**	**29**	**45**
GROWTH RATE	5.0%	5.0%		5.0%	5.0%		3.2%	3.2%	
YEARS TO BUILD-OUT	4	4		4	4		4	4	
2025 BACKGROUND	127	354	481	255	44	299	19	33	52
PROJECT TURNING VOLUMES	45	133	178	78	0	78	0	45	45
2025 BACKGROUND + PROJECT	**172**	**487**	**659**	**333**	**44**	**377**	**19**	**78**	**97**

Old 41 Rd and Shangri-La Rd Intersection



TURNING MOVEMENTS
INTERSECTION - OLD 41 RD AND SHANGRI-LA RD / IMPERIAL HARBOR BLVD
COUNT DATA - DATE - 12-09-2020
COUNT DATA - TIME - 7.00 AM - 9.00 AM
PEAK HOUR - 7.15 AM - 8.15 AM

AM PEAK HOUR FUTURE TRAFFIC																
	OLD 41 RD								SHANGRI-LA RD / IMPERIAL HARBOR BLVD							
	SOUTHBOUND				NORTHBOUND				WESTBOUND				EASTBOUND			
	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL
TMC	112	435	30	577	31	511	60	602	109	16	170	295	33	9	61	103
PSCF (2018 DATA)	1.05	1.05	1.05		1.05	1.05	1.05		1.05	1.05	1.05		1.05	1.05	1.05	
2021 BACKGROUND VOLUME	**118**	**457**	**32**	**607**	**33**	**537**	**63**	**633**	**115**	**17**	**179**	**311**	**35**	**10**	**65**	**110**
GROWTH RATE	4.0%	4.0%	4.0%		2.0%	2.0%	2.0%		5.0%	5.0%	5.0%		2.0%	2.0%	2.0%	
YEARS TO BUILD-OUT	4	4	4		4	4	4		4	4	4		4	4	4	
2025 BACKGROUND	139	535	38	712	36	582	69	687	140	21	218	379	38	11	71	120
PROJECT TURNING VOLUMES	30	0	0	30	0	0	23	23	71	0	94	165	0	0	0	0
2025 BACKGROUND + PROJECT	**169**	**535**	**38**	**742**	**36**	**582**	**92**	**710**	**211**	**21**	**312**	**544**	**38**	**11**	**71**	**120**

TURNING MOVEMENTS
INTERSECTION - OLD 41 RD AND SHANGRI-LA RD / IMPERIAL HARBOR BLVD
COUNT DATA - DATE - 12-09-2020
COUNT DATA - TIME - 4.00 PM - 6.00 PM
PEAK HOUR - 4.30 PM - 5.30 PM

PM PEAK HOUR FUTURE TRAFFIC																
	OLD 41 RD								SHANGRI-LA RD / IMPERIAL HARBOR BLVD							
	SOUTHBOUND				NORTHBOUND				WESTBOUND				EASTBOUND			
	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL
TMC	214	539	60	813	60	397	148	605	90	24	108	222	45	16	55	116
PSCF (2018 DATA)	1.05	1.05	1.05		1.05	1.05	1.05		1.05	1.05	1.05		1.05	1.05	1.05	
2021 BACKGROUND VOLUME	**225**	**566**	**63**	**854**	**63**	**417**	**156**	**636**	**95**	**26**	**114**	**235**	**48**	**17**	**58**	**123**
GROWTH RATE	4.0%	4.0%	4.0%		2.0%	2.0%	2.0%		5.0%	5.0%	5.0%		2.0%	2.0%	2.0%	
YEARS TO BUILD-OUT	4	4	4		4	4	4		4	4	4		4	4	4	
2025 BACKGROUND	264	663	74	1,001	69	452	169	690	116	32	139	287	52	19	63	134
PROJECT TURNING VOLUMES	102	0	0	102	0	0	76	76	45	0	58	103	0	0	0	0
2025 BACKGROUND + PROJECT	**366**	**663**	**74**	**1,103**	**69**	**452**	**245**	**766**	**161**	**32**	**197**	**390**	**52**	**19**	**63**	**134**

Appendix L:

Intersections – Turn Lane Warrant Analysis

Intersection - 2025 Background with no Project Traffic	Movement	Posted Speed (mph)	AM Peak Hour (vph)	PM Peak Hour (vph)	Traffic Signal Present	Turn Lane Warrant per AC-11-4						2 Warrants Met?
						Speed (mph)		Peak Hour Volume (vph)		Signal		
						Criteria	Warrant	Criteria	Warrant	Warrant		
Shangri-La Rd and Paradise Rd Paradise Rd - Local Street; Shangri-La Rd - Collector	WB-RT	30	33	116	No	>/=35	No	>/=45	Yes	No		No
	EB-LT	30	47	156	No	>/=35	No	>/=25	Yes	No		No
	SB-RT	30	116	89	No	>/=30	Yes	>/=120	No	No		No
	SB-LT	30	107	60	No	>/=30	Yes	>/=90	No	No		No
Shangri-La Rd and Cockleshell Dr Cockleshell Dr - Collector; Shangri-La Rd - Collector	WB-RT	30	19	44	No	>/=35	No	>/=45	No	No		No
	EB-LT	30	43	127	No	>/=35	No	>/=24*	Yes	No		No
	SB-RT	30	45	33	No	>/=35	No	>/=90	No	No		No
	SB-LT	30	29	19	No	>/=35	No	>/=60	No	No		No
Old 41 Rd and Shangri-La Rd Old 41 Rd - Arterial; Shangri-La Rd - Collector	NB-RT	35	69	169	Yes	>/=35	Yes	>/=30	Yes	Yes		Yes
	SB-LT	35	139	264	Yes	>/=35	Yes	>/=10**	Yes	Yes		Yes
	WB-RT	30	218	139	Yes	>/=35	No	>/=90	Yes	Yes		Yes
	WB-LT	30	140	116	Yes	>/=35	No	>/=60	Yes	Yes		Yes

Notes: *Estimated 2-way through volume is bewteen 600 and 699; **Estimated 2-way through volume is 1,000 or more

Intersection - 2025 Background with Project Traffic	Movement	Posted Speed (mph)	AM Peak Hour (vph)	PM Peak Hour (vph)	Traffic Signal Present	Turn Lane Warrant per AC-11-4					
						Speed (mph)		Peak Hour Volume (vph)		Signal	2 Warrants Met?
						Criteria	Warrant	Criteria	Warrant	Warrant	
Shangri-La Rd and Paradise Rd Paradise Rd - Local Street; Shangri-La Rd - Collector	WB-RT	30	56	192	No	>/=35	No	>/=45	Yes	No	No
	EB-LT	30	86	289	No	>/=35	No	>/=25	Yes	No	No
	SB-RT	30	237	167	No	>/=30	Yes	>/=120	Yes	No	Yes
	SB-LT	30	178	105	No	>/=30	Yes	>/=90	Yes	No	Yes
Shangri-La Rd and Cockleshell Dr Cockleshell Dr - Collector; Shangri-La Rd - Collector	WB-RT	30	19	44	No	>/=35	No	>/=45	No	No	No
	EB-LT	30	57	172	No	>/=35	No	>/=23*	Yes	No	No
	SB-RT	30	89	78	No	>/=35	No	>/=90	No	No	No
	SB-LT	30	29	19	No	>/=35	No	>/=60	No	No	No
Old 41 Rd and Shangri-La Rd Old 41 Rd - Arterial; Shangri-La Rd - Collector	NB-RT	35	92	245	Yes	>/=35	Yes	>/=30	Yes	Yes	Yes
	SB-LT	35	169	366	Yes	>/=35	Yes	>/=10**	Yes	Yes	Yes
	WB-RT	30	312	197	Yes	>/=35	No	>/=90	Yes	Yes	Yes
	WB-LT	30	211	161	Yes	>/=35	No	>/=60	Yes	Yes	Yes

Notes: *Estimated 2-way through volume is bewteen 700 and 799; **Estimated 2-way through volume is 1,000 or more

Appendix M:

Synchro Analysis Support

Old 41 Rd and Shangri-La Rd Intersection – Controller Timing Plan

BONITA BEACH EAST - OLD US 41 - OLD 41 and IMPERIAL HARBOR ISO ASC3

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB								
Min Green	5	20	5	8	5	20	5	8	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	29	0	19	0	29	0	19	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	5.0	2.0	2.0	2.0	5.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	20	50	20	25	20	50	20	25	0	0	0	0	0	0	0	0
Max 2	30	65	25	35	30	65	25	35	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.7	4.0	4.0	4.0	4.7	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	2.0	2.5	2.0	2.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

FDOT 2019 Annual Average Daily Traffic Report – T Factor

FLORIDA DEPARTMENT OF TRANSPORTATION
2019 ANNUAL AVERAGE DAILY TRAFFIC REPORT - REPORT TYPE: ALL

COUNTY: 12 LEE

SITE	SITE TYPE	DESCRIPTION	DIRECTION 1		DIRECTION 2		AADT TWO-WAY	"K" FCTR	"D" FCTR	"T" FCTR
0169		SANTA BARBARA BLVD N, N OF KISMET PKWY	N 2400E	S	2400E		4800 F	9.0	54.9F	8.2F
0170		SHANGRA LA RD, E OF OLD 41 RD	E	E W		E	5500 F	9.0	0.0	3.4F
0171		SPRING CREEK RD, S OF COCONUT RD	N 850E	S	750E	1600 F		9.0	53.3F	7.7F
0172		SUNRISE BLVD, E OF BELL BLVD	E 350	W	350	700 C		9.0	54.8F	7.7F
0173		SUNSHINE BLVD N, N OF 12TH ST W	N 0	S	0	12500 C		9.0	0.0	9.5F
0174		TROPICANA PWKY, W OF BURNT STORE RD	E	E W		E	2700 F	9.0	0.0	8.2F
0175		VAN BUREN PKWY, E OF BURNT STORE RD	E 900	W	900	1800 C		9.0	54.9F	8.2F
0176		WILDWOOD PKWY, W OF COUNTRY CLUB BLVD	E	E W		E	4200 F	9.0	0.0	3.7F
0177		WOODS EDGE PKWY, E OF VANDERBILT DR	E	E W		E	2700 F	9.0	0.0	7.7F
0178		LUCKETT RD, E OF I-75	E 3800E	W	3700E	7500 F		9.0	53.3F	7.7F
0179		HANCOCK BRIDGE PKWY, E OF SR 78/PINE ISLAND RD	E	E W		E	13000 F	9.0	53.8D	8.2F
0180		KISMET PKWY, E OF EL DORADO BLVD	E 1000E	W	1300E	2300 F		9.0	54.9F	8.2F
0181		ORIOLE RD, S OF ALICO RD	N 1300E	S	1400E	2700 F		9.0	53.3F	3.2F
0182		PALOMINO LN, N OF DANIELS PKWY	N 4500E	S	4300E	9000 F		9.0	53.3F	7.7F
0183		PARK MEADOWS DR, W OF US 41	E 1900E	W	2100E	4000 F		9.0	54.8F	4.4F
0184	T	SR-93/I-75, 1.7 MI S OF DANIELS PKWY U/P,LEE CO	N 53666	S	54793	108459 C		9.0	58.7A	9.9A

SITE TYPE : BLANK= PORTABLE; T= TELEMETERED
"K" FACTOR : DEPARTMENT ADOPTED STANDARD K FACTOR BEGINNING WITH COUNT YEAR 2011
AADT FLAGS : C= COMPUTED; E= MANUAL EST; F= FIRST YEAR EST; S= SECOND YEAR EST; T= THIRD YEAR EST; R= FOURTH YEAR EST;
V= FIFTH YEAR EST; 6= SIXTH YEAR EST; X= UNKNOWN
"D/T" FLAGS : A= ACTUAL; F= FACTOR CATG; D= DIST FUNCL; P= PRIOR YEAR; S= STATEWIDE DEFAULT; W= ONE-WAY ROAD; X= CROSS REF

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FLORIDA DEPARTMENT OF TRANSPORTATION
2019 ANNUAL AVERAGE DAILY TRAFFIC REPORT - REPORT TYPE: ALL

COUNTY: 12 LEE

SITE	SITE TYPE	DESCRIPTION	DIRECTION 1		DIRECTION 2		AADT TWO-WAY		"K" FCTR	"D" FCTR	"T" FCTR
4623		ALABAMA ROAD, NORTH OF S.R. 82	N	E	S	E	8400	F	9.0	53.8D	6.2P
4625		STRING FELLOW ROAD, NORTH OF C.R. 78 / PINE ISLA	N	E	S	E	6600	F	9.5	55.7S	9.1P
4641		C.R. 887, NORTH OF BONITA BEACH ROAD	N	E	S	E	12600	F	9.0	59.6S	4.8P
4650		NORTH RIVER ROAD, EAST OF S.R. 31	E	1700E	W	1700E	3400	F	9.5	54.9F	12.5P
4654		C.R. 78, EAST OF BROADWAY STREET	E	1400E	W	1500E	2900	F	9.5	54.9F	15.0P
4656		BUCKINGHAM / ORANGE ROAD, NORTH OF ASTORIA AVENU	N	5000E	S	5200E	10200	F	9.5	54.9F	13.9P
4901		WEST GULF DRIVE, W OF ISLAND INN RD	E	0	W	0	4400	C	9.5	55.7S	3.1F
4902		HANSON ST, E OF FORD	E	3600	W	3400	7000	C	9.0	53.3F	15.2A
4903		CR 865/BONITA BEACH RD, E OF BONITA GRANDE DR	E	0	W	0	12500	C	9.0	59.6S	4.2A
4904		WEST GULF DRIVE, W OF CASA YBEL ROAD	E	0	W	0	4200	C	9.0	59.6S	3.9A
5001		SR 867, N OF SHADDELEE LN/S OF WINKLER LC331	N	8100	S	8400	16500	C	9.0	53.3F	4.1A
5005		SR 82/M L KING JR BLVD, W OF CENTRAL AVE	E	8100E	W	8300E	16400	F	9.0	53.3F	8.2F
5006		SR82/M L KING JR BLVD, E OF SR45/US41/CLEVELAND	E	5400	W	4000	9400	C	9.0	53.3F	8.2F
5007		SR 80/PALM BCH BLVD, SW OF VERONICA SHOEMAKER BL	E	9200	W	11000	20200	C	9.0	53.3F	6.2A
5009		SR 82/M L KING JR BLVD, W OF HENDERSON AVE	E	18500E	W	18500E	37000	F	9.0	53.3F	4.9F
5010		SR 45/US 41/TAMIAMI TRAIL, SOUTH OF HANSON STREE	N	24000	S	21500	45500	C	9.0	53.3F	3.5F

SITE TYPE : BLANK= PORTABLE; T= TELEMETERED
"K" FACTOR : DEPARTMENT ADOPTED STANDARD K FACTOR BEGINING WITH COUNT YEAR 2011
AADT FLAGS : C= COMPUTED; E= MANUAL EST; F= FIRST YEAR EST; S= SECOND YEAR EST; T= THIRD YEAR EST; R= FOURTH YEAR EST; V= FIFTH YEAR EST; 6= SIXTH YEAR EST; X= UNKNOWN
"D/T" FLAGS : A= ACTUAL; F= FACTOR CATG; D= DIST FUNCL; P= PRIOR YEAR; S= STATEWIDE DEFAULT; W= ONE-WAY ROAD; X= CROSS REF

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FDOT 2020 Quality/Level of Service Handbook Excerpt – Peak Hour Factor

5.3.1 Multimodal Transportation Districts (MMTD)

The purpose of MMTDs is to encourage desirable transportation environments for all users, including transit passengers, pedestrians, cyclists, and motorists. The designation of such districts recognizes the inherent, integral relationship between transportation, land use, and urban design and the degree to which each of these elements affect the others. Local governments opting to designate an MMTD assign secondary priority to vehicle mobility and primary priority to assuring a safe, comfortable, and attractive pedestrian environment, with convenient connections to transit. FDOT supports local governments that are committed to such efforts. Implementing MMTDs should help foster the use of multiple modes of transportation, leading to a reduction in automobile use while maintaining high mobility characteristics in the area.

The primary way FDOT supports these designated areas is through its LOS targets. FDOT promotes lower acceptable automobile travel speeds for longer durations in the planning, design, and operations of its facilities.

5.4. Directional Distribution Factor (D)

The peak hour D factor is the proportion of an hour's total volume occurring in the higher volume direction.

The preferred approach to obtain D factor data is from the FTO Web Application, which provides a D factor for all state roads. The FTO Web Application reports the average of measured D values around the 200th highest hour from nearby and comparable roadway sites. The statewide minimum acceptable D factor is 0.51 (this is not the default valueand should only be used in an LOS analysis if adequate justification is provided for the specific roadway). The D factor of 0.55 was used in the Generalized Service Volume Tables for all facility and area types. Using such an approach provides statewide consistency and reasonable accuracy in the values indicated and at a minimum cost. Additional guidance and the recommended range of D factors can be found in the FDOT PTF Handbook.

5.5. Peak Hour Factor (PHF)

The peak hour factor (PHF) is the hourly volume divided by the peak 15-minute rate of flow within the peak hour, specifically:

$$PHF = \frac{(Hourly\ Volume)}{4(Peak\ 15-minute)}$$

The planning-level approach for addressing volume variations within the study hour has been adopted within this handbook. PHF based on area type were used to develop the vehicular service volumes in this Q/LOS Handbook. The PHF associated with each area type is:

- Urbanized areas: 0.95
- Transitioning/urban areas: 0.92
- Rural areas: 0.88

The PHF associated with the area type is consistent with the sixth edition of the HCM. For more information on the PHF, refer to FDOT's PTF Handbook.

Appendix N:

Intersection Analyses – Synchro Reports

Old 41 Rd and Shangri-La Rd Intersection

HCM 6th Signalized Intersection Summary
3: Imperial Harbor Blvd & Old 41 Rd 06/01/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	11	71	140	21	218	36	582	69	139	535	38
Future Volume (veh/h)	38	11	71	140	21	218	36	582	69	139	535	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	41	12	77	152	23	237	39	633	0	151	582	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	285	39	247	446	29	302	345	969		348	1038	463
Arrive On Green	0.07	0.18	0.18	0.10	0.21	0.21	0.07	0.28	0.00	0.09	0.30	0.30
Sat Flow, veh/h	1781	218	1400	1753	140	1441	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	41	0	89	152	0	260	39	633	0	151	582	41
Grp Sat Flow(s),veh/h/ln	1781	0	1618	1753	0	1581	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	1.3	0.0	3.4	4.9	0.0	11.1	1.1	11.5	0.0	4.3	10.1	1.4
Cycle Q Clear(g_c), s	1.3	0.0	3.4	4.9	0.0	11.1	1.1	11.5	0.0	4.3	10.1	1.4
Prop In Lane	1.00		0.87	1.00		0.91	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	0	286	446	0	331	345	969		348	1038	463
V/C Ratio(X)	0.14	0.00	0.31	0.34	0.00	0.79	0.11	0.65		0.43	0.56	0.09
Avail Cap(c_a), veh/h	832	0	734	1319	0	1071	370	1904		435	2098	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	25.7	20.5	0.0	26.8	16.1	22.7	0.0	16.8	21.1	18.1
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.5	0.0	4.1	0.1	0.8	0.0	0.9	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.3	2.0	0.0	4.4	0.4	4.5	0.0	1.6	3.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	26.3	20.9	0.0	30.9	16.2	23.5	0.0	17.6	21.6	18.2
LnGrp LOS	C	A	C	C	A	C	B	C		B	C	B
Approach Vol, veh/h		130			412			672	A		774	
Approach Delay, s/veh		24.8			27.2			23.1			20.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	28.1	11.0	21.5	12.4	26.7	13.3	19.2
Change Period (Y+Rc), s	6.0	6.7	6.0	6.5	6.0	6.7	6.0	6.5
Max Green Setting (Gmax), s	6.0	43.3	27.0	48.5	10.0	39.3	43.0	32.5
Max Q Clear Time (g_c+I1), s	3.1	12.1	3.3	13.1	6.3	13.5	6.9	5.4
Green Ext Time (p_c), s	0.0	4.3	0.1	1.9	0.1	4.4	0.4	0.5

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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Lanes, Volumes, Timings
3: Imperial Harbor Blvd & Old 41 Rd 06/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	11	71	140	21	218	36	582	69	139	535	38
Future Volume (vph)	38	11	71	140	21	218	36	582	69	139	535	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		450	235		400	305		285
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.870			0.863				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1621	0	1736	1577	0	1719	3438	1538	1719	3438	1538
Flt Permitted	0.599			0.400			0.431			0.269		
Satd. Flow (perm)	1116	1621	0	731	1577	0	780	3438	1538	487	3438	1538
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		77			237							156
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		647			591			719			1028	
Travel Time (s)		14.7			13.4			14.0			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	41	12	77	152	23	237	39	633	75	151	582	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	89	0	152	260	0	39	633	75	151	582	41
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6		Free	2		2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	32.2	38.5		49.0	49.0		12.0	45.0		12.1	42.7	42.7
Total Split (s)	33.0	39.0		49.0	55.0		12.0	46.0		16.0	50.0	50.0
Total Split (%)	22.0%	26.0%		32.7%	36.7%		8.0%	30.7%		10.7%	33.3%	33.3%
Maximum Green (s)	27.0	32.5		43.0	48.5		6.0	39.3		10.0	43.3	43.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.7		4.0	4.7	4.7
All-Red Time (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5		6.0	6.5		6.0	6.7		6.0	6.7	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			29.0			29.0	29.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)	14.0	6.8		23.7	11.9		28.5	21.8	75.2	35.2	25.2	25.2
Actuated g/C Ratio	0.19	0.09		0.32	0.16		0.38	0.29	1.00	0.47	0.34	0.34
v/c Ratio	0.15	0.41		0.39	0.58		0.11	0.63	0.05	0.40	0.50	0.07
Control Delay	19.9	17.7		21.8	11.4		11.9	27.2	0.1	14.3	22.3	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0

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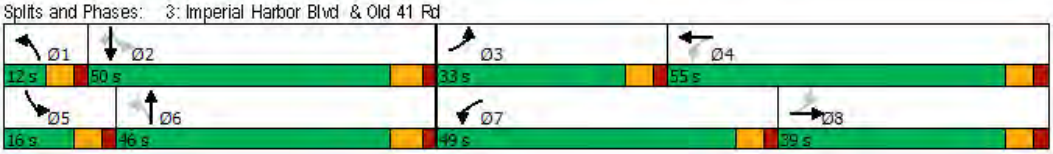
Lanes, Volumes, Timings
3: Imperial Harbor Blvd & Old 41 Rd 06/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	19.9	17.7		21.8	11.4		11.9	27.2	0.1	14.3	22.3	0.2
LOS	B	B		C	B		B	C	A	B	C	A
Approach Delay		18.4			15.3			23.7			19.6	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	13	5		49	9		8	133	0	35	110	0
Queue Length 95th (ft)	35	49		102	75		27	214	0	80	181	0
Internal Link Dist (ft)		567			511			639			948	
Turn Bay Length (ft)							235		400	305		285
Base Capacity (vph)	658	750		1002	1110		372	1814	1538	398	1999	959
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.12		0.15	0.23		0.10	0.35	0.05	0.38	0.29	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 75.2			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Imperial Harbor Blvd & Old 41 Rd



HCM 6th Signalized Intersection Summary
3: Imperial Harbor Blvd & Old 41 Rd

06/01/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	11	71	211	21	312	36	582	92	169	535	38
Future Volume (veh/h)	38	11	71	211	21	312	36	582	92	169	535	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	41	12	77	229	23	339	39	633	0	184	582	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	259	45	289	523	27	405	311	861		330	1002	447
Arrive On Green	0.06	0.21	0.21	0.13	0.27	0.27	0.06	0.25	0.00	0.10	0.29	0.29
Sat Flow, veh/h	1781	218	1400	1753	100	1475	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	41	0	89	229	0	362	39	633	0	184	582	41
Grp Sat Flow(s),veh/h/ln	1781	0	1618	1753	0	1575	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	1.4	0.0	3.7	7.8	0.0	17.4	1.3	13.5	0.0	6.2	11.6	1.6
Cycle Q Clear(g_c), s	1.4	0.0	3.7	7.8	0.0	17.4	1.3	13.5	0.0	6.2	11.6	1.6
Prop In Lane	1.00		0.87	1.00		0.94	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	0	334	523	0	432	311	861		330	1002	447
V/C Ratio(X)	0.16	0.00	0.27	0.44	0.00	0.84	0.13	0.74		0.56	0.58	0.09
Avail Cap(c_a), veh/h	745	0	653	1231	0	948	333	1692		368	1864	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	26.9	19.5	0.0	27.6	20.1	27.9	0.0	20.5	24.5	20.9
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.6	0.0	4.4	0.2	1.2	0.0	1.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.4	3.1	0.0	6.8	0.5	5.5	0.0	2.5	4.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	27.3	20.1	0.0	31.9	20.2	29.1	0.0	21.9	25.0	21.0
LnGrp LOS	C	A	C	C	A	C	C	C		C	C	C
Approach Vol, veh/h		130			591			672	A		807	
Approach Delay, s/veh		26.0			27.3			28.6			24.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	30.0	11.0	28.6	14.3	26.7	16.5	23.1
Change Period (Y+Rc), s	6.0	6.7	6.0	6.5	6.0	6.7	6.0	6.5
Max Green Setting (Gmax), s	6.0	43.3	27.0	48.5	10.0	39.3	43.0	32.5
Max Q Clear Time (g_c+I1), s	3.3	13.6	3.4	19.4	8.2	15.5	9.8	5.7
Green Ext Time (p_c), s	0.0	4.3	0.1	2.7	0.1	4.3	0.7	0.5

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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Lanes, Volumes, Timings
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	11	71	211	21	312	36	582	92	169	535	38
Future Volume (vph)	38	11	71	211	21	312	36	582	92	169	535	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		450	235		400	305		285
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.870			0.860				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1621	0	1736	1571	0	1719	3438	1538	1719	3438	1538
Flt Permitted	0.580			0.374			0.428			0.247		
Satd. Flow (perm)	1080	1621	0	683	1571	0	774	3438	1538	447	3438	1538
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		77			339							156
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		647			591			719			1028	
Travel Time (s)		14.7			13.4			14.0			20.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	41	12	77	229	23	339	39	633	100	184	582	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	89	0	229	362	0	39	633	100	184	582	41
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6		Free	2		2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	32.2	38.5		49.0	49.0		12.0	45.0		12.1	42.7	42.7
Total Split (s)	33.0	39.0		49.0	55.0		12.0	46.0		16.0	50.0	50.0
Total Split (%)	22.0%	26.0%		32.7%	36.7%		8.0%	30.7%		10.7%	33.3%	33.3%
Maximum Green (s)	27.0	32.5		43.0	48.5		6.0	39.3		10.0	43.3	43.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.7		4.0	4.7	4.7
All-Red Time (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5		6.0	6.5		6.0	6.7		6.0	6.7	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			29.0			29.0	29.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)	14.1	6.9		29.0	16.0		29.0	22.3	80.6	37.2	26.4	26.4
Actuated g/C Ratio	0.17	0.09		0.36	0.20		0.36	0.28	1.00	0.46	0.33	0.33
v/c Ratio	0.17	0.43		0.51	0.62		0.11	0.66	0.07	0.51	0.52	0.07
Control Delay	20.3	19.1		23.1	9.6		13.9	30.4	0.1	18.3	24.6	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0

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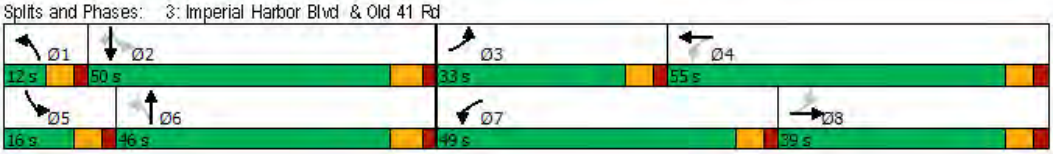
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	20.3	19.1		23.1	9.6		13.9	30.4	0.1	18.3	24.6	0.2
LOS	C	B		C	A		B	C	A	B	C	A
Approach Delay		19.5			14.8			25.7			21.9	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	13	5		78	9		10	144	0	49	120	0
Queue Length 95th (ft)	36	52		152	86		31	234	0	109	201	0
Internal Link Dist (ft)		567			511			639			948	
Turn Bay Length (ft)							235		400	305		285
Base Capacity (vph)	642	707		937	1089		350	1696	1538	366	1369	907
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.13		0.24	0.33		0.11	0.37	0.07	0.50	0.31	0.05

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 80.6	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Imperial Harbor Blvd & Old 41 Rd



HCM 6th Signalized Intersection Summary
3: Imperial Harbor Blvd & Old 41 Rd

06/02/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	19	63	116	32	139	69	452	169	264	663	74
Future Volume (veh/h)	52	19	63	116	32	139	69	452	169	264	663	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	53	19	64	118	33	142	70	461	0	269	677	76
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	283	49	165	368	45	194	360	985		501	1219	544
Arrive On Green	0.07	0.13	0.13	0.09	0.15	0.15	0.07	0.28	0.00	0.14	0.35	0.35
Sat Flow, veh/h	1781	376	1266	1753	303	1303	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	53	0	83	118	0	175	70	461	0	269	677	76
Grp Sat Flow(s),veh/h/ln	1781	0	1642	1753	0	1606	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	1.7	0.0	3.3	4.0	0.0	7.3	1.9	7.7	0.0	7.3	11.1	2.4
Cycle Q Clear(g_c), s	1.7	0.0	3.3	4.0	0.0	7.3	1.9	7.7	0.0	7.3	11.1	2.4
Prop In Lane	1.00		0.77	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	0	214	368	0	239	360	985		501	1219	544
V/C Ratio(X)	0.19	0.00	0.39	0.32	0.00	0.73	0.19	0.47		0.54	0.56	0.14
Avail Cap(c_a), veh/h	839	0	618	1282	0	969	385	1936		656	2429	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	28.0	23.1	0.0	28.6	15.6	20.8	0.0	14.1	18.4	15.6
Incr Delay (d2), s/veh	0.3	0.0	1.1	0.5	0.0	4.3	0.3	0.3	0.0	0.9	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.3	1.6	0.0	3.0	0.7	2.9	0.0	2.7	4.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	29.2	23.6	0.0	32.9	15.8	21.2	0.0	15.0	18.8	15.7
LnGrp LOS	C	A	C	C	A	C	B	C		B	B	B
Approach Vol, veh/h		136			293			531	A		1022	
Approach Delay, s/veh		27.1			29.2			20.5			17.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	31.4	11.0	17.0	15.7	26.7	12.3	15.7
Change Period (Y+Rc), s	6.0	6.7	6.0	6.5	6.0	6.7	6.0	6.5
Max Green Setting (Gmax), s	6.0	49.3	27.0	42.5	16.0	39.3	43.0	26.5
Max Q Clear Time (g_c+I1), s	3.9	13.1	3.7	9.3	9.3	9.7	6.0	5.3
Green Ext Time (p_c), s	0.0	5.4	0.1	1.1	0.4	3.2	0.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Imperial Harbor Blvd & Old 41 Rd 06/02/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	19	63	116	32	139	69	452	169	264	663	74
Future Volume (vph)	52	19	63	116	32	139	69	452	169	264	663	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		450	235		400	305		285
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.884			0.878				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1647	0	1736	1604	0	1719	3438	1538	1719	3438	1538
Flt Permitted	0.647			0.497			0.394			0.338		
Satd. Flow (perm)	1205	1647	0	908	1604	0	713	3438	1538	612	3438	1538
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		64			142							156
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		647			591			719			1028	
Travel Time (s)		14.7			13.4			14.0			20.0	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	53	19	64	118	33	142	70	461	172	269	677	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	83	0	118	175	0	70	461	172	269	677	76
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6		Free	2		2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	32.2	32.5		49.0	49.0		12.0	45.0		12.1	42.7	42.7
Total Split (s)	33.0	33.0		49.0	49.0		12.0	46.0		22.0	56.0	56.0
Total Split (%)	22.0%	22.0%		32.7%	32.7%		8.0%	30.7%		14.7%	37.3%	37.3%
Maximum Green (s)	27.0	26.5		43.0	42.5		6.0	39.3		16.0	49.3	49.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.7		4.0	4.7	4.7
All-Red Time (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5		6.0	6.5		6.0	6.7		6.0	6.7	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			29.0			29.0	29.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)	14.5	6.9		20.4	9.9		27.0	20.3	76.5	40.5	28.2	28.2
Actuated g/C Ratio	0.19	0.09		0.27	0.13		0.35	0.27	1.00	0.53	0.37	0.37
v/c Ratio	0.19	0.40		0.34	0.53		0.21	0.51	0.11	0.51	0.54	0.11
Control Delay	21.4	19.9		22.8	15.4		12.9	27.2	0.1	14.3	21.3	0.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0

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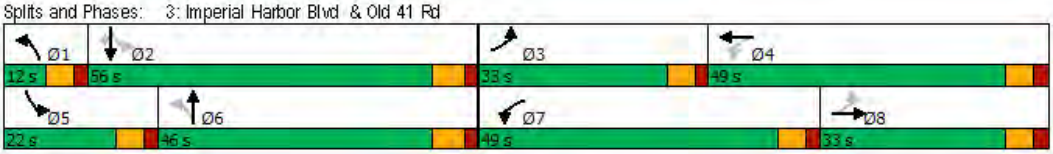
Lanes, Volumes, Timings
3: Imperial Harbor Blvd & Old 41 Rd 06/02/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	21.4	19.9		22.8	15.4		12.9	27.2	0.1	14.3	21.3	0.4
LOS	C	B		C	B		B	C	A	B	C	A
Approach Delay		20.4			18.4			19.2			17.9	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	18	9		42	14		15	97	0	64	127	0
Queue Length 95th (ft)	44	51		83	71		39	163	0	132	205	0
Internal Link Dist (ft)		567			511			639			948	
Turn Bay Length (ft)							235		400	305		285
Base Capacity (vph)	638	616		982	960		331	1778	1538	560	2231	1052
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.13		0.12	0.18		0.21	0.26	0.11	0.48	0.30	0.07

Intersection Summary
Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 76.5
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Imperial Harbor Blvd & Old 41 Rd



HCM 6th Signalized Intersection Summary
3: Imperial Harbor Blvd & Old 41 Rd

06/02/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	19	63	161	32	197	69	452	245	366	663	74
Future Volume (veh/h)	52	19	63	161	32	197	69	452	245	366	663	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	53	19	64	164	33	201	70	461	0	373	677	76
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	256	53	177	404	42	254	351	881		527	1276	569
Arrive On Green	0.06	0.14	0.14	0.11	0.19	0.19	0.06	0.25	0.00	0.18	0.37	0.37
Sat Flow, veh/h	1781	376	1266	1753	225	1369	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	53	0	83	164	0	234	70	461	0	373	677	76
Grp Sat Flow(s),veh/h/ln	1781	0	1642	1753	0	1594	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	1.9	0.0	3.6	6.1	0.0	11.0	2.3	9.0	0.0	11.7	12.1	2.6
Cycle Q Clear(g_c), s	1.9	0.0	3.6	6.1	0.0	11.0	2.3	9.0	0.0	11.7	12.1	2.6
Prop In Lane	1.00		0.77	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	230	404	0	296	351	881		527	1276	569
V/C Ratio(X)	0.21	0.00	0.36	0.41	0.00	0.79	0.20	0.52		0.71	0.53	0.13
Avail Cap(c_a), veh/h	754	0	552	1170	0	860	373	1730		571	2170	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	30.7	24.6	0.0	30.6	19.2	25.3	0.0	16.1	19.6	16.6
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.7	0.0	4.8	0.3	0.5	0.0	3.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.5	2.5	0.0	4.5	0.9	3.6	0.0	4.7	4.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	0.0	31.6	25.3	0.0	35.4	19.5	25.8	0.0	19.8	19.9	16.7
LnGrp LOS	C	A	C	C	A	D	B	C		B	B	B
Approach Vol, veh/h		136			398			531	A		1126	
Approach Delay, s/veh		29.7			31.2			25.0			19.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	35.7	11.0	21.1	20.0	26.7	14.6	17.5
Change Period (Y+Rc), s	6.0	6.7	6.0	6.5	6.0	6.7	6.0	6.5
Max Green Setting (Gmax), s	6.0	49.3	27.0	42.5	16.0	39.3	43.0	26.5
Max Q Clear Time (g_c+I1), s	4.3	14.1	3.9	13.0	13.7	11.0	8.1	5.6
Green Ext Time (p_c), s	0.0	5.4	0.1	1.6	0.3	3.1	0.5	0.4

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

BSGC - Intersections - 2025 PM w Pj 06/02/2021 Baseline

Synchro 10 Report
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Lanes, Volumes, Timings
3: Imperial Harbor Blvd & Old 41 Rd 06/02/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	19	63	161	32	197	69	452	245	366	663	74
Future Volume (vph)	52	19	63	161	32	197	69	452	245	366	663	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		450	235		400	305		285
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.884			0.871				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1647	0	1736	1591	0	1719	3438	1538	1719	3438	1538
Flt Permitted	0.613			0.407			0.394			0.326		
Satd. Flow (perm)	1142	1647	0	744	1591	0	713	3438	1538	590	3438	1538
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		64			201							156
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		647			591			719			1028	
Travel Time (s)		14.7			13.4			14.0			20.0	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	53	19	64	164	33	201	70	461	250	373	677	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	83	0	164	234	0	70	461	250	373	677	76
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6		Free	2		2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	32.2	32.5		49.0	49.0		12.0	45.0		12.1	42.7	42.7
Total Split (s)	33.0	33.0		49.0	49.0		12.0	46.0		22.0	56.0	56.0
Total Split (%)	22.0%	22.0%		32.7%	32.7%		8.0%	30.7%		14.7%	37.3%	37.3%
Maximum Green (s)	27.0	26.5		43.0	42.5		6.0	39.3		16.0	49.3	49.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.7		4.0	4.7	4.7
All-Red Time (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5		6.0	6.5		6.0	6.7		6.0	6.7	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			29.0			29.0	29.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)	14.6	7.0		24.2	12.0		27.0	20.4	80.9	43.2	30.4	30.4
Actuated g/C Ratio	0.18	0.09		0.30	0.15		0.33	0.25	1.00	0.53	0.38	0.38
v/c Ratio	0.20	0.41		0.44	0.57		0.22	0.53	0.16	0.69	0.52	0.11
Control Delay	21.8	20.9		24.5	13.3		14.1	29.6	0.2	20.7	22.1	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0

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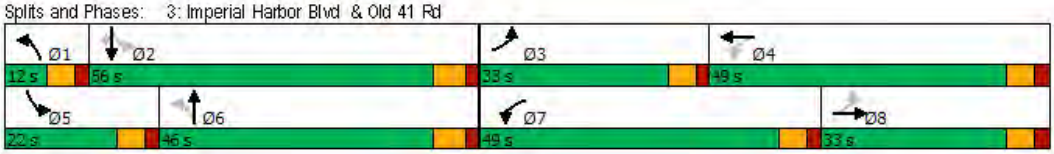
Lanes, Volumes, Timings
3: Imperial Harbor Blvd & Old 41 Rd 06/02/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	21.8	20.9		24.5	13.3		14.1	29.6	0.2	20.7	22.1	0.3
LOS	C	C		C	B		B	C	A	C	C	A
Approach Delay		21.2			17.9			18.8			20.2	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	18	9		61	15		16	104	0	102	134	0
Queue Length 95th (ft)	43	52		110	79		43	171	0	#210	217	0
Internal Link Dist (ft)		567			511			639			948	
Turn Bay Length (ft)							235		400	305		285
Base Capacity (vph)	613	584		926	934		313	1677	1538	539	2104	1002
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.14		0.18	0.25		0.22	0.27	0.16	0.69	0.32	0.08

Intersection Summary
Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 80.9
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 75.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Imperial Harbor Blvd & Old 41 Rd



Shangri-La Rd and Cockleshell Dr Intersection

HCM 6th TWSC
5: Shangri-La Rd & Cockleshell Dr 06/01/2021

Intersection						
Int Delay, s/veh	1.9					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	194	335	19	29	45
Future Vol, veh/h	43	194	335	19	29	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	320	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	47	211	364	21	32	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	385	0	-	0	680	375
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1163	-	-	-	417	671
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	748	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1163	-	-	-	400	671
Mov Cap-2 Maneuver	-	-	-	-	400	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	748	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1163	-	-	-	400	671
HCM Lane V/C Ratio	0.04	-	-	-	0.079	0.073
HCM Control Delay (s)	8.2	-	-	-	14.8	10.8
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.2

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HCM 6th TWSC
5: Shangri-La Rd & Cockleshell Dr 06/01/2021

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	233	456	19	29	89
Future Vol, veh/h	57	233	456	19	29	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	320	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	62	253	496	21	32	97

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	517	0	-	0	884	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1039	-	-	-	316	566
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1039	-	-	-	297	566
Mov Cap-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1039	-	-	-	297	566
HCM Lane V/C Ratio	0.06	-	-	-	0.106	0.171
HCM Control Delay (s)	8.7	-	-	-	18.6	12.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4	0.6

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HCM 6th TWSC
5: Shangri-La Rd & Cockleshell Dr 06/02/2021

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	127	354	255	44	19	33
Future Vol, veh/h	127	354	255	44	19	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	320	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	134	373	268	46	20	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	314	0	-	0	932	291
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	641	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1235	-	-	-	296	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	525	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1235	-	-	-	264	748
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	525	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1235	-	-	-	264	748
HCM Lane V/C Ratio	0.108	-	-	-	0.076	0.046
HCM Control Delay (s)	8.3	-	-	-	19.8	10
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.2	0.1

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HCM 6th TWSC
5: Shangri-La Rd & Cockleshell Dr 06/02/2021

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	172	487	333	44	19	78
Future Vol, veh/h	172	487	333	44	19	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	320	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	181	513	351	46	20	82

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	397	0	-	0	1249	374
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	875	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1151	-	-	-	191	672
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	408	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1151	-	-	-	161	672
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	408	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1151	-	-	-	161	672
HCM Lane V/C Ratio	0.157	-	-	-	0.124	0.122
HCM Control Delay (s)	8.7	-	-	-	30.5	11.1
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.4	0.4

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Shangri-La Rd and Paradise Rd Intersection

HCM 6th AWSC
6: Shangri-La Rd & Paradise Rd 06/01/2021

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	47	171	250	33	107	116
Future Vol, veh/h	47	171	250	33	107	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	51	186	272	36	116	126
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.5	11.2	10.6
HCM LOS	B	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	0%	48%
Vol Thru, %	78%	88%	0%
Vol Right, %	0%	12%	52%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	218	283	223
LT Vol	47	0	107
Through Vol	171	250	0
RT Vol	0	33	116
Lane Flow Rate	237	308	242
Geometry Grp	1	1	1
Degree of Util (X)	0.329	0.411	0.336
Departure Headway (Hd)	4.998	4.81	4.992
Convergence, Y/N	Yes	Yes	Yes
Cap	713	741	713
Service Time	3.076	2.882	3.069
HCM Lane V/C Ratio	0.332	0.416	0.339
HCM Control Delay	10.5	11.2	10.6
HCM Lane LOS	B	B	B
HCM 95th-tile Q	1.4	2	1.5

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HCM 6th AWSC
6: Shangri-La Rd & Paradise Rd 06/01/2021

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	86	171	250	56	178	237
Future Vol, veh/h	86	171	250	56	178	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	93	186	272	61	193	258
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	13.9	14.7	18.8
HCM LOS	B	B	C

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	0%	43%
Vol Thru, %	67%	82%	0%
Vol Right, %	0%	18%	57%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	257	306	415
LT Vol	86	0	178
Through Vol	171	250	0
RT Vol	0	56	237
Lane Flow Rate	279	333	451
Geometry Grp	1	1	1
Degree of Util (X)	0.457	0.521	0.672
Departure Headway (Hd)	5.884	5.635	5.366
Convergence, Y/N	Yes	Yes	Yes
Cap	609	639	672
Service Time	3.946	3.694	3.421
HCM Lane V/C Ratio	0.458	0.521	0.671
HCM Control Delay	13.9	14.7	18.8
HCM Lane LOS	B	B	C
HCM 95th-tile Q	2.4	3	5.2

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HCM 6th AWSC
6: Shangri-La Rd & Paradise Rd 06/02/2021

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Vol, veh/h	86	171	250	56	178	237
Future Vol, veh/h	86	171	250	56	178	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	93	186	272	61	193	258
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	13.4	14.2	12.4
HCM LOS	B	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	33%	0%	100%	0%
Vol Thru, %	67%	82%	0%	0%
Vol Right, %	0%	18%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	306	178	237
LT Vol	86	0	178	0
Through Vol	171	250	0	0
RT Vol	0	56	0	237
Lane Flow Rate	279	333	193	258
Geometry Grp	2	2	7	7
Degree of Util (X)	0.446	0.509	0.361	0.394
Departure Headway (Hd)	5.754	5.507	6.721	5.504
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	626	655	536	654
Service Time	3.796	3.546	4.461	3.243
HCM Lane V/C Ratio	0.446	0.508	0.36	0.394
HCM Control Delay	13.4	14.2	13.2	11.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.3	2.9	1.6	1.9

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HCM 6th AWSC
6: Shangri-La Rd & Paradise Rd 06/02/2021

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	
Traffic Vol, veh/h	156	208	216	116	60	89
Future Vol, veh/h	156	208	216	116	60	89
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	164	219	227	122	63	94
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	13.1	11.5	10
HCM LOS	B	B	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	43%	0%	40%
Vol Thru, %	57%	65%	0%
Vol Right, %	0%	35%	60%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	364	332	149
LT Vol	156	0	60
Through Vol	208	216	0
RT Vol	0	116	89
Lane Flow Rate	383	349	157
Geometry Grp	1	1	1
Degree of Util (X)	0.517	0.449	0.231
Departure Headway (Hd)	4.862	4.627	5.291
Convergence, Y/N	Yes	Yes	Yes
Cap	736	772	671
Service Time	2.929	2.694	3.38
HCM Lane V/C Ratio	0.52	0.452	0.234
HCM Control Delay	13.1	11.5	10
HCM Lane LOS	B	B	A
HCM 95th-tile Q	3	2.3	0.9

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HCM 6th AWSC
6: Shangri-La Rd & Paradise Rd 06/02/2021

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	289	208	216	192	105	167
Future Vol, veh/h	289	208	216	192	105	167
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	304	219	227	202	111	176
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	29.4	17.9	14.7
HCM LOS	D	C	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	58%	0%	39%
Vol Thru, %	42%	53%	0%
Vol Right, %	0%	47%	61%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	497	408	272
LT Vol	289	0	105
Through Vol	208	216	0
RT Vol	0	192	167
Lane Flow Rate	523	429	286
Geometry Grp	1	1	1
Degree of Util (X)	0.82	0.646	0.482
Departure Headway (Hd)	5.646	5.416	6.064
Convergence, Y/N	Yes	Yes	Yes
Cap	638	661	590
Service Time	3.709	3.484	4.138
HCM Lane V/C Ratio	0.82	0.649	0.485
HCM Control Delay	29.4	17.9	14.7
HCM Lane LOS	D	C	B
HCM 95th-tile Q	8.5	4.7	2.6

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HCM 6th AWSC
6: Shangri-La Rd & Paradise Rd 06/02/2021

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Vol, veh/h	289	208	216	192	105	167
Future Vol, veh/h	289	208	216	192	105	167
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	304	219	227	202	111	176
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	28.8	17.7	12.1
HCM LOS	D	C	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	58%	0%	100%	0%
Vol Thru, %	42%	53%	0%	0%
Vol Right, %	0%	47%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	497	408	105	167
LT Vol	289	0	105	0
Through Vol	208	216	0	0
RT Vol	0	192	0	167
Lane Flow Rate	523	429	111	176
Geometry Grp	2	2	7	7
Degree of Util (X)	0.816	0.642	0.23	0.305
Departure Headway (Hd)	5.612	5.382	7.482	6.256
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	643	670	479	571
Service Time	3.662	3.439	5.249	4.022
HCM Lane V/C Ratio	0.813	0.64	0.232	0.308
HCM Control Delay	28.8	17.7	12.5	11.8
HCM Lane LOS	D	C	B	B
HCM 95th-tile Q	8.4	4.6	0.9	1.3

BSGC - Intersections - 2025 PM w Pj Improved 06/02/2021 Baseline Synchro 10 Report
Page 1

Bonita Springs Golf Course PD - Post-Review Clarifications

Ciprian Malaescu <cmalaescu@trebilcock.biz> Fri, May 14, 2021 at 12:06 PM
To: "Ross, Tom/ORL" <Tom.Ross2@jacobs.com>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>

Hi Tom,

As per our conversation a couple of days ago, please see attached our tentative responses as well as a traffic memo justification in the attempt to limit future traffic forecasting to reasonable values.
Please let us know when convenient if we can proceed with these findings.
Thank you for your time.

Ciprian
cell - 239-272-2150.

Ciprian Malaescu, EI
Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
239-566-9551 - Office
239-566-9553 - Fax
http://www.Trebilcock.biz

Virus-free. www.avast.com

2 attachments

PD21-78545-BOS_Insufficiency 1 - Responses - 5-14-21.pdf
72K

Projected Growth Rates - Memo - 5-14-21.pdf
2978K

BONITA SPRINGS Traffic Comments

Sufficiency Comments:

1. Please extend the project traffic distribution to include all roadway segments until the project traffic is less than the capacity thresholds (2%, 2%, 3%) as required in the TIS Guidelines. At a minimum, add Old 41 south of Terry Street and Terry Street east and west of Old 41. Revise all tables and figures to include the added segments.

Response: Understood.

2. Please provide turning movement diagrams for the intersections of Shangri-La Road at Old 41, at Cockleshell Drive, and at Paradise Road. Also provide capacity analyses, both AM and PM peak, for the same three intersections as called for on Page 3 of the Methodology.

Response: Report will provide counts and capacity analyses as requested.

3. Staff is requesting that the Applicant provide a level of service analysis for the roundabout at Old 41 and Terry Street with the project traffic. It is expected that concerns regarding the impact of the proposed project on the operation of the roundabout will be raised during the public hearing. The Applicant should be prepared to address any such concerns.

Response: Understood. As discussed with staff we plan to collect turning movement counts to capture 1 weekday AM (7-9) and PM (4-6), in 15 minute intervals.

4. Staff does not agree with moderating the calculated growth rates to 5%. The growth rates calculated from the historical counts reflect the rapid growth the City is experiencing. Please revise all tables using the growth rates obtained from the counts.

Response: Justification support to limit estimated maximum future growth is provided in the Traffic Growth Trends dated 5-14-2021.

5. Appendix G, Project Turning Movements – Please include both outbound and inbound turning movements.

Response: Report will be revised as requested.

6. The Master Concept Plan includes a roundabout along Paradise Road. Please include a conceptual drawing of the roundabout showing the proposed inside and outside radii, the approach treatment, the center island treatment and how the proposed roundabout will fit within the existing right-of-way.

Response: A conceptual plan will be provided with the next submittal.

Please contact: Tom Ross, Traffic Group Leader
Phone: 407.718.5443
E-mail: tom.ross2@jacobs.com

Traffic Growth Trends

Bonita Springs Golf Course

Residential Planned Development (RPD) Rezone

Bonita Springs, FL
5/14/2021

Prepared for:

Barron Collier Companies
2600 Golden Gate Parkway
Naples, FL 34105
Phone: 239-403-6804

Prepared by:

Trebilcock Consulting Solutions, PA
2800 Davis Boulevard, Suite 200
Naples, FL 34104
Phone: 239-566-9551
Email: ntrebilcock@trebilcock.biz

Future Traffic Growth Trend

Future Growth Rates Determination per TIS dated 3-10-21

As illustrated in the Traffic Impact Statement (TIS) dated 3-10-21 associated with Bonita Springs Golf Course Planned Development, historic growth rates are estimated for the segments of the roadway network in the study area using a general guidance of a minimum 2% growth rate, or historical growth rates from available traffic counts.

Projected historical linear growth rates are calculated for a 5-year period (2015 – 2020) based on daily traffic volumes illustrated in the 2020 City of Bonita Springs traffic count report. Refer to **Appendix A: Bonita Springs 2020 Traffic Count Data (Excerpts)**.

For the purposes of the TIS, calculated growth rates were moderated to a maximum reasonable rate of 5%. Based on traffic data presented for Old 41 Rd, a historical growth rate of 4% was determined which is representative for the expected traffic growth for the roadway network in the vicinity of project. Annual growth rate determination is illustrated in **Table 1**.

Table 1
Annual Growth Rate Determination

Roadway	Roadway Segment Location	FTE Station Number	Historic Traffic Count (Year)\Volume		Growth Rate Calculated	Growth Rate Applied
			From	To		
Paradise Rd	North Project Access to Shangri-La Rd	0002	(2017)/2,500	(2020)/3,600	14.7%	5.0%
Cockleshell Dr	Maddox Ln to Shangri-La Rd	1213	(2015)/1,900	(2020)/2,200	3.2%	3.2%
Shangri-La Rd	Old 41 Rd to Imperial Pkwy	1212	(2015)/4,600	(2020)/7,500	12.6%	5.0%
Imperial Pkwy	North of Shangri-La Rd	1226	(2015)/13,000	(2020)/18,500	8.5%	5.0%
Imperial Pkwy	South of Shangri-La Rd	1227	(2015)/13,800	(2020)/20,000	9.0%	5.0%
Old 41 Rd	South of Shangri-La Rd	1220	(2015)/20,700	(2020)/22,000	1.3%	2.0%
Old 41 Rd	Shangri-La Rd to Bernwood Pkwy	1228	(2015)/13,600	(2020)/16,300	4.0%	4.0%
Old 41 Rd	Bernwood Pkwy to US 41	1216	(2015)/12,000	(2020)/14,200	3.7%	3.7%

Traffic Growth Trends – Additional Considerations

As illustrated in Traffic Comment #4: "Staff does not agree with moderating the calculated growth rates to 5%. The growth rates calculated from the historical counts reflect the rapid growth the City is experiencing. Please revise all tables using the growth rates obtained from the counts."

Additional considerations were evaluated to determine realistic and adequate traffic growth trends for the future forecast year 2025.

1. Paradise Road

a) This roadway services residential uses which are traffic generators in nature with typical moderate growth patterns.

b) Segment located north of Maddox Lane is a no outlet roadway. This limits the amount of additional traffic expected to occur in the future.

c) The proposed project traffic is considered in addition to the estimated future background traffic.

d) A linear regression analysis is performed using the FDOT Traffic Trends Analysis Tool, current version Trend_v03a.xls. Refer to **Appendix B: FDOT Traffic Trend Analysis.** Based on the results of this analysis, an annual growth rate of 10.8% is projected.

It is noted that limited count data (2017-2020) may not reflect sustainable growth trends at this location.

e) Cockleshell Drive is a parallel similar type (2LN) facility with a higher functional classification (collector) and connectivity to Strike Lane to the north. The estimated annual growth for this facility is 3.2% as illustrated in **Table 1**.

Conclusion – Based on the above observations, a maximum reasonable annual rate of 5% should be considered for this roadway.

2. Shangri-La Road

a) A linear regression analysis is performed for the 2015 – 2020 period using the FDOT Traffic Trends Analysis Tool as illustrated in **Appendix B.** Based on this analysis, an annual growth rate of 7.2% is projected.

b) Based on 2019 FDOT Traffic Forecasting Handbook (Section 4.4.1 – 3.b page 59), 5 to 10 years of historical data is recommended to determine traffic growth trends. A linear regression analysis is performed for the 2010 – 2020 period using the FDOT Traffic Trends Analysis Tool as illustrated in **Appendix B**. As there is no data available for the years 2011 and 2013, the 2011 and 2013 traffic counts are assumed as the highest threshold between the volumes presented for the adjacent years. Based on this analysis, an annual growth rate of 3.5% is projected.

Conclusion – Based on the above observations, a maximum reasonable annual rate of 5% should be considered for this roadway.

3. Imperial Parkway – North of Shangri-La Road

a) A linear regression analysis is performed for the 2015 – 2020 period using the FDOT Traffic Trends Analysis Tool (**Appendix B).** Based on this analysis, an annual growth rate of 5.9% is projected.

b) No additional traffic data is available as presented in the 2020 City of Bonita Springs Traffic Count Report.

Conclusion - Based on the above observations, an annual rate of 5.9% should be considered for this roadway for traffic forecasting purposes.

4. Imperial Parkway – South of Shangri-La Road

a) A linear regression analysis is performed for the 2015 – 2020 period using the FDOT Traffic Trends Analysis Tool (**Appendix B).** An annual growth rate of 6.2% is projected for the future 2025 buildout conditions.

b) No additional traffic data is available as presented in the 2020 City of Bonita Springs Traffic Count Report.

Conclusion - Based on the above observations, a maximum reasonable rate of 6.2% should be considered for this roadway.

Traffic Growth Trends – Recommendations

Other jurisdictional agencies have implemented similar methodologies to promote reasonable traffic forecasting:

Collier County – a 4 % maximum annual growth rate is utilized for all County monitored facilities as presented in the latest 2020 AUIR – Master Attachment F Spreadsheet available to consultants.

Lee County - The Esplanade Lake Club Phase 2 Development Order (DO) – TIS dated 3-15-21. This project proposed 80 single-family dwelling units and 122 twin villa residential units. The development is located east of I-75, on the south side of Alico Road, approximately one mile east of Ben Hill Griffin Parkway and lies within Section 12, Township 46 South, Range 25 East, in Lee County, Florida. As presented in the TIS, for the segment of Alico Road west of I-75, the calculated growth rate for the period 2014 through 2019 was 5.9%. Similarly, for the segment of Alico Road east of Ben Hill Griffin, the calculated growth rate for the period 2014 through 2019 was 4.7%. Based on coordination with Lee County Transportation Staff, a maximum 4.0% growth rate was selected for calculating the future background traffic for these links.

Based on the above analyses, we recommend the following annual growth rates be implemented for traffic forecasting purposes: Paradise Rd and Shangri-La Rd – 5%; Imperial Parkway – North of Shangri-La – 5.9%; Imperial Parkway – South of Shangri-La – 6.2%; all other analyzed roadway segments – as presented in **Table 1** with no changes proposed.

Appendix A:

Bonita Springs 2020 Traffic Count Data (Excerpts)

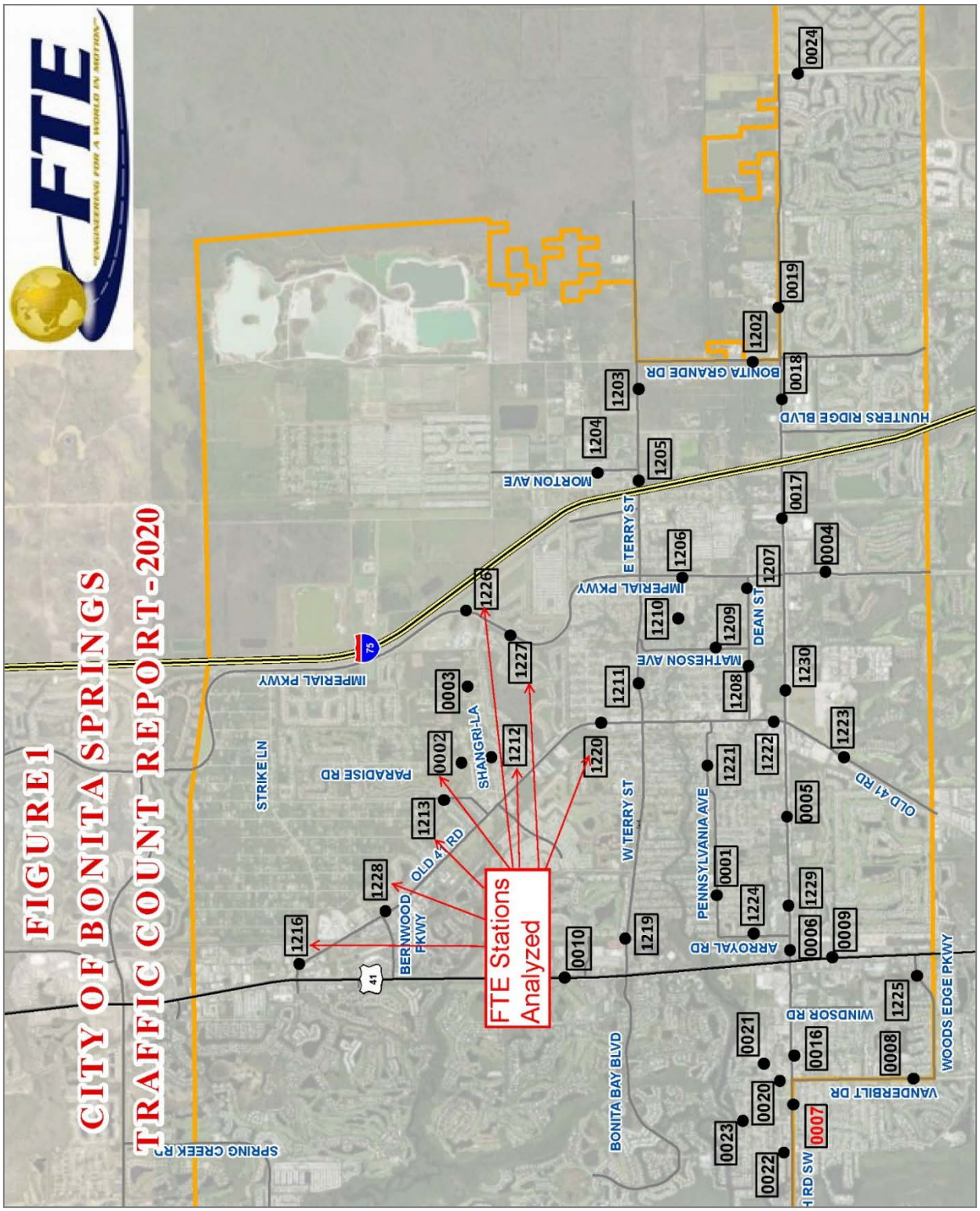
FIGURE1
CITY OF BONITA SPRINGS
TRAFFIC COUNT REPORT-2020
FTE Stations Analyzed
IMPERIAL PKWY
BONITA GRANDE DR
HUNTERS RIDGE BLVD
MORTON AVE
E TERRY ST
IMPERIAL PKWY
DEAN ST
MATHESON AVE
W TERRY ST
PENNSYLVANIA AVE
OLD 41 RD
ARROYAL RD
WINDSOR RD
WOODS EDGE PKWY
VANDERBILT DR
BONITA BAY BLVD
BERNWOOD FKWY
OLD 41 RD
PARADISE RD
SHANGRI-LA
STRIKE LN
SPRING CREEK RD
0001
0002
0003
0004
0005
0006
0007
0008
0009
0010
0016
0017
0018
0019
0020
0021
0022
0023
0024
1202
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1230

TABLE 2 HISTORIC TRAFFIC COUNT SUMMARY
CITY OF BONITA SPRINGS, FL

FTE Station Number	Reference Lee County Station Number	Location	Obtained from the Lee County Traffic Count Report 2012						Counts performed by FTE or obtained from Lee County									
			2003	2004	2005	2006	2007	2008	Dec-09	Dec-10	Feb-12	Jan-14	Feb-15	Feb-16	March-17	March-18	April-19	March-20
1224	0496	Arroyal Rd N of Bonita Beach Rd	5000	6200	6500	6400	5300	4700	6000	5600	5000	5900	5500	6300	6100	6300	6700	6300
0005	N/A	Bonita Beach Rd between Wisconsin & Michigan St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28500	26700	30500	31300
0016	0007	Bonita Beach Rd E. of Vandebilt Dr	N/A	N/A	N/A	N/A	U/C	23400	24800	23000	23500	24600	25700	25900	30300	25300	28600	29400
1229	0221	Bonita Beach Rd East of Arroyal Rd	N/A	27000	25200	25600	26300	26300	22900	23600	N/A	N/A	N/A	32300	31100	28800	32800	35500
0006	N/A	Bonita Beach Rd W. of Arroyal Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30700	30500	34500	34900
1230	N/A	Bonita Beach W of Race Track Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37500	36100	34900	41000	41600
0012**	N/A	Bonita Beach Rd E. of Barefoot Blvd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19400	19000	21300	22900
0007**	N/A	Bonita Beach Rd W. of Vandebilt Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25300	24200	26800	28600
1202	0519	Bonita Grande Dr N of Bonita Beach Rd	5400	7400	7100	8200	6800	5300	5300	5600	6100	5500	6200	6600	6300	7200	7900	9100
1213	N/A	Cockleshell Dr N of Shangri-La Rd	N/A	N/A	N/A	N/A	N/A	N/A	1900	1900	2300	1700	1900	3900	3700	2100	1600	2200
1207	N/A	Dean St E of Lime St	N/A	N/A	N/A	N/A	N/A	N/A	3400	3100	3200	2800	2700	3000	2900	2600	3400	3500
1208	N/A	Dean St W of Matheson Ave	N/A	N/A	N/A	N/A	N/A	N/A	2800	2300	2400	2000	2000	2500	2400	2100	2600	2600
1205	N/A	E Terry St E of I-75	N/A	N/A	N/A	N/A	N/A	N/A	8100	7900	7900	7800	8100	9000	8600	8700	10100	11200
1211	0271	E Terry St E of Old 41 Rd	9900	12000	13800	U/C	10000	13000	14400	14300	14800	13400	12700	14800	14200	13200	15700	16700
1203	N/A	E Terry St W of Bonita Grande Dr	N/A	N/A	N/A	N/A	N/A	N/A	4600	4500	4600	4400	4500	5600	5400	5700	6900	7900
0013**	N/A	Estero Blvd N. of Hickory Blvd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9100	9300	10000	10600
0015**	N/A	Estero Blvd N. of Lovers Key State Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8600	9000	9600	9700
0014**	N/A	Estero Blvd S. of Lovers Key State Park	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8800	9100	9700	10100
1206	N/A	Imperial Pkwy Between Bonita Beach Rd and E Terry St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16300	17400	19600	20600	23300	21100	23300	27400	25000
1226	N/A	Imperial Pkwy N/O Shangri-LA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13000	15900	15300	15700	19900	18500
0004	N/A	Imperial Pkwy S. of Tropic Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20200	20500	25100	23100
1227	N/A	Imperial Pkwy S/O Shangri-LA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13800	17200	16600	18000	21400	20000
1209	N/A	Matheson Ave N of Dean St	N/A	N/A	N/A	N/A	N/A	N/A	1900	1700	1500	1800	1500	2100	2100	1600	2000	2000
1204	N/A	Morton Ave N of East Terry St	N/A	N/A	N/A	N/A	N/A	N/A	5800	5400	5700	5300	5300	5900	5700	5600	6600	6600
1223	N/A	Old 41 Rd Between Collier County Line to Bonita Beach Rd	12600	13700	14000	14000	13000	11600	N/A	15200	14600	14100	14900	14700	14200	15200	17600	17500
1222	N/A	Old 41 Rd N of Bonita Beach Rd	16500	18500	17600	17400	18300	13200	15400	15000	14700	13500	13100	9000	8700	10500	12200	12400
1220	N/A	Old 41 Rd N of E/W Terry St	22000	24600	26300	26700	23500	19900	23800	23700	28300	25200	20700	18400	17700	19000	11900	22000
1216	N/A	Old 41 Rd S of US 41	13000	14200	15000	16000	13200	N/A	12000	12500	12200	12100	12000	11900	11500	11800	13500	14200
1228	N/A	Old 41 S/O Bernwood Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13600	13900	13300	13700	15700	16300
0002	N/A	Paradise Rd N. of Shangri-La	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2500	2900	3500	3600

FTE Station Number	Reference Lee County Station Number	Location	Obtained from the Lee County Traffic Count Report 2012							Counts performed by FTE or obtained from Lee County							
			2003	2004	2005	2006	2007	2008	Dec-09	Dec-10	Feb-12	Jan-14	Feb-15	Feb-16	March-17	March-18	April-19	March-21
0001	N/A	Pennsylvania Ave E. of Los Amigos Lane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3100	3500	4200	3600
1221	0494	Pennsylvania Ave W of Old 41 Rd	4100	4000	4900	4500	4300	3000	6300	6400	6000	5600	4400	3400	3300	4300	4800	5900
0003	N/A	Tropical Acres Dr N. of Shangri-La	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	400	500	500
1212	N/A	Shangri-La Rd E of Old US 41	N/A	N/A	N/A	N/A	N/A	N/A	5000	5100	5100	4900	4600	5800	5600	6300	7100	7300
0010	N/A	US-41, N. of Shopping Center Entrance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	49200	45600	54200	50600
0009	N/A	US-41, S. of Beaumont Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35600	35500	44000	41100
0008	N/A	Vanderbilt Dr N. of Woods Edge Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6900	8400	9500	10200
1219	N/A	W Terry St E of US 41	13300	12000	11400	12200	12200	11600	12700	12800	13900	11000	12400	13300	12800	11700	12700	13100
1225	N/A	Woods Edge Pkwy W of US 41	N/A	N/A	N/A	N/A	N/A	N/A	4500	5000	3900	5300	4200	4500	4400	4100	5100	5600
1210	N/A	Longfellow Ln W of Imperial Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	500	300	300	200	U/C	600	500	N/A	800	600
0017	N/A	Bonita Beach Rd between Imperial Parkway and I-75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3700	50300	46600
0018	N/A	Lake Shore between Kent Way and Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18300	21400	22500
0019	N/A	Bonita Beach Rd E. of Bonita Grande Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9700	15900	18800
0020	N/A	Lake Shore between Kent Way and Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	900	800	900
0021	N/A	Quails Walk E. of Lake St	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	500	400	500
0022	N/A	Imperial Shores Blvd S. of Vanda Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2200	2200
0023	N/A	Tarpon Avenue E. of Sherry Ln	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	800	700
0024	N/A	Logan Blvd S. of Bonita Beach Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4300

** Collected weekend counts also.

Appendix B:

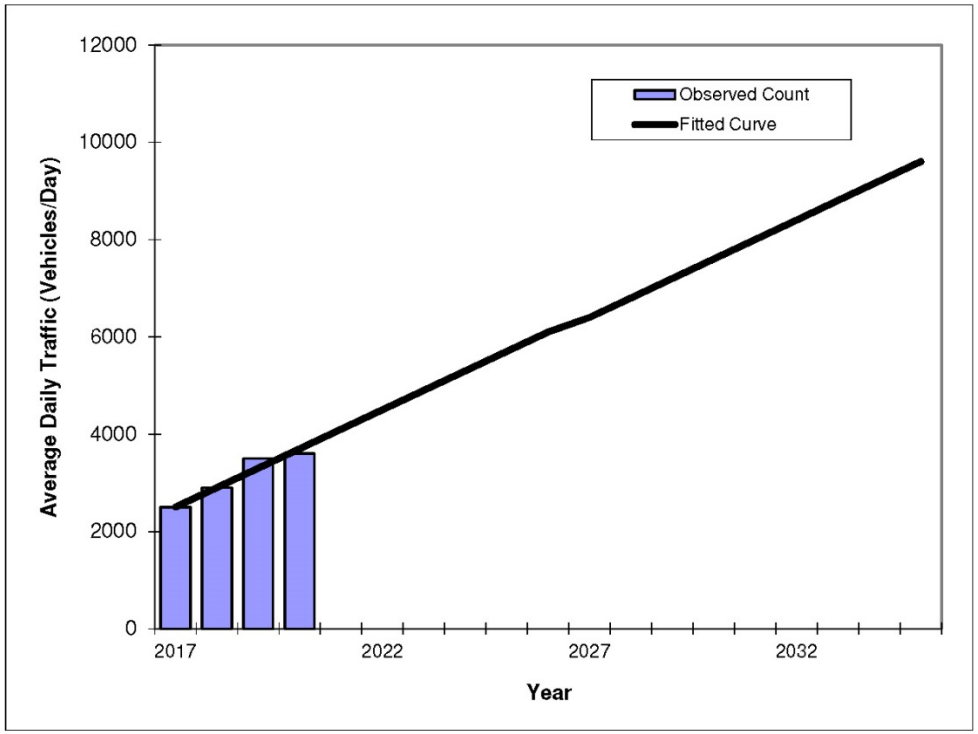
FDOT Traffic Trend Analysis

Traffic Trends - V03.a

Paradise Rd --

FIN#	0
Location	1

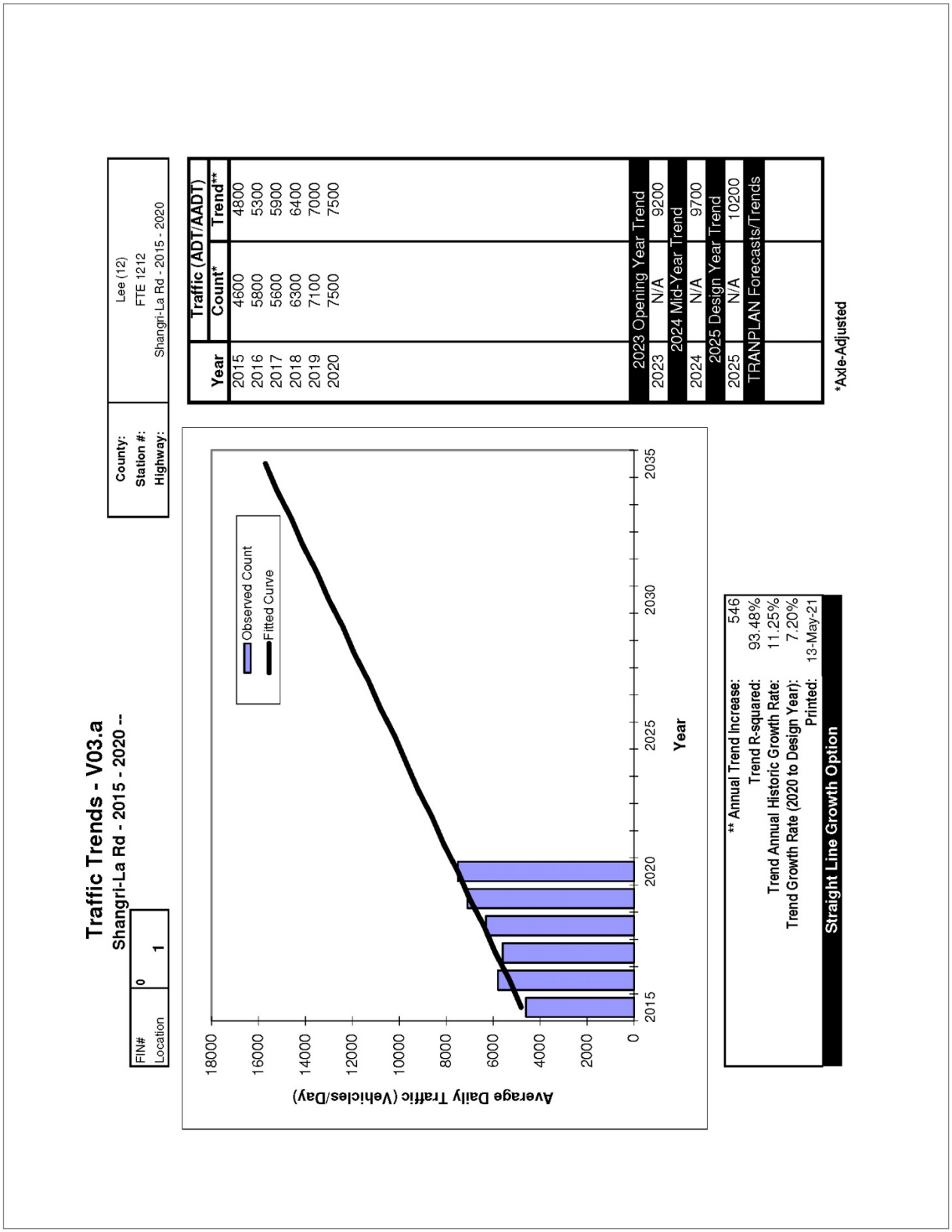
County:	Lee (12)
Station #:	FTE 0002
Highway:	Paradise Rd

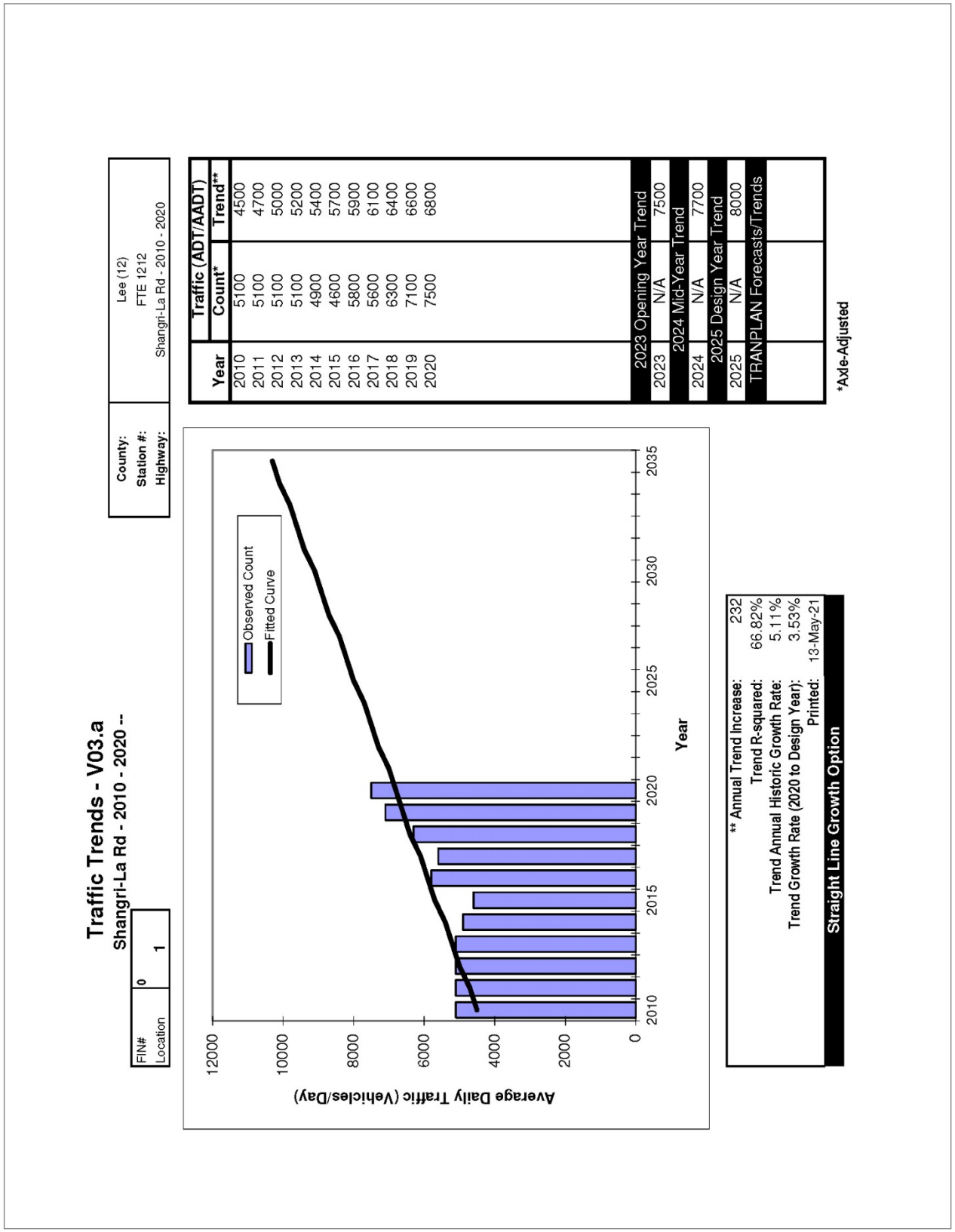


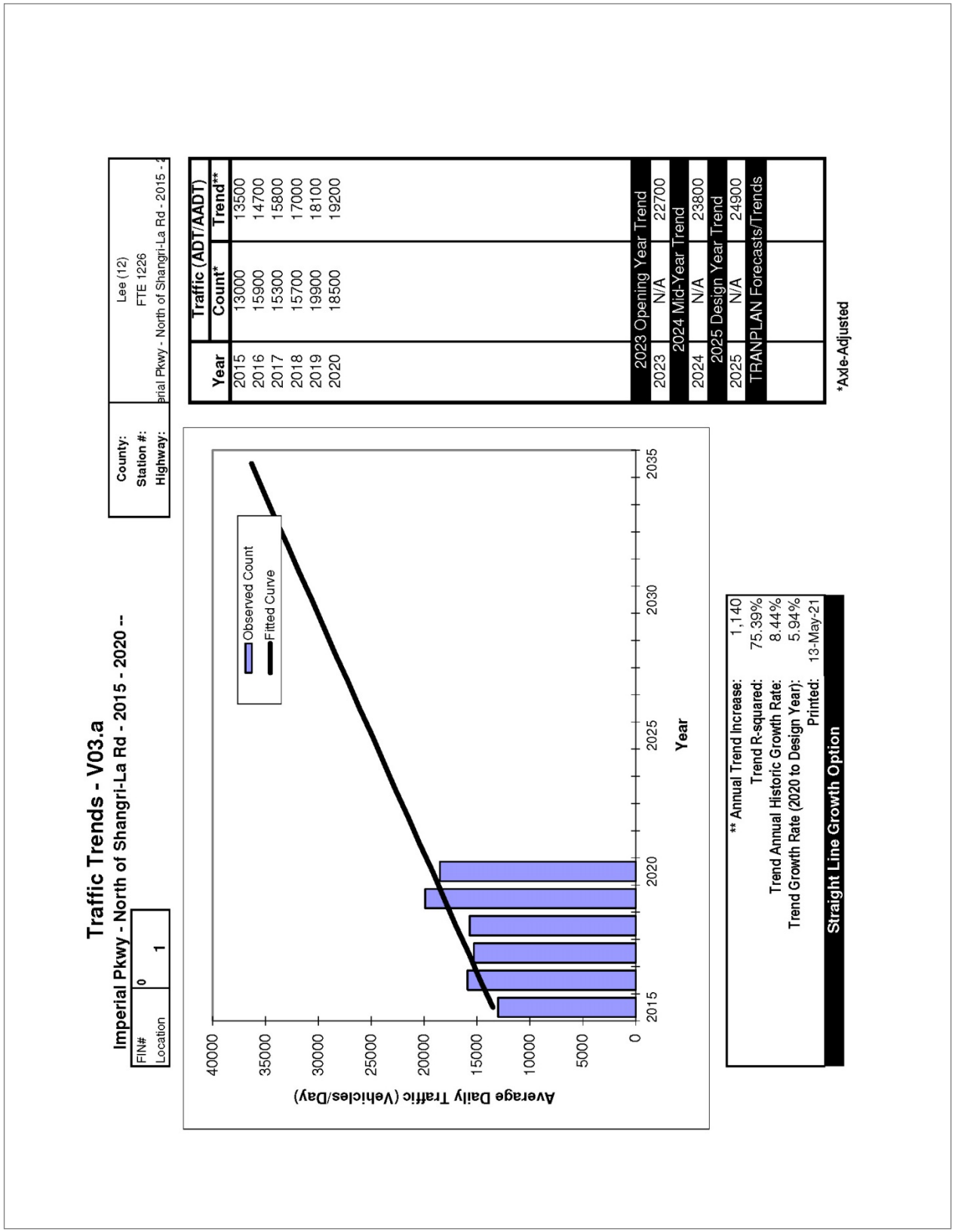
Year	Traffic (ADT/AADT) Count*	Trend**
2017	2500	2500
2018	2900	2900
2019	3500	3300
2020	3600	3700
2023 Opening Year Trend		
2023	N/A	4900
2024 Mid-Year Trend		
2024	N/A	5300
2025 Design Year Trend		
2025	N/A	5700
TRANPLAN Forecasts/Trends		

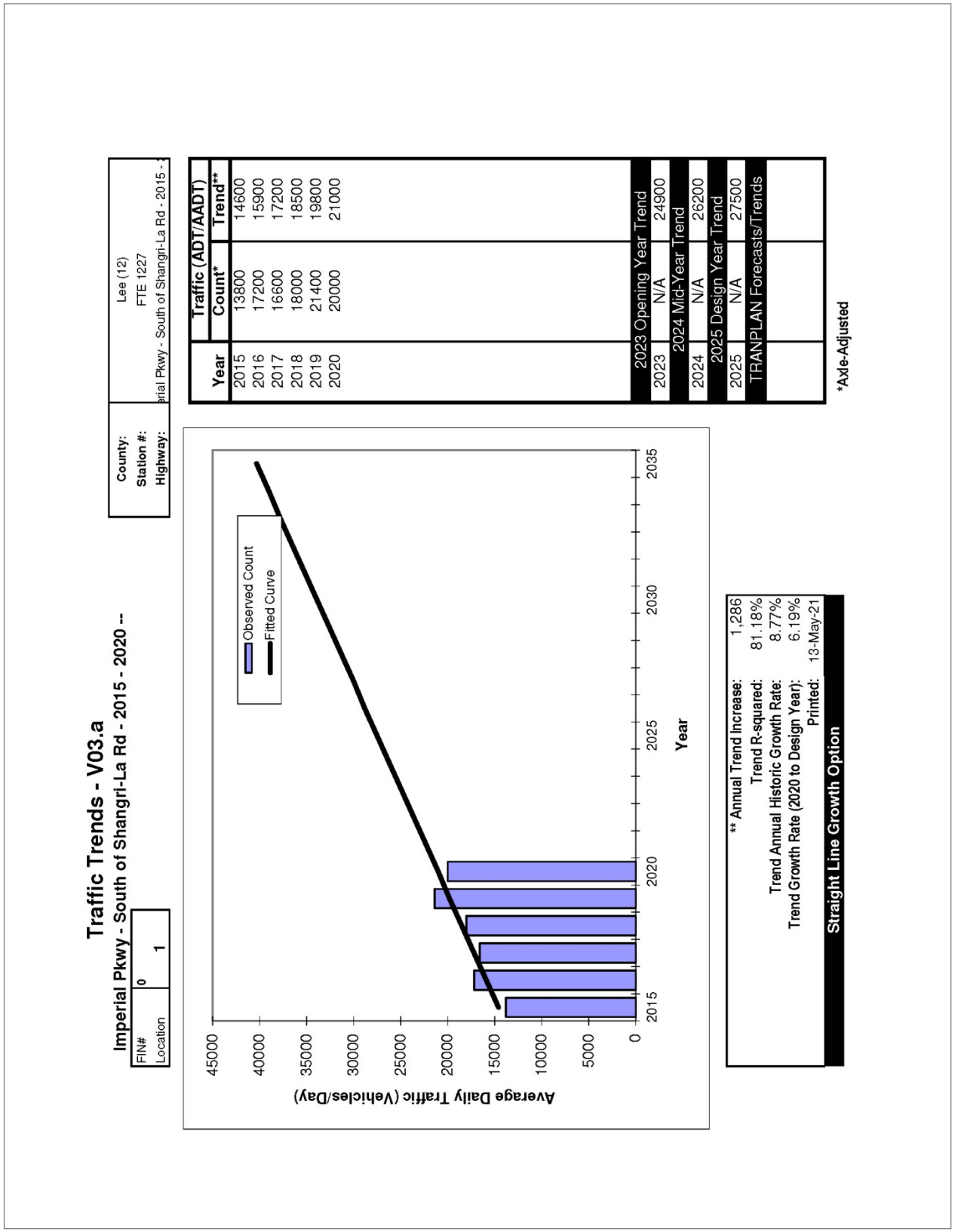
** Annual Trend Increase:	390
Trend R-squared:	94.18%
Trend Annual Historic Growth Rate:	16.00%
Trend Growth Rate (2020 to Design Year):	10.81%
Printed:	13-May-21
Straight Line Growth Option	

*Axle-Adjusted


Traffic Trends - V03.a
Shangri-La Rd - 2015 - 2020 --
FIN# 0
Location 1
County: Lee (12)
Station #: FTE 1212
Highway: Shangri-La Rd - 2015 - 2020
Traffic (ADT/AADT)
Year | Count* | Trend**
2015 4600 4800
2016 5800 5300
2017 5600 5900
2018 6300 6400
2019 7100 7000
2020 7500 7500
2023 Opening Year Trend
2023 N/A 9200
2024 Mid-Year Trend
2024 N/A 9700
2025 Design Year Trend
2025 N/A 10200
TRANPLAN Forecasts/Trends
*Axle-Adjusted
Observed Count
Fitted Curve
Average Daily Traffic (Vehicles/Day)
Year
** Annual Trend Increase: 546
Trend R-squared: 93.48%
Trend Annual Historic Growth Rate: 11.25%
Trend Growth Rate (2020 to Design Year): 7.20%
Printed: 13-May-21
Straight Line Growth Option


Traffic Trends - V03.a
Shangri-La Rd - 2010 - 2020 --
FIN# 0
Location 1
County: Lee (12)
Station #: FTE 1212
Highway: Shangri-La Rd - 2010 - 2020
Traffic (ADT/AADT)
Year | Count* | Trend**
2010 5100 4500
2011 5100 4700
2012 5100 5000
2013 5100 5200
2014 4900 5400
2015 4600 5700
2016 5800 5900
2017 5600 6100
2018 6300 6400
2019 7100 6600
2020 7500 6800
2023 Opening Year Trend
2023 N/A 7500
2024 Mid-Year Trend
2024 N/A 7700
2025 Design Year Trend
2025 N/A 8000
TRANPLAN Forecasts/Trends
*Axle-Adjusted
Observed Count
Fitted Curve
Average Daily Traffic (Vehicles/Day)
Year
0
2000
4000
6000
8000
10000
12000
2010
2015
2020
2025
2030
2035
** Annual Trend Increase: 232
Trend R-squared: 66.82%
Trend Annual Historic Growth Rate: 5.11%
Trend Growth Rate (2020 to Design Year): 3.53%
Printed: 13-May-21
Straight Line Growth Option


Traffic Trends - V03.a
Imperial Pkwy - North of Shangri-La Rd - 2015 - 2020 --
FIN# 0
Location 1
County: Lee (12)
Station #: FTE 1226
Highway: erial Pkwy - North of Shangri-La Rd - 2015 - 2
Traffic (ADT/AADT)
Year | Count* | Trend**
2015 13000 13500
2016 15900 14700
2017 15300 15800
2018 15700 17000
2019 19900 18100
2020 18500 19200
2023 Opening Year Trend
2023 N/A 22700
2024 Mid-Year Trend
2024 N/A 23800
2025 Design Year Trend
2025 N/A 24900
TRANPLAN Forecasts/Trends
*Axle-Adjusted
Observed Count
Fitted Curve
Average Daily Traffic (Vehicles/Day)
Year
0
5000
10000
15000
20000
25000
30000
35000
40000
2015
2020
2025
2030
2035
** Annual Trend Increase: 1,140
Trend R-squared: 75.39%
Trend Annual Historic Growth Rate: 8.44%
Trend Growth Rate (2020 to Design Year): 5.94%
Printed: 13-May-21
Straight Line Growth Option


Traffic Trends - V03.a
Imperial Pkwy - South of Shangri-La Rd - 2015 - 2020 --
FIN# 0
Location 1
County: Lee (12)
Station #: FTE 1227
Highway: Imperial Pkwy - South of Shangri-La Rd - 2015 -
Observed Count
Fitted Curve
Average Daily Traffic (Vehicles/Day)
Year
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
2015
2020
2025
2030
2035
** Annual Trend Increase: 1,286
Trend R-squared: 81.18%
Trend Annual Historic Growth Rate: 8.77%
Trend Growth Rate (2020 to Design Year): 6.19%
Printed: 13-May-21
Straight Line Growth Option
Year
Traffic (ADT/AADT)
Count*
Trend**
2015 13800 14600
2016 17200 15900
2017 16600 17200
2018 18000 18500
2019 21400 19800
2020 20000 21000
2023 Opening Year Trend
2023 N/A 24900
2024 Mid-Year Trend
2024 N/A 26200
2025 Design Year Trend
2025 N/A 27500
TRANPLAN Forecasts/Trends
*Axle-Adjusted

Bonita Springs Golf Course PD - Post-Review Clarifications

Ross, Tom/ORL <Tom.Ross2@jacobs.com> Thu, May 20, 2021 at 10:15 AM
To: Ciprian Malaescu <cmalaescu@trebilcock.biz>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>, "Cepeda, Milagros/ORL" <Milagros.Cepeda@jacobs.com>

Ciprian,

The Projected Growth Rates memo states that Collier County limits traffic growth rates to a maximum of 4% per year. Please send the documentation from Collier County that specifies that limit as policy and/or code.

The Lee County example is related only to one location. Does Lee County limit the growth rate as a matter of policy? If so, please provide the documentation to support that.

Please send us the regression spreadsheet files for our review.

Thank you,

Tom Ross, P.E. (FL, TX & GA)

Traffic Group Leader, Florida

M 1 407 718 5443

tom.ross2@jacobs.com

Jacobs

200 S. Orange Ave. Ste 900

Orlando, FL 32801

www.jacobs.com | LinkedIn | Twitter | Facebook |_Instagram

From: Ciprian Malaescu <cmalaescu@trebilcock.biz>
Sent: Friday, May 14, 2021 12:06 PM
To: Ross, Tom/ORL <Tom.Ross2@jacobs.com>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>

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[Quoted text hidden]

NOTICE - This communication may contain confidential and privileged information that is for the sole use of the intended recipient. Any viewing, copying or distribution of, or reliance on this message by unintended recipients is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer.

Bonita Springs Golf Course PD - Post-Review Clarifications

Ciprian Malaescu <cmalaescu@trebilcock.biz> Fri, May 21, 2021 at 2:45 PM
To: "Ross, Tom/ORL" <Tom.Ross2@jacobs.com>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>, "Cepeda, Milagros/ORL" <Milagros.Cepeda@jacobs.com>

Hi Tom,

Please below our responses to your request:

The Projected Growth Rates memo states that Collier County limits traffic growth rates to a maximum of 4% per year. Please send the documentation from Collier County that specifies that limit as policy and/or code.

Response:

1. Collier County 2020 AUIR Attachment H-1 - Projected Collier County Deficient Roads FY 2020 - FY 2030 - see attached item 1

2. MASTER Attachment F-2020 (092120.1) - spreadsheet provided by County staff to consultants - see attached item 2

- please refer to "Growth Rate Calculation" tab - column AR (calculated CAGR) and column AT (2% min or manual override) - please note the 4% maximum rate for all monitored roads

- please refer to "5-10 year deficiencies-Seventh" tab - please note that 2020 counts refer to actual counts; 2021-2025 utilize a maximum of 4%, 2026-2030 utilize a 2% growth

The Lee County example is related only to one location. Does Lee County limit the growth rate as a matter of policy? If so, please provide the documentation to support that.

Response:

1. Per 2020 Lee County Concurrency Report - page 32 - "Future estimated LOS in the table in Appendix B adds the higher of one-percent-per-year growth projections, or estimated traffic volumes from approved development orders to 100th highest-hour volumes calculated from the most recent traffic counts." - please see attached item 3

2. Please refer to Best Home Services - DO TIS (attached item 4) and Esplanade Lake Club Phase 2 - DO TIS (attached item 5) - a 4% maximum rate was deemed reasonable

Please send us the regression spreadsheet files for our review.

Response:

Please see attached items 6,7,8,9,10

City of Bonita Traffic Data

- Paradise Rd 2017 - 2020

- Shangri La Rd - Report 2015-2020 (available for projections 2009,2010,2012 and 2014)

- Imperial - 2015 - 2020

Thank you for taking the time to speak to me on the phone.

Ciprian

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10 attachments

2020 AUIR - Attachment H-1.pdf
837K

MASTER Attachment F-2020 (092120.1).xlsm
722K

Lee County Concurrency Rpt 2020 - pg 32.pdf
640K

Best Home Services - TIS - 07-07-2020 - pg 8.pdf
212K

Esplanade Lake Club Phase 2 - DO - TIS -03-15-2020 - pg 8.pdf
210K

Paradise Rd - TREND_V03a - 5-13-21.xls
2846K

Shangri-La Rd - 5 yr - TREND_V03a - 5-13-21.xls
2846K

Shangri-La Rd - 10 yr - TREND_V03a - 5-13-21.xls
2841K

Imperial - North of Shangri-La Rd - 5 yr - TREND_V03a - 5-13-21.xls
2840K

Imperial - South of Shangri-La Rd - 5 yr - TREND_V03a - 5-13-21.xls
2840K

Bonita Springs Golf Course PD - Post-Review Clarifications

Ross, Tom/ORL <Tom.Ross2@jacobs.com> Thu, May 20, 2021 at 10:31 AM
To: Ciprian Malaescu <cmalaescu@trebilcock.biz>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>, "Cepeda, Milagros/ORL" <Milagros.Cepeda@jacobs.com>

Ciprian,

Another question: How many units total can be/are permitted that have access to Paradise Road?

[Quoted text hidden]
[Quoted text hidden]

Bonita Springs Golf Course PD - Post-Review Clarifications

Ciprian Malaescu <cmalaescu@trebilcock.biz> Fri, May 21, 2021 at 3:53 PM
To: "Ross, Tom/ORL" <Tom.Ross2@jacobs.com>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>, "Cepeda, Milagros/ORL" <Milagros.Cepeda@jacobs.com>

Hi Tom,

Approach 1
- Based on the City of Bonita Traffic Counts - Paradise Rd - 212vph AM and PM - this is the adopted peak hour, peak season, peak direction (100th highest hour) for this segment. Our project adds 190vph AM peak hour and 208vph PM peak hour, for a maximum total of 420vph which is under the adopted LOS D - 660vph.
In addition, we have performed traffic counts at Shangri-La and Paradise Rd intersection. After adjustments to peak season, our traffic counts are under the volumes presented in the City's Report.

Approach 2
- as discussed, we have quantified 595 residential units that are serviced by Paradise Rd. Using LUC 210 (Equations) the traffic generated is 320vph in the AM peak hour and it is 355vph in the PM peak hour. After adding our project, the worst case expected traffic based on this exercise is 563vph = 355+208 (PM peak hour). As such, the adopted LOS service volume is not exceeded with the additional project traffic in place.

The City provides traffic counts at this location which are performed yearly for peak season traffic conditions. As such,we recommend relying on the actual count data which reflect site specific traffic patterns.

Thank you for your time
Ciprian

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--
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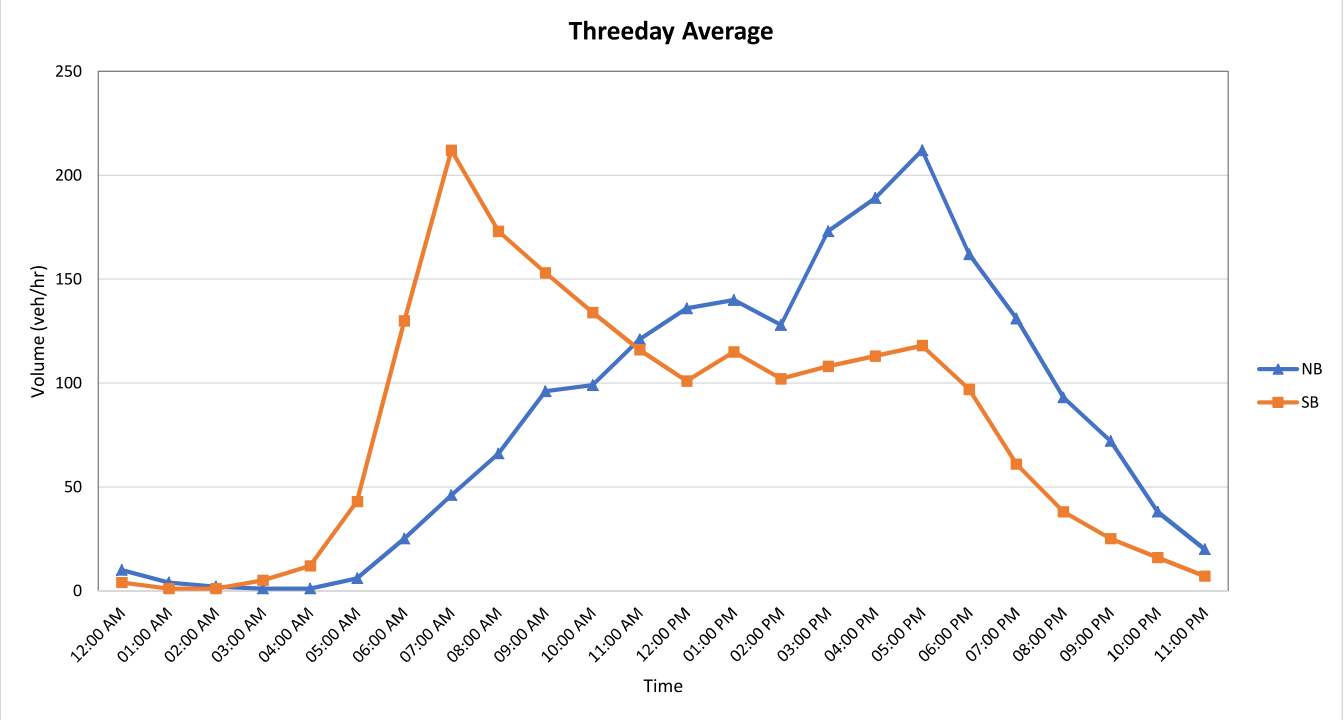
City of Bonita Springs Traffic Count Report March 2020 - Paradise Rd.pdf
124K

0002-Paradise Rd N. of Shangri-La
Bonita Springs, FL

8250 Pascal Dr
Punta Gorda, FL
Ph# (941) 639 2818
Fax# (941) 639 4851

Time	Tuesday 3/3/2020		Wednesday 3/4/2020		Thursday 3/5/2020		Threeday Average	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	7	4	10	4	12	3	10	4
01:00 AM	3	1	6	2	3	1	4	1
02:00 AM	3	3	0	0	4	1	2	1
03:00 AM	1	4	1	7	0	3	1	5
04:00 AM	0	13	3	8	1	14	1	12
05:00 AM	5	45	5	40	8	43	6	43
06:00 AM	26	140	21	130	27	119	25	130
07:00 AM	52	192	36	230	49	214	46	212
08:00 AM	71	175	67	159	61	185	66	173
09:00 AM	77	144	108	158	103	156	96	153
10:00 AM	93	142	111	136	92	125	99	134
11:00 AM	125	104	122	133	115	110	121	116
12:00 PM	118	92	143	93	148	119	136	101
01:00 PM	136	112	143	107	142	125	140	115
02:00 PM	148	83	117	111	120	112	128	102
03:00 PM	167	108	173	109	179	107	173	108
04:00 PM	206	134	177	105	183	100	189	113
05:00 PM	211	132	208	110	217	112	212	118
06:00 PM	167	105	173	104	146	83	162	97
07:00 PM	126	58	131	53	137	72	131	61
08:00 PM	83	28	109	42	88	44	93	38
09:00 PM	81	22	65	24	71	29	72	25
10:00 PM	30	16	37	16	48	15	38	16
11:00 PM	18	6	22	7	20	7	20	7
Day Total	1954	1863	1988	1888	1974	1899	1971	1885
Combine Totals	3817		3876		3873		3856	



Trebilcock planning-engineering

Ciprian Malaescu <cmalaescu@trebilcock.biz>

Bonita Springs Golf Course PD - Post-Review Clarifications

Ross, Tom/ORL <Tom.Ross2@jacobs.com> Mon, May 24, 2021 at 10:45 AM
To: Ciprian Malaescu <cmalaescu@trebilcock.biz>
Cc: Norman Trebilcock <ntrebilcock@trebilcock.biz>, "Cepeda, Milagros/ORL" <Milagros.Cepeda@jacobs.com>, Jay Sweet <jsweet@cityofbonitaspringscd.org>

Ciprian,

Based on our review of the supporting documentation and after discussing this item with Staff, we do not have objections to the proposed response to Comment #4. Please make sure all of the supporting information, including what you provided in your emails to me, are included in the next official submittal for the project file.

Thank you,

Tom Ross, P.E. (FL, TX & GA)

Traffic Group Leader, Florida

M 1 407 718 5443

tom.ross2@jacobs.com

Jacobs

200 S. Orange Ave. Ste 900

Orlando, FL 32801

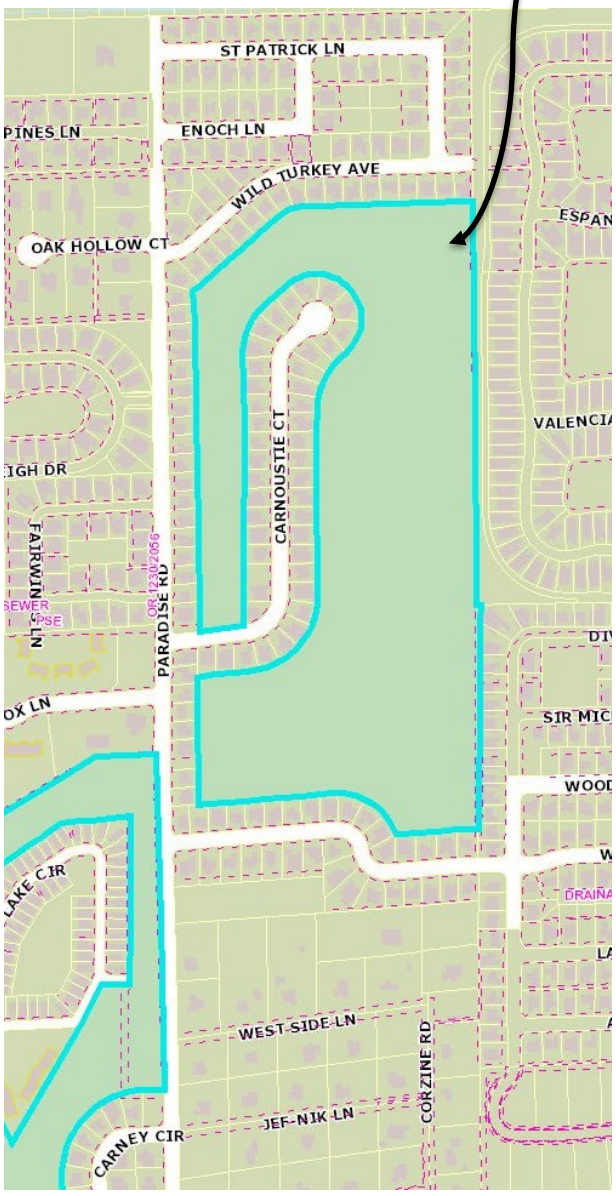
www.jacobs.com | LinkedIn | Twitter | Facebook | Instagram

Bonita Springs Golf Course RPD

Exhibit IV-C
ROW and Easement Map

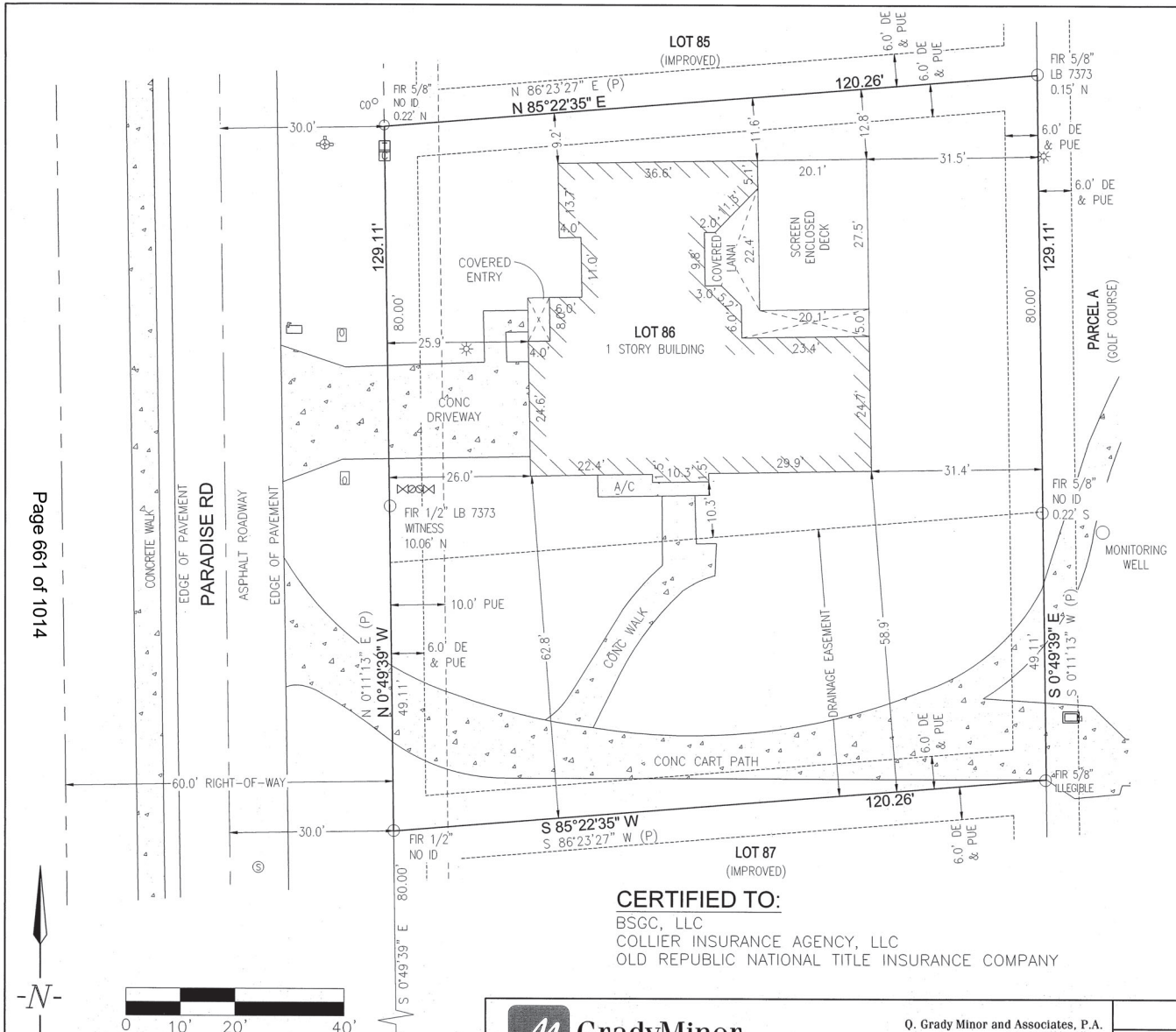
Subject Property

North Parcel



South Parcel

*Also see Boundary Survey and Master Plan



-N-

0 10' 20' 40'

SCALE: 1" = 20'

THIS PLAN MAY HAVE BEEN ENLARGED OR REDUCED FROM INTENDED DISPLAY SCALE FOR REPRODUCTION REASONS

CERTIFIED TO:

BSGC, LLC
COLLIER INSURANCE AGENCY, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

PROPERTY DESCRIPTION

(PER PROVIDED TITLE COMMITMENT)

LOT 86, BONITA SPRINGS COUNTRY CLUB UNIT 1, A SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AT PLAT BOOK 30, PAGES 81 THROUGH 84, IN THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA

CONTAINING 0.36 ACRE MORE OR LESS

NOTES:

1. BEARINGS SHOWN HEREON ARE BASED ON THE STATE PLANE COORDINATE SYSTEM ESTABLISHED BY THE NATIONAL GEODETIC SURVEY FOR FLORIDA WEST ZONE, 1983 DATUM WITH 1990 ADJUSTMENT OBTAINED UTILIZING RTK GPS OBSERVATIONS ON THE FDOT NETWORK AND REFER TO THE EAST LINE OF LOT 86, AS BEING S 0°49'39" E.
2. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF ABSTRACT OF TITLE PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, WITH AN OFFICE FILE NUMBER CIA 20-234, HAVING AN EFFECTIVE DATE OF AUGUST 25, 2020 AT 8:00 AM. AND MAY BE SUBJECT TO EASEMENTS, RESERVATIONS AND/OR RESTRICTIONS OF RECORD. ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.
3. THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X, HAVING NO BASE FLOOD ELEVATION, PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP # 12071C 0656 F, DATED 8/28/2008.
4. CERTAIN FEATURES REPRESENTED BY SYMBOLS MAY NOT BE SHOWN AT THEIR TRUE LOCATION AND/OR SCALE IN ORDER TO BE ABLE TO DEPICT THEM ON THIS MAP.
5. DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.
6. THIS SURVEY DOES NOT ADDRESS ANY ENVIRONMENTAL CONCERNS, ENDANGERED WILDLIFE OR JURISDICTIONAL WETLANDS, IF ANY, EXCEPT AS SHOWN ON THIS SURVEY.
7. THIS CERTIFICATION IS ONLY FOR THE LANDS DESCRIBED HEREON. IT IS NOT A CERTIFICATION OF TITLE, ZONING, SETBACKS, OR FREEDOM OF ENCUMBRANCES.
8. THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE DIGITAL SIGNATURE AND DIGITAL SEAL OF A LICENSED FLORIDA SURVEYOR AND MAPPER. NO ADDITIONS OR DELETIONS TO THIS SURVEY MAP ARE PERMITTED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PARTY.
9. UNLESS OTHERWISE NOTED, BELOW GROUND UTILITIES AND FOUNDATIONS WERE NOT LOCATED FOR THE PURPOSES OF THIS SURVEY.
10. BY SIGNING BELOW I CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION AND THAT IT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J-17.051, F.A.C, PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES.
11. LOT IS SUBJECT TO A GOLFERS EASEMENT AS RECORDED IN OFFICIAL RECORDS BOOK 1214, PAGE 2116 AND EASEMENTS REFERRED TO IN OFFICIAL RECORDS BOOK 3826, PAGE 3640, BOTH OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA
12. PER THE RECORDED PLAT THE 6' DE & PUE DEPICTED ALONG THE PERIMETER OF THE LOT EXISTS UNLESS SHOWN OTHERWISE. BECAUSE THERE ARE ADDITIONAL EASEMENTS SHOWN ALONG THE SOUTH AND WEST BOUNDARY OF THE SUBJECT LOT IT IS POSSIBLE THAT THE 6' DE & PUE DOES NOT EXIST AS SHOWN HEREON IN THOSE AREAS. AN ATTORNEY AT LAW SHOULD BE CONSULTED TO CONFIRM THE EXISTENCE OF SAID EASEMENT.
13. DATE OF LAST FIELD WORK: 9/12/2020.

LEGEND

FIP	FOUND IRON PIPE	A/C	AIR CONDITIONING UNIT/PAD
FIR	FOUND 5/8" IRON ROD	CONC	CONCRETE
(P)	PLAT	CO	CLEAN OUT
PB	PLAT BOOK		CATCH BASIN
PG	PAGE(S)		MITERED END
PSM	PROFESSIONAL SURVEYOR AND MAPPER		BACK FLOW PREVENTOR
LB	LICENSED BUSINESS		FIRE HYDRANT
PB	PLAT BOOK		LIGHT POLE
PG	PAGE(S)	T	TELEPHONE RISER/BOX
PSM	PROFESSIONAL SURVEYOR AND MAPPER	C	CABLE TELEVISION RISER/BOX
LB	LICENSED BUSINESS	S	SANITARY MANHOLE
DE	DRAINAGE EASEMENT		MAILBOX
PUE	PUBLIC UTILITY EASEMENT		

REVISION:
9/28/2020 – ADDED ADDITIONAL EASEMENTS AND NOTE 12.
5/24/2021 – ADDED ACREAGE.

DRAWN BY:	AH
CHECKED BY:	DLS
JOB CODE:	BSGC
SCALE:	1" = 20'
DATE: 22 SEPTEMBER 2020	
FILE:	20-144-LOT 86
SHEET:	1 of 1

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 • Cert. of Auth. LB 0005151 • Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380
Q. Grady Minor and Associates, P.A.
3800 Via Del Rey
Bonita Springs, Florida 34134

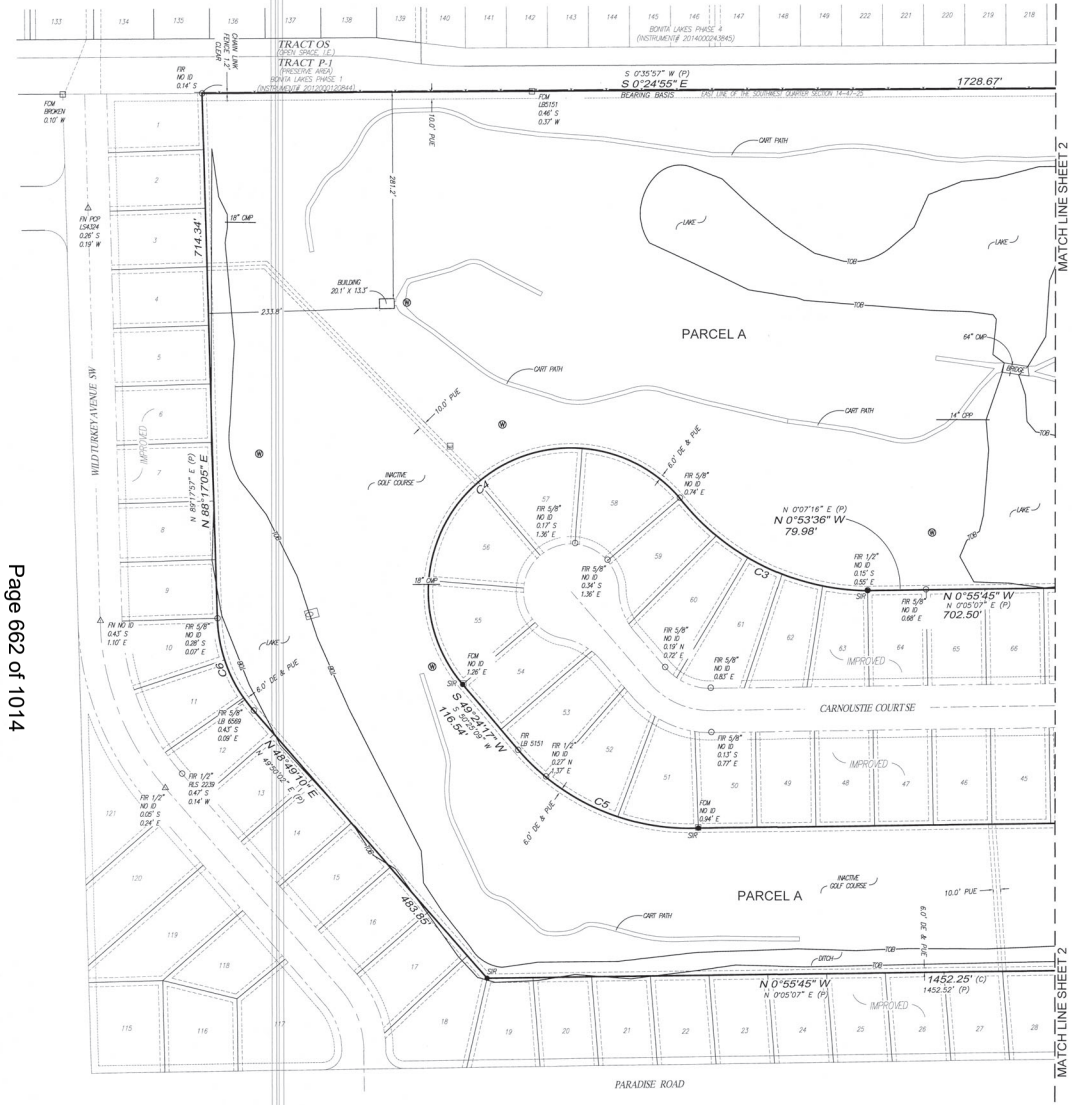
BOUNDARY SURVEY w/ IMPROVEMENTS

LOT 86
BONITA SPRINGS COUNTRY CLUB UNIT 1
PLAT BOOK 30, PAGES 81-84
LYING IN
SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

5/24/21
DATE SIGNED

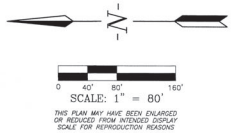
DONALD L. SAINTENOY III, P.S.M
FL LICENSE 6761
FOR THE FIRM

G:\SURVEY\PROJECT SURVEY 2020\144 – BONITA GOLF COURSE\SURVEY\20-144-LOT 86.DWG



VICINITY MAP
NOT TO SCALE

CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	260.00'	347.82'	76°38'55"	N 56°17'57" W	322.46'
(P)	260.00'	347.82'	76°38'55"	N 55°17'05" W	322.46'
C2	320.00'	482.02'	86°18'20"	N 42°13'25" E	437.73'
(P)	320.00'	482.02'	86°18'20"	N 43°14'17" E	437.73'
C3	330.00'	294.03'	51°03'01"	N 26°01'31" E	284.40'
(P)	330.00'	294.03'	51°03'01"	N 27°02'23" E	284.40'
C4	195.00'	612.61'	180°00'00"	N 40°35'45" W	390.00'
(P)	195.00'	612.61'	180°00'00"	N 39°34'53" W	390.00'
C5	305.00'	277.02'	52°02'23"	S 23°24'55" W	267.60'
(P)	305.00'	277.02'	52°02'23"	S 24°25'47" W	267.60'
C6	200.00'	137.76'	39°27'35"	N 68°33'18" E	135.05'
(P)	200.00'	137.76'	39°27'55"	N 69°33'59" E	135.05'



SCALE: 1" = 80'

THIS PLAN MAY HAVE BEEN ENLARGED OR REDUCED FROM INTENDED DISPLAY SCALE FOR REPRODUCTION REASONS

PROPERTY DESCRIPTION

(PER PROVIDED TITLE COMMITMENT)
PARCEL 3

PARCEL A, BONITA SPRINGS COUNTRY CLUB, UNIT 1, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 81 THROUGH 84, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

CONTAINING 55.99 ACRES, MORE OR LESS.

NOTES:

1. *BEARINGS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM ESTABLISHED BY THE NATIONAL GEODETIC SURVEY FOR FLORIDA WEST ZONE, 1983 DATUM WITH 1990 ADJUSTMENT OBTAINED USING RTK GPS OBSERVATIONS ON THE FDOT NETWORK AND ARE BASED ON THE EAST LINE OF PARCEL "A", BONITA SPRINGS COUNTRY CLUB, UNIT 1, PLAT BOOK 30, PAGES 81 THROUGH 84, PUBLIC RECORDS OF LEE COUNTY, FLORIDA, AS BEING S 0°24'55" E.*
2. *THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE COMMITMENT PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY HAVING A FILE NUMBER OF 18012483 KP AND A COMMITMENT EFFECTIVE DATE OF AUGUST 25, 2020 AT 8:00AM. MAY BE SUBJECT TO EASEMENTS, RESERVATIONS AND/OR RESTRICTIONS OF RECORD. ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.*
3. *THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X, HAVING NO BASE FLOOD ELEVATION, PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS # 12071C 0593 G, 12071C 0594 G, DATED 7 DECEMBER 2018 AND 12071C 0656 F, AND 12071C 0657 F, DATED 28 AUGUST 2008.*
4. *CERTAIN FEATURES REPRESENTED BY SYMBOLS MAY NOT BE SHOWN AT THEIR TRUE LOCATION AND/OR SCALE IN ORDER TO BE ABLE TO DEPICT THEM ON THIS MAP.*
5. *DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.*
6. *THIS SURVEY DOES NOT ADDRESS ANY ENVIRONMENTAL CONCERNS, ENDANGERED WILDLIFE OR JURISDICTIONAL WETLANDS, IF ANY, EXCEPT AS SHOWN ON THIS SURVEY.*
7. *THIS CERTIFICATION IS ONLY FOR THE LANDS DESCRIBED HEREON. IT IS NOT A CERTIFICATION OF TITLE, ZONING, SETBACKS, OR FREEDOM OF ENCUMBRANCES.*
8. *THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE DIGITAL SIGNATURE AND DIGITAL SEAL OF A LICENSED FLORIDA SURVEYOR AND MAPPER. NO ADDITIONS OR DELETIONS TO THIS SURVEY MAP ARE PERMITTED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PARTY.*
9. *UNLESS OTHERWISE NOTED, BELOW GROUND UTILITIES AND FOUNDATIONS WERE NOT LOCATED FOR THE PURPOSES OF THIS SURVEY.*
10. *BY SIGNING BELOW I CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION AND THAT IT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J-17.051, F.A.C, PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES.*
11. *PARCEL A AS SHOWN ON THE RECORDED PLAT DOES NOT CLOSE MATHEMATICALLY. THE MISCLOSURE HAS BEEN ACCOUNTED FOR BY THE CALCULATED DISTANCES SHOWN HEREON.*
12. *DATE OF LAST FIELD WORK: 11 SEPTEMBER 2020.*

CERTIFIED TO:

BS PROPERTY HOLDINGS, LLC
BSGC LAND HOLDINGS, LLC
COLLIER INSURANCE AGENCY, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

LEGEND

POC	POINT OF COMMENCEMENT	(P)	PLAT	TOE	TOP OF CURB ELEVATION	MHD	DRAINAGE MANHOLE	SV	SEWER VALVE		
POB	POINT OF BEGINNING	(M)	MEASURED	RIM	RIM ELEVATION	EM	ELECTRIC MANHOLE	SSN	SEWER ON POLE		
FIP	FOUND IRON PIPE	(C)	CALCULATED	INV	INVERT ELEVATION	EB	ELECTRIC BOX/RISER/METER	TS	TELEPHONE MANHOLE		
FIR	FOUND 5/8" IRON ROD	(D)	DEED	ELEV	ELEVATION	FH	FIRE HYDRANT	TRS	TELEPHONE BOX/RISER		
SIR	SET 5/8" IRON ROD w/CAP, L.B. #5151	BOL	CONCRETE BOLLARD	A/C	AIR CONDITIONING UNIT		ELECTRIC TRANSFORMER	TL	TRAFFIC LIGHT		
FCM	FOUND 4"x4" CONCRETE MONUMENT	CT	GREASE TRAP	BFP	BACK FLOW PREVENTOR	GSM	GAS SERVICE/METER	UG	UNDERGROUND		
SCM	SET CONC. MONUMENT w/ALUMINUM DISK, L.B.# 5151	PB	PLAT BOOK		CABLE T.V. BOX/RISER	GV	GAS VALVE	UPM	UTILITY POLE - WOOD		
		PG	PAGE	CB	CATCH BASIN/INLET		GUY ANCHOR	UPC	UTILITY POLE - CONCRETE		
FPK	FOUND PARKER KALON NAIL	OR	OFFICIAL RECORDS BOOK	CO	CLEAN OUT	IV	IRRIGATION VALVE		WATER METER		
SPK	SET PARKER KALON NAIL w/BRASS DISK, L.B.# 5151	R.O.W.	RIGHT-OF-WAY	CONC	CONCRETE	ICV	IRRIGATION CONTROL VALVE	WV	WATER VALVE		
		EOP	EDGE OF PAVEMENT	CHW	CONCRETE HEAD WALL	LP	LIGHT POLE	YD	YARD DRAIN		
FDH	FOUND DRILL HOLE	PUE	PUBLIC UTILITY EASEMENT	ℓ	CENTERLINE		METERED END		OAK TREE		
SDH	SET DRILL HOLE	LB	LICENSED BUSINESS	CMP	CORRUGATED METAL PIPE	OH	OVERHEAD WIRES		PALM TREE		
FMN	FOUND MAG NAIL	PSM	PROFESSIONAL SURVEYOR AND MAPPER	CPP	CORRUGATED PLASTIC PIPE	RCP	REINFORCED CONCRETE PIPE		PINE TREE		
FND	FOUND	SPC	STATE PLANE COORDINATES	DE	DRAINAGE EASEMENT	MHS	SANITARY MANHOLE		WELL		
				UE	UTILITY EASEMENT	NGVD 29	NATIONAL GEODETIC VERTICAL DATUM OF 1929			DIP	DUCTILE IRON PIPE
						NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988				

REVISION: ADDED ACREAGE AND REVISED NOTE 2 5-21-2021.
REVISION: UPDATED BOUNDARY SURVEY 9-19-2020.

NOT COMPLETE WITHOUT SHEETS 1-2 OF 2

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3800 Via Del Rey
Bonita Springs, Florida 34134
Business LC 26000266

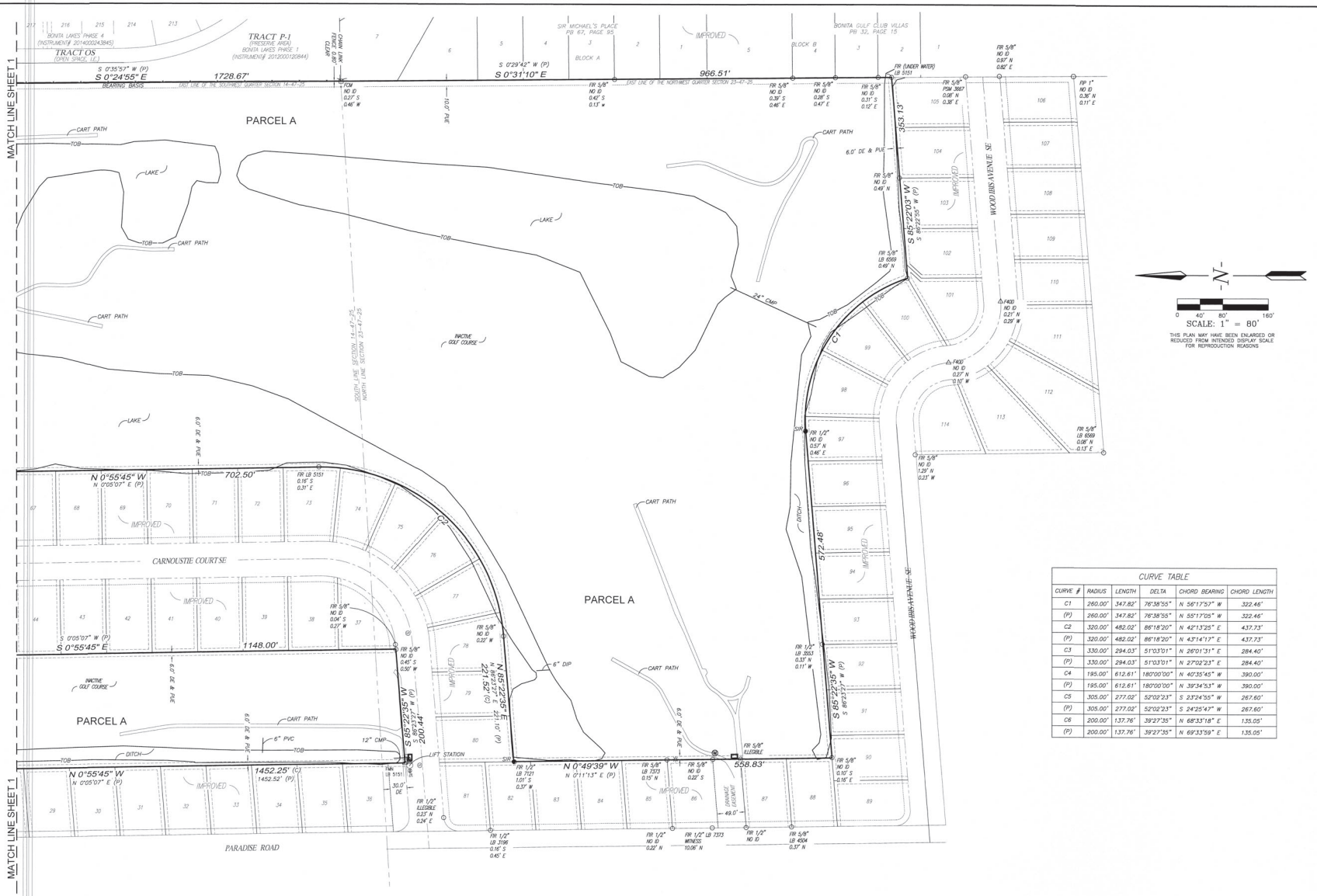
DRAWN BY:	KJG
CHECKED BY:	DLS
JOB CODE:	BSGC
SCALE:	1" = 80'
DATE:	21 MAY 2018
FILE:	20-144-BS NORTH.DWG
SHEET:	1 of 2

BOUNDARY SURVEY
BONITA SPRINGS COUNTRY CLUB, UNIT 1
PARCEL A
PLAT BOOK 30, PAGES 81 THROUGH 84
LYING IN
SECTIONS 14 AND 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

5/24/21
DATE SIGNED

DONALD L. SAINTENOY III, P.S.M
FL LICENSE #6761
FOR THE FIRM

G:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GOLF COURSE\SURVEY\20-144-BS NORTH.DWG



CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	260.00'	347.82'	76°38'55"	N 56°17'57" W	322.46'
(P)	260.00'	347.82'	76°38'55"	N 55°17'05" W	322.46'
C2	320.00'	482.02'	86°18'20"	N 42°13'25" E	437.73'
(P)	320.00'	482.02'	86°18'20"	N 43°14'17" E	437.73'
C3	330.00'	294.03'	51°03'01"	N 26°01'31" E	284.40'
(P)	330.00'	294.03'	51°03'01"	N 27°02'23" E	284.40'
C4	195.00'	612.61'	180°00'00"	N 40°35'45" W	390.00'
(P)	195.00'	612.61'	180°00'00"	N 39°34'53" W	390.00'
C5	305.00'	277.02'	52°02'23"	S 23°24'55" W	267.60'
(P)	305.00'	277.02'	52°02'23"	S 24°25'47" W	267.60'
C6	200.00'	137.76'	39°27'35"	N 68°33'18" E	135.05'
(P)	200.00'	137.76'	39°27'35"	N 69°33'59" E	135.05'

LEGEND

POC POINT OF COMMENCEMENT
POB POINT OF BEGINNING
FIP FOUND IRON PIPE
FIR FOUND 5/8" IRON ROD
SIR SET 5/8" IRON ROD w/CAP, LB #5151
FCM FOUND 4"x4" CONCRETE MONUMENT
SCM SET CONC. MONUMENT w/ALUMINUM DISK, LB# 5151
FPK FOUND PARKER KALON NAIL
SPK SET PARKER KALON NAIL w/BRASS DISK, LB# 5151
FDH FOUND DRILL HOLE
SDH SET DRILL HOLE
FMN FOUND MAG NAIL
FND FOUND
(P) PLAT
(M) MEASURED
(C) CALCULATED
(D) PER DEED
BOL CONCRETE BOLLARD
GT GREASE TRAP
PB PLAT BOOK
PG PAGE
OR OFFICIAL RECORDS BOOK
R/W RIGHT-OF-WAY
EOP EDGE OF PAVEMENT
PUE PUBLIC UTILITY EASEMENT
LB LICENSED BUSINESS
PSM PROFESSIONAL SURVEYOR AND MAPPER
SPC STATE PLANE COORDINATES
TG TOP OF GRATE ELEVATION
RIM RIM ELEVATION
INV INVERT ELEVATION
ELEV ELEVATION
A/C AIR CONDITIONING UNIT
BFP BACK FLOW PREVENTOR
CB CATCH BASIN/INLET
CO CLEAN OUT
CONC CONCRETE
CHW CONCRETE HEAD WALL
CL CENTERLINE
CMP CORRUGATED METAL PIPE
CPP CORRUGATED PLASTIC PIPE
DE DRAINAGE EASEMENT
WHO DRAINAGE MANHOLE
EB ELECTRIC MANHOLE
FH ELECTRIC BOX/RISER/METER
FIRE HYDRANT
ELECTRIC TRANSFORMER
GSM GAS SERVICE/METER
GV GAS VALVE
GUY ANCHOR
IV IRRIGATION VALVE
ICV IRRIGATION CONTROL VALVE
LP LIGHT POLE
MITERED END
OH OVERHEAD WIRES
RCP REINFORCED CONCRETE PIPE
WHS SANITARY MANHOLE
NGVD 29 NATIONAL GEODETIC VERTICAL DATUM OF 1929
NAVD 88 NORTH AMERICAN VERTICAL DATUM OF 1988
SV SEWER VALVE
SIGN SIGN ON POLE
TELEPHONE MANHOLE
TBS TELEPHONE BOX/RISER
TL TRAFFIC LIGHT
UG UNDERGROUND
UPM UTILITY POLE – WOOD
UPC UTILITY POLE – CONCRETE
WATER METER
WV WATER VALVE
YD YARD DRAIN
OAK TREE
PALM TREE
PINE TREE
WELL
DIP DUCTILE IRON PIPE

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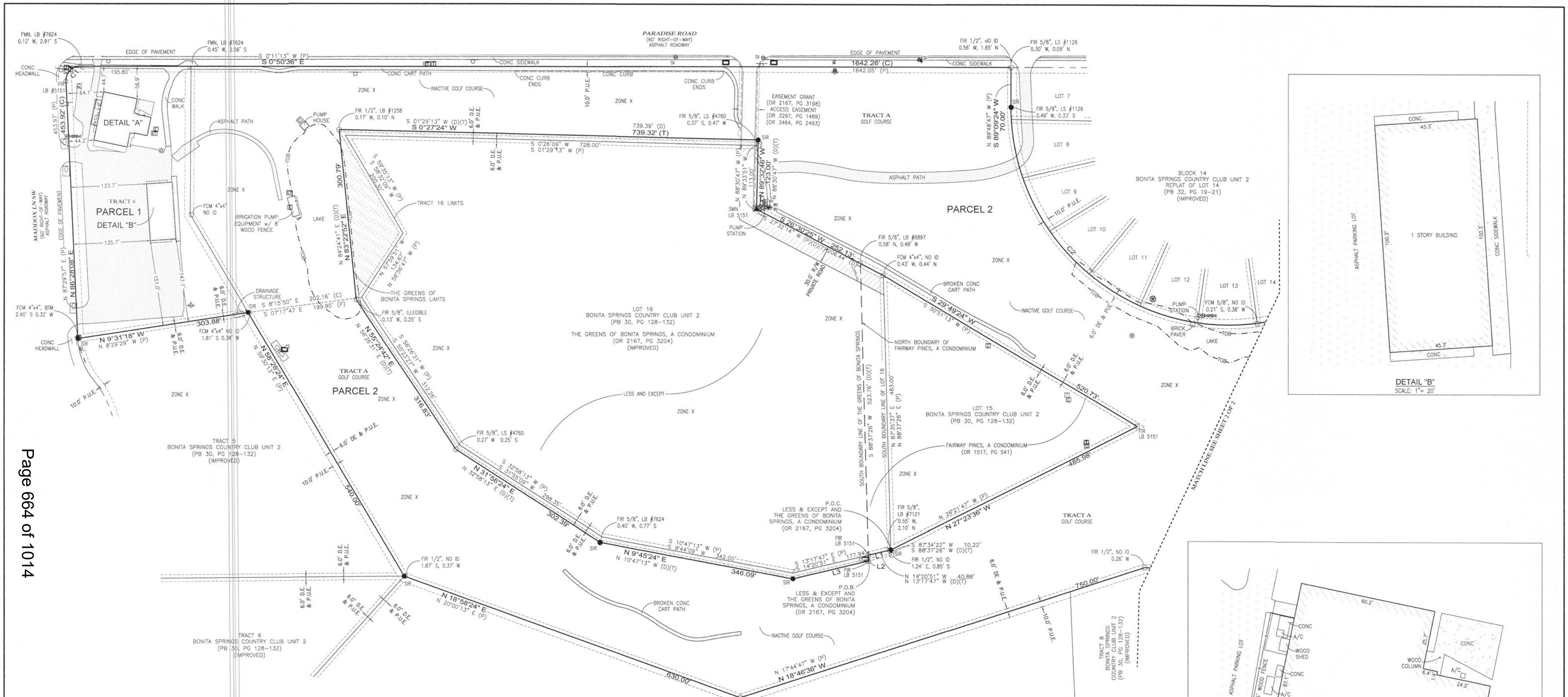
SHEET:	2 of 2

BOUNDARY SURVEY
BONITA SPRINGS COUNTRY CLUB, UNIT 1
PARCEL A
PLAT BOOK 30, PAGES 81 THROUGH 84
LYING IN
SECTIONS 14 AND 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

NOT COMPLETE WITHOUT SHEETS 1–2 OF 2

C:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GULF COURSE\SURVEY\20-144-BS NORTH.DWG



PROPERTY DESCRIPTION

(PER PROVIDED TITLE COMMITMENT)

PARCEL 1
TRACT 4, BONITA SPRINGS COUNTY CLUB, UNIT 2, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

PARCEL 2
TRACT A, BONITA SPRINGS COUNTRY CLUB, UNIT 2, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

LESS AND EXCEPT THE FOLLOWING DESCRIBED LANDS: A LOT OR PARCEL OF LAND LOCATED IN THE NORTHWEST 1/4 OF SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST, LEE COUNTY, FLORIDA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF TRACT 15, BONITA SPRINGS COUNTRY CLUB, UNIT 2, AS RECORDED IN PLAT BOOK 30, PAGE 132, IN THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA, RUN SOUTH 88°37'26 WEST FOR 10.22 FEET; THENCE RUN NORTH 13°17'47" WEST FOR 40.88 FEET TO THE POINT OF BEGINNING OF THE LANDS HEREIN DESCRIBED;

THENCE CONTINUE NORTH 13°17'47" WEST FOR 137.08 FEET; THENCE RUN NORTH 10°47'13" EAST FOR 346.09 FEET; THENCE RUN NORTH 32°58'13" EAST FOR 302.39 FEET; THENCE RUN NORTH 56°26'31" EAST FOR 316.83 FEET: THENCE RUN NORTH 84°24'41" EAST FOR 300.79 FEET; THENCE RUN SOUTH 01°29'13" WEST FOR 739.32 FEET TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY OF A 30 FOOT WIDE PRIVATE ROAD EXTENDING SOUTH 88°30'47 EAST; THENCE RUN NORTH 88°30'47" WEST FOR 123.00 FEET; THENCE RUN SOUTH 27°32'14" WEST FOR 206.44 FEET; THENCE RUN SOUTH 88°37'26" WEST FOR 523.76 FEET TO THE POINT OF BEGINNING.

PARCEL 6
TRACT 10, BONITA SPRINGS COUNTRY CLUB, UNIT 2, ACCORDING TO THE MAP OR PLAT THEREOF AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, PUBLIC RECORDS OF LEE COUNTY, FLORIDA.

CONTAINING 56.96 ACRES, MORE OR LESS.

SCALE: 1" = 80'

THIS PLAN MAY HAVE BEEN ENLARGED OR REDUCED FROM INTENDED DISPLAY SCALE FOR REPRODUCTION REASONS

CURVE TABLE					
CURVE #	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	25.00'	40.44'	92°41'16"	S 47°11'14" E	36.17'
C1 (P)	25.00'	40.44'	92°41'16"	S 46°09'25" E	36.17'
C2	383.00'	653.75'	97°48'00"	S 40°15'26" W	577.23'
C2 (P)	383.00'	653.75'	97°48'00"	S 41°17'13" W	577.23'

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N 14°19'36" W	40.88'
L2	S 87°35'37" W	10.22'
L3	N 14°19'36" W	137.09'
L3 (T)	N 13°17'47" W	137.08'
L3 (D)	N 13°17'47" W	137.80'

CERTIFIED TO:
BS PROPERTY HOLDINGS, LLC
BSGC LAND HOLDINGS, LLC
COLLIER INSURANCE AGENCY, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

LEGEND

POC		POINT OF COMMENCEMENT
POB		POINT OF BEGINNING
FIP	○	FOUND IRON PIPE
FIR	○	FOUND 5/8" IRON ROD
SIR	●	SET 5/8" IRON ROD w/CAP, L.B. #5151
FCM	□	FOUND 4"x4" CONCRETE MONUMENT
SCM	■	SET CONC. MONUMENT w/ALUMINUM DISK, L.B.# 5151
FPK	△	FOUND PARKER KALON NAIL
SMN	▲	SET MAG NAIL w/BRASS DISK, L.B.# 5151
FDH	○	FOUND DRILL HOLE
SDH	●	SET DRILL HOLE
FMN	△	FOUND MAG NAIL
FND		FOUND
SMN	▲	SET MAG NAIL w/BRASS DISK, L.B.# 5151
(P)		PER PLAT
(M)		MEASURED
(C)		CALCULATED
(D)		PER DEED
(EA)		TEMPORARY EASEMENT AGREEMENT
BOL	●	CONCRETE BOLLARD
(T)		PER TITLE COMMITMENT
PB		PLAT BOOK
PG		PAGE
OR		OFFICIAL RECORDS BOOK
R.O.W.		RIGHT-OF-WAY
EOP		EDGE OF PAVEMENT
U.E.		UTILITY EASEMENT
LB		LICENSED BUSINESS
PSM		PROFESSIONAL SURVEYOR AND MAPPER
SPC		STATE PLANE COORDINATES
CLF		CHAIN LINK FENCE
TG		TOP OF GRATE ELEVATION
RIM		RIM ELEVATION
INV		INVERT ELEVATION
ELEV		ELEVATION
A/C		AIR CONDITIONING UNIT
		BACK FLOW PREVENTOR
		CABLE T.V. BOX/RISER
		CATCH BASIN/INLET
CO		CLEAN OUT
CONC.		CONCRETE
CHW		CONCRETE HEAD WALL
℄		CENTERLINE
CMP		CORRUGATED METAL PIPE
CPP		CORRUGATED PLASTIC PIPE
FPL		FLORIDA POWER & LIGHT
		WELL/MONITORING WELL
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		ELECTRIC BOX/RISER/METER
		FIRE HYDRANT
		ELECTRIC TRANSFORMER
		GAS SERVICE/METER
		GREASE TRAP
		GUY ANCHOR
IRV		IRRIGATION VALVE
ICV		IRRIGATION CONTROL VALVE
		LIGHT POLE
		MITERED END
		OVERHEAD WIRES
RCP		REINFORCED CONCRETE PIPE
		SANITARY MANHOLE
		UNDERGROUND BURIED CABLE MARKER
NAVD 88		NORTH AMERICAN VERTICAL DATUM OF 1988
SV		SEWER VALVE
		SIGN ON POLE
		TELEPHONE MANHOLE
		TELEPHONE BOX/RISER
TL		TRAFFIC LIGHT
UG		UNDERGROUND
		UTILITY POLE - WOOD
		UTILITY POLE - CONCRETE
		WATER METER
WV		WATER VALVE
YD		YARD DRAIN
		AIR RELEASE VALVE
EOW		EDGE OF WATER
TOB		TOP OF BANK
TOS		TOE OF SLOPE
CS		CONTROL STRUCTURE

= CONCRETE
= ASPHALT
= BRICK PAVER
= THE GREENS CONDO OVERLAPS TRACT A

APPROXIMATE FLOOD ZONE / ELEVATION LINE

REVISION: ADDED ACREAGE AND PEVISED NOTE 2 5-21-2021.
REVISION: UPDATED BOUNDARY SURVEY 9-15-2020.

NOT COMPLETE WITHOUT SHEETS 1-2 OF 2

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DRAWN BY:	AH
CHECKED BY:	DLS
JOB CODE:	BSCCBS
SCALE:	1" = 80'
DATE:	21 MAY 2018
FILE:	20-144-BS SOUTH.DWG
SHEET:	1 of 2

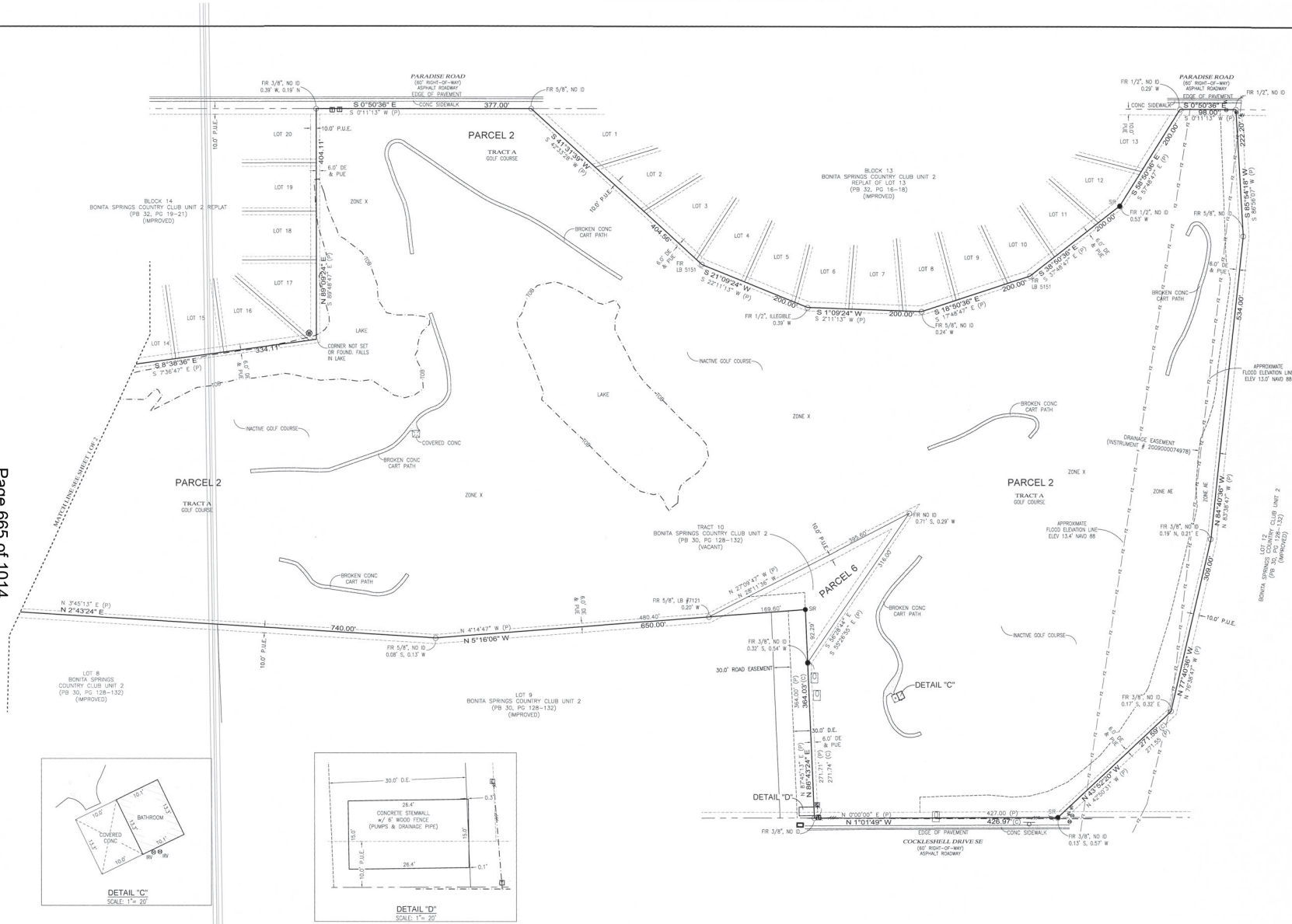
BOUNDARY SURVEY

TRACT A AND TRACT 4 AND TRACT 10
BONITA SPRINGS COUNTRY CLUB UNIT 2
PLAT BOOK 30, PAGES 128-132
LYING IN
SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

5/24/21
DATE SIGNED

RONALD L. SAINTENOY III, P.S.M.
FL LICENSE #6761
FOR THE FIRM

G:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GOLF COURSE\SURVEY\20-144-BS SOUTH.DWG



NOTES:

1. BEARINGS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM ESTABLISHED BY THE NATIONAL GEODETIC SURVEY FOR FLORIDA WEST ZONE, 1983 DATUM WITH 1990 ADJUSTMENT OBTAINED USING RTK GPS OBSERVATIONS ON THE FDOT NETWORK AND ARE BASED ON THE EAST LINE OF TRACT A, BONITA SPRINGS COUNTRY CLUB, UNIT 2, AS RECORDED IN PLAT BOOK 30, PAGES 128-132, OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA AS BEING S 0°50'36" E.

2. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE COMMITMENT PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY HAVING A FILE NUMBER OF 18012483 KP AND A COMMITMENT EFFECTIVE DATE OF AUGUST 25, 2020 AT 8:00AM. MAY BE SUBJECT TO EASEMENTS, RESTRICTIONS AND/OR RESTRICTIONS OF RECORD. ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.

3. THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X, HAVING NO BASE FLOOD ELEVATION; AND FLOOD ZONE AE HAVING A BASE FLOOD ELEVATION OF 13.0' AND 13.4' (NAVD 88), PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP # 12071C 0656 F, DATED 8/28/2008. FLOOD LINES SHOWN HEREON WERE OBTAINED FROM A LEE COUNTY GIS FILE AND ARE ASSUMED TO BE APPROXIMATE.

4. CERTAIN FEATURES REPRESENTED BY SYMBOLS MAY NOT BE SHOWN AT THEIR TRUE LOCATION AND/OR SCALE IN ORDER TO BE ABLE TO DEPICT THEM ON THIS MAP.

5. DIMENSIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.

6. THIS SURVEY DOES NOT ADDRESS ANY ENVIRONMENTAL CONCERNS, ENDANGERED WILDLIFE OR JURISDICTIONAL WETLANDS, IF ANY, EXCEPT AS SHOWN ON THIS SURVEY.

7. THIS CERTIFICATION IS ONLY FOR THE LANDS DESCRIBED HEREON. IT IS NOT A CERTIFICATION OF TITLE, ZONING, SETBACKS, OR FREEDOM OF ENCUMBRANCES.

8. THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE DIGITAL SIGNATURE AND DIGITAL SEAL OF A LICENSED FLORIDA SURVEYOR AND MAPPER. NO ADDITIONS OR DELETIONS TO THIS SURVEY MAP ARE PERMITTED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PARTY.

9. UNLESS OTHERWISE NOTED, BELOW GROUND UTILITIES AND FOUNDATIONS WERE NOT LOCATED FOR THE PURPOSES OF THIS SURVEY.

10. BY SIGNING BELOW I CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION AND THAT IT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J-17.051, F.A.C. PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES.

11. DATE OF LAST FIELD WORK: 9/15/2020.

12. THERE APPEARS TO BE AN OVERLAP BETWEEN THE GREENS OF BONITA SPRINGS CONDOMINIUM, AS RECORDED IN OFFICIAL RECORDS BOOK 2167, PAGE 3204, OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA AND TRACT A OF BONITA SPRINGS COUNTRY CLUB UNIT 2, AS RECORDED IN PLAT BOOK 30, PAGES 128 THROUGH 132, OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA. SAID OVERLAP IS SHOWN HEREON.

13. THE 30 FOOT PRIVATE ROAD RIGHT-OF-WAY SHOWN ON THE RECORDED PLAT IS NOT SHOWN HEREON. THAT PORTION WITHIN TRACT "F" WAS VACATED BY RESOLUTION 88-7-21. THAT PORTION WITHIN BLOCK 14 WAS REMOVED AT THE REQUEST OF THE ATTORNEY.

LEGEND

POC	POINT OF COMMENCEMENT	(P)	PER PLAT
POB	POINT OF BEGINNING	(M)	MEASURED
FIP	FOUND IRON PIPE	(C)	CALCULATED
FIR	FOUND 5/8" IRON ROD	(D)	PER DEED
SIR	SET 5/8" IRON ROD w/CAP, L.B. #5151	(DA)	TEMPORARY EASEMENT AGREEMENT
FCM	FOUND 4"x4" CONCRETE MONUMENT	BOL	CONCRETE BOLLARD
SCM	SET CONC. MONUMENT w/ALUMINUM DISK, L.B.# 5151	(T)	PER TITLE COMMITMENT
FPK	FOUND PARKER KALON NAIL	PB	PLAT BOOK
SMN	SET MAG NAIL w/BRASS DISK, L.B.# 5151	OR	OFFICIAL RECORDS BOOK
FDH	FOUND DRILL HOLE	R.O.W.	RIGHT-OF-WAY
SDH	SET DRILL HOLE	E.O.P.	EDGE OF PAVEMENT
FMN	FOUND MAG NAIL	U.E.	UTILITY EASEMENT
FND	FOUND	LB	LICENSED BUSINESS
SMN	SET MAG NAIL w/BRASS DISK, L.B.# 5151	PSM	PROFESSIONAL SURVEYOR AND MAPPER
		SPC	STATE PLANE COORDINATES
		CLF	CHAIN LINK FENCE

TG	TOP OF GRATE ELEVATION
INA	INA ELEVATION
INV	INVERT ELEVATION
ELEV	ELEVATION
A/C	AIR CONDITIONING UNIT
BFP	BACK FLOW PREVENTOR
CB	CABLE T.V. BOX/RISER
DI	CATCH BASIN/INLET
CO	CLEAN OUT
CONC	CONCRETE
C/HW	CONCRETE HEAD WALL
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
FPL	FLORIDA POWER & LIGHT
MW	MONITORING WELL

DM	DRAINAGE MANHOLE
EM	ELECTRIC MANHOLE
EB	ELECTRIC BOX/RISER/METER
FH	FIRE HYDRANT
TF	ELECTRIC TRANSFORMER
GM	GAS SERVICE/METER
GT	GREASE TRAP
GA	GUY ANCHOR
IRV	IRRIGATION VALVE
ICV	IRRIGATION CONTROL VALVE
LP	LIGHT POLE
ME	MITERED END
OW	OVERHEAD WIRES
RCP	REINFORCED CONCRETE PIPE
SM	SANITARY MANHOLE
	UNDERGROUND BURIED CABLE MARKER
NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988

SV	SEWER VALVE
	SIGN ON POLE
	TELEPHONE MANHOLE
	TELEPHONE BOX/RISER
TL	TRAFFIC LIGHT
UG	UNDERGROUND
	UTILITY POLE - WOOD
	UTILITY POLE - CONCRETE
WM	WATER METER
WV	WATER VALVE
YD	YARD DRAIN
	AIR RELEASE VALVE
EOW	EDGE OF WATER
TOB	TOP OF BANK
TOS	TOE OF SLOPE
CS	CONTROL STRUCTURE

= CONCRETE
= ASPHALT
= BRICK PAVER
= THE GREENS CONDO OVERLAPS TRACT A

— FZ — FZ — FZ — APPROXIMATE FLOOD ZONE / ELEVATION LINE

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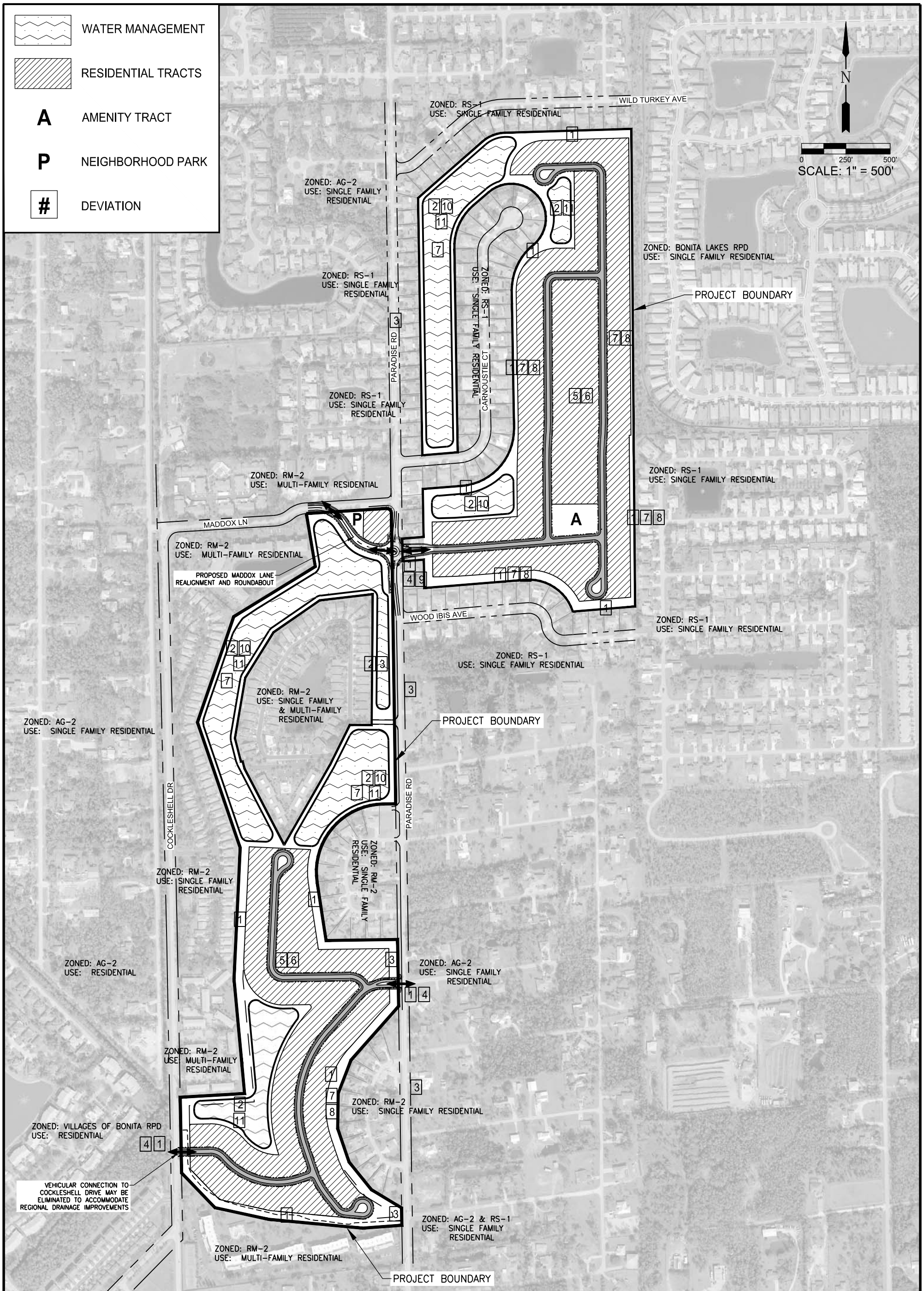
BOUNDARY SURVEY

TRACT A, TRACT 4 AND TRACT 10
BONITA SPRINGS COUNTRY CLUB UNIT 2
PLAT BOOK 30, PAGES 128-132
LYING IN
SECTION 23, TOWNSHIP 47 SOUTH, RANGE 25 EAST
LEE COUNTY, FLORIDA

NOT COMPLETE WITHOUT SHEETS 1-2 OF 2

G:\SURVEY\PROJECT SURVEY 2020\144 - BONITA GOLF COURSE\SURVEY\20-144-BS SOUTH.DWG



LEGEND

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Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266

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3800 Via Del Rey
Bonita Springs, Florida 34134

BONITA SPRINGS GOLF COURSE RPD

EXHIBIT IV.E
MASTER CONCEPT PLAN

SCALE: 1" = 500'
JOB CODE: BCBSCC-20
DATE: OCTOBER 2021
FILE NAME: BCBSCC-20 EXH IV-E (V1)
SHEET 1 OF 4

P:\ACTIVE_PROJECTS\P-BSGC-001\001_PRELIMDESIGN\DRAWINGS-CIVIL\EXHIBITS\X26-BSGC_MCP\REV01\BCBSCC-20 EXH IV-E (V1).DWG 10/8/2021 3:30 PM

GENERAL NOTES:

1. THE DEVELOPMENT PLAN DEPICTED IS CONCEPTUAL IN NATURE AND IS SUBJECT TO MINOR REVISIONS THAT ARE CONSISTENT WITH THE CONCEPTS DEPICTED HERE.

2. THE PROPERTY IS LOCATED EAST OF LEE TRAN ROUTE 600, WHICH RUNS ALONG OLD 41 ROAD. THE SOUTHERN RPD PARCEL IS ALSO LOCATED WITHIN THE 3/4 MILE ADA CORRIDOR.

3. ALL INTERNAL ROADS ARE TWO LANE PRIVATE LOCAL ROADS.

4. BUFFERS PROVIDED PER LDC OR AS APPROVED BY DEVIATION.

SITE SUMMARY

FUTURE LAND USE DESIGNATION:	MEDIUM DENSITY MULTI-FAMILY RESIDENTIAL AND MODERATE DENSITY SINGLE FAMILY RESIDENTIAL
EXISTING ZONING DESIGNATION:	RM-2 AND RS-1
EXISTING LAND USE:	GOLF COURSE
PROPOSED ZONING DESIGNATION:	RPD, RESIDENTIAL PLANNED DEVELOPMENT
GROSS AREA:	113± ACRES
STRAP NUMBERS:	23-47-25-B1-1400A.0000, 23-47-25-B1-0050A.000, 23-47-25-B1-01400.0860 and 23-47-25-B1-00500.0040
STREET ADDRESS:	GOLF COURSE, 10200 MADDOX LANE AND 25117 PARADISE ROAD
MAXIMUM DWELLING UNITS:	350
TOTAL SITE AREA:	113± ACRES
DEVELOPMENT AREA:	113± ACRES (100%)
PRESERVE:	N.A.± ACRES (0%)

OPEN SPACE

REQUIRED: 113 X .40 = 45.2± ACRES
PROVIDED: 45.2± ACRES

INDIGENOUS PRESERVE: N.A., CHAPTER 4-2312(d)(11) REQUIRES NO INDIGENOUS PRESERVATION AS PART OF A GOLF COURSE CONVERSION

SCHEDULE OF USES:

1. ACCESSORY USES AND STRUCTURES
2. ADMINISTRATIVE OFFICES
3. COMMUNITY GARDENS
4. DWELLING UNITS:
   - NORTH PARCEL:
     - SINGLE FAMILY
     - TWO FAMILY ATTACHED (TWIN VILLA)
   - SOUTH PARCEL:
     - MULTIPLE FAMILY
     - SINGLE FAMILY
     - TOWNHOUSE
     - TWO FAMILY ATTACHED (TWIN VILLA)
5. ENTRANCE GATE
6. EXCAVATION, WATER RETENTION
7. FENCES AND WALLS
8. FOOD AND BEVERAGE SERVICE, LIMITED
9. PARKING LOT ACCESSORY
10. RECREATION FACILITIES (CLUBS), PRIVATE, ON-SITE WITH CONSUMPTION ON-PREMISES
11. SIGNS

DEVIATIONS FROM THE LDC: (REFER TO EXHIBIT IV-H)

1. DEVIATION 1: SEEKS RELIEF FROM SEC. 4-2312(d)(5) – GOLF COURSE REDEVELOPMENT REGULATIONS – DEVELOPMENT APPROVAL AND STANDARDS WHICH PROHIBITS GATES OR WALLS ALONG THE PROJECT BOUNDARY TO ALLOW GATES AT THE PROJECT ENTRANCES AND WALLS ALONG THE PROJECT BOUNDARY.

2. DEVIATION 2: SEEKS RELIEF FROM SEC. 3-331(d)(5) – EXCAVATIONS FOR WATER RETENTION AND DETENTION WHICH STATES THAT, AT THE DISCRETION OF THE CITY MANAGER OR DESIGNEE, A FOUR FOOT TALL FENCE MAY BE REQUIRED AROUND EXCAVATIONS LOCATED LESS THAN 100 FEET FROM ANY PROPERTY UNDER SEPARATE OWNERSHIP TO NOT REQUIRE FENCES AROUND WATER MANAGEMENT LAKES.

3. DEVIATION 3: SEEKS RELIEF FROM SEC. 3-263(b)(2) – BIKEWAYS FACILITIES AND PEDESTRIAN FACILITIES WHICH REQUIRES THAT THE DEVELOPER CONSTRUCT BIKE AND PEDESTRIAN FACILITIES IN THE PUBLIC ROAD RIGHTS-OF-WAY IF PROPOSED IN THE CITY'S BICYCLE AND PEDESTRIAN MASTER PLAN TO PROVIDE AN ALTERNATIVE PATHWAYS PLAN.

4. DEVIATION 4: SEEKS RELIEF FROM SEC. 3-297(3) – ACCESS TO STREET REQUIRED WHICH REQUIRES THAT ANY RESIDENTIAL DEVELOPMENT OF MORE THAN FIVE ACRES PROVIDE TWO OR MORE MEANS OF INGRESS AND EGRESS TO THE PROJECT TO ALLOW A SINGLE ACCESS TO THE NORTHERN RESIDENTIAL TRACT AND A SINGLE ACCESS TO THE SOUTHERN TRACT.

5. DEVIATION 5: SEEKS RELIEF FROM SEC. 3-303(b) – COMPLETE STREET DESIGN WHICH ESTABLISHES THE MINIMUM DIMENSIONAL STANDARDS AND REQUIRED FACILITIES FOR PUBLIC AND PRIVATELY MAINTAINED STREETS TO PROVIDE AN ALTERNATIVE STREET DESIGN.

6. DEVIATION 6: SEEKS RELIEF FROM SEC. 3-303(e)(14)(1) – COMPLETE STREET DESIGN WHICH ESTABLISHES THE REQUIREMENTS FOR STREET TREES TO NOT REQUIRE STREET TREES ON PRIVATE STREETS INTERNAL TO THE DEVELOPMENT.

7. DEVIATION 7 SEEKS RELIEF FROM SEC. 4-2312(d)(7) – GOLF COURSE REDEVELOPMENT REGULATIONS – DEVELOPMENT APPROVAL AND STANDARDS WHICH REQUIRES A 50 FOOT WIDE BUFFER WITH SCREENING AT A MINIMUM HEIGHT OF SIX FEET TO ALLOW REDUCED BUFFERS IN LOCATIONS IDENTIFIED ON THE MCP AND TO NOT REQUIRE SIX FEET SCREENING FOR BUFFERS ADJACENT TO THE LAKES.

8. DEVIATION 8: SEEKS RELIEF FROM SEC. 4-2312(d)(9) – GOLF COURSE REDEVELOPMENT REGULATIONS – DEVELOPMENT APPROVAL AND STANDARDS WHICH REQUIRES THE INCLUSION OF A TREE LINED TRAIL (12 FOOT MINIMUM WIDTH) IN INSTANCES WHEN THE BUFFER IS REDUCED TO LESS THAN 50 FEET TO PROVIDE FOR AN ALTERNATIVE PATHWAY RANGING FROM 6 FEET TO 12 FEET IN WIDTH, OR NO PATH BUT ADDED BUFFERS WHEN THE CITY'S STAFF AND DRAINAGE CONSULTANT DEEMS ADDITIONAL STORAGE IS NEEDED FOR THE AREA WIDE PUBLIC DRAINAGE SYSTEM.

9. DEVIATION 9: SEEKS RELIEF FROM SEC. 4-2312(d)(12) – MINIMUM ROAD WIDTH WHICH PROVIDES MINIMUM WIDTH OF ANY PORTION OF GOLF COURSE PROPERTY CONSIDERED FOR REDEVELOPMENT ON WHICH A ROADWAY WILL TRAVERSE TO MEET SPECIFIC WIDTH STANDARDS TO ALLOW AN ACCESS ROAD TO THE NORTHERN TRACT THROUGH PROPERTY THAT IS 129.11 FEET WIDE.

10. DEVIATION 10: SEEKS RELIEF FROM SEC. 3-417(b)(1)b.4. – INDIGENOUS NATIVE VEGETATION WHICH REQUIRES EFFORTS BE MADE TO PRESERVE HERITAGE TREES AND SPECIFIES SIZING CRITERIA FOR REPLACEMENT LANDSCAPING FOR IMPACTED HERITAGE TREES TO NOT REQUIRE REPLACEMENT TREES FOR HERITAGE TREES REMOVED TO PROVIDE REGIONAL DRAINAGE IMPROVEMENTS.

11. DEVIATION 11: SEEKS RELIEF FROM SEC. 3-417 (d)(2)c. – USE OF OPEN SPACE WHICH LIMITS EXISTING OR PROPOSED BODIES OF WATER, INCLUDING STORMWATER MANAGEMENT AREAS TO OFFSET UP TO A MAXIMUM OF 25 PERCENT OF THE REQUIRED OPEN SPACE TO ALLOW STORMWATER MANAGEMENT AREAS TO OFFSET UP TO A MAXIMUM OF 40 PERCENT OF THE REQUIRED OPEN SPACE.

12. DEVIATION 12: SEEKS RELIEF FROM SECTION 6-39. (c)(3) - NONCONFORMING SIGNS WHICH A NONCONFORMING SIGN SHALL BECOME AN ILLEGAL SIGN WHICH SHALL NOT BE REPLACED OR REPAIRED, IN PART OR IN FULL, EXCEPT UPON FULL COMPLIANCE WITH THIS CHAPTER WHEN MORE THAN 25 PERCENT OF THE COPY AREA IS REMOVED OR UNASSEMBLED FOR A PERIOD OF MORE THAN SIX MONTHS TO PERMIT GREATER THAN 25% OF THE SIGN COPY TO BE MODIFIED DURING ANY SINGLE 12-MONTH PERIOD FOR THE EXISTING OFF-SITE LOCATED AT THE INTERSECTION OF COCKLESHELL CT. AND OLD 41 ROAD TO REMAIN WITHIN THE COCKLESHELL CT. ROW.

13. DEVIATION 13: SEEKS RELIEF FROM SECTION 6-146. (a)(1) - OFF-SITE DIRECTIONAL SIGNAGE WHICH REQUIRES OFF-SITE, NON-ILLUMINATING DIRECTIONAL SIGNS FOR SUBDIVISIONS OR RESIDENTIAL PROJECTS SHALL BE PERMITTED ALONG ARTERIAL AND COLLECTOR STREETS WITHIN 500 FEET OF THE NEAREST INTERSECTION INVOLVING A TURNING MOVEMENT TO LOCATE THE DEVELOPMENT, TO PERMIT THE EXISTING OFF-SITE APPROXIMATELY 250 SQUARE FOOT SIGN LOCATED AT THE INTERSECTION OF COCKLESHELL CT. AND OLD 41 ROAD TO REMAIN WITHIN THE COCKLESHELL CT. ROW, AND TO PERMIT GREATER THAN 25% OF THE SIGN COPY TO BE MODIFIED DURING ANY SINGLE 12-MONTH PERIOD.

14. DEVIATION 14: SEEKS RELIEF FROM SECTION 4-2312 (d) (4), WHICH PROHIBITS ALTERATIONS TO ELEVATION OF PROPERTY WITHIN 30 FEET OF THE GOLF COURSE PROPERTY BOUNDARY TO INSTEAD ALLOW ALTERATIONS OF PROPERTY ELEVATION WHERE REQUIRED TO IMPLEMENT IMPROVEMENTS FOR THE STORMWATER MANAGEMENT SYSTEM AS PERMITTED BY SFWMD.

LEGEND

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BONITA SPRINGS GOLF COURSE RPD

EXHIBIT IV.E
MASTER CONCEPT PLAN
(NOTES)

SCALE: N.T.S.
JOB CODE: BCBSCC-20
DATE: OCTOBER 2021
FILE NAME: BCBSCC-20 EXH IV-E (V1)
SHEET 2 OF 4

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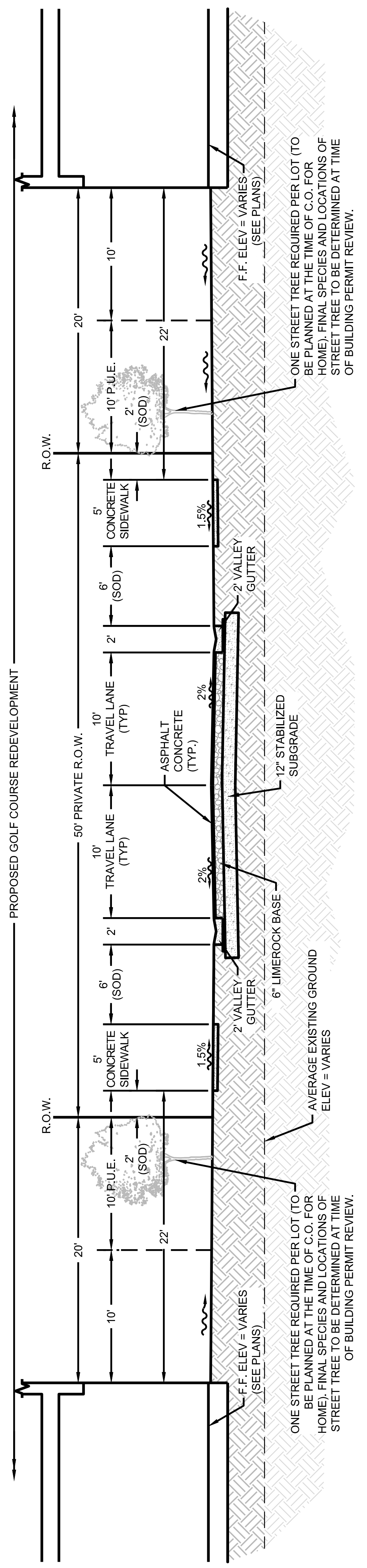

TYPICAL ROADWAY CROSS SECTION

SCALE: 1" = 10'

LEGEND

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BONITA SPRINGS GOLF COURSE RPD

EXHIBIT IV.E
MASTER CONCEPT PLAN
(TYPICAL ROADWAY SECTION)

SCALE:	N.T.S.
JOB CODE:	BCBSCC-20
DATE:	OCTOBER 2021
FILE NAME:	BCBSCC-20 EXH IV-E (V1)
SHEET 3 OF 4	

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WATER MANAGEMENT

RESIDENTIAL TRACTS

A AMENITY TRACT

P NEIGHBORHOOD PARK

PROPOSED 6' MINIMUM WIDTH PATHWAY

N

0 250' 500'

SCALE: 1" = 500'

ZONED: RS-1
USE: SINGLE FAMILY RESIDENTIAL

WILD TURKEY AVE

ZONED: AG-2
USE: SINGLE FAMILY RESIDENTIAL

ZONED: BONITA LAKES RPD
USE: SINGLE FAMILY RESIDENTIAL

ZONED: RS-1
USE: SINGLE FAMILY RESIDENTIAL

PROJECT BOUNDARY

PARADISE RD

ZONED: RS-1
USE: SINGLE FAMILY RESIDENTIAL

CARNOUSTIE CT

ZONED: RS-1
USE: SINGLE FAMILY RESIDENTIAL

PROPOSED PATHWAY (WIDTH VARIES FROM 6' TO 12' BASE ON FINAL STORMWATER MANAGEMENT SYSTEM DESIGN

ZONED: RM-2
USE: MULTI-FAMILY RESIDENTIAL

CONNECT PROPOSED PATHWAYS SYSTEM TO DEVELOPMENT PEDESTRIAN PATHWAY SYSTEM

P

A

MADDOX LN

ZONED: RM-2
USE: MULTI-FAMILY RESIDENTIAL

PROPOSED MADDOX LANE REALIGNMENT AND ROUNDABOUT

WOOD IBIS AVE

ZONED: RS-1
USE: SINGLE FAMILY RESIDENTIAL

ZONED: RS-1
USE: SINGLE FAMILY RESIDENTIAL

PROPOSED PATHWAY (WIDTH VARIES FROM 6' TO 12' BASE ON FINAL STORMWATER MANAGEMENT SYSTEM DESIGN

ZONED: RM-2
USE: SINGLE FAMILY & MULTI-FAMILY RESIDENTIAL

ZONED: AG-2
USE: SINGLE FAMILY RESIDENTIAL

PROJECT BOUNDARY

COCKLESHELL DR

PARADISE RD

ZONED: RM-2
USE: SINGLE FAMILY RESIDENTIAL

ZONED: RM-2
USE: SINGLE FAMILY RESIDENTIAL

CONNECT PROPOSED PATHWAYS SYSTEM TO DEVELOPMENT PEDESTRIAN PATHWAY SYSTEM

ZONED: AG-2
USE: RESIDENTIAL

ZONED: AG-2
USE: SINGLE FAMILY RESIDENTIAL

PROPOSED PATHWAY (WIDTH VARIES FROM 6' TO 12' BASE ON FINAL STORMWATER MANAGEMENT SYSTEM DESIGN

ZONED: RM-2
USE: MULTI-FAMILY RESIDENTIAL

CONNECT PROPOSED PATHWAYS SYSTEM TO EXISTING COCKLESHELL DRIVE PATHWAY SYSTEM

ZONED: RM-2
USE: SINGLE FAMILY RESIDENTIAL

ZONED: VILLAGES OF BONITA RPD
USE: RESIDENTIAL

VEHICULAR CONNECTION TO COCKLESHELL DRIVE MAY BE ELIMINATED TO ACCOMMODATE REGIONAL DRAINAGE IMPROVEMENTS

ZONED: AG-2 & RS-1
USE: SINGLE FAMILY RESIDENTIAL

ZONED: RM-2
USE: MULTI-FAMILY RESIDENTIAL

PROJECT BOUNDARY

NOTES:

1. THE PATHWAY ALIGNMENTS SHOWN IN THIS PLAN ARE GENERALIZED AND FINAL ALIGNMENTS WILL BE IDENTIFIED AT THE TIME OF DEVELOPMENT ORDER PERMITTING.

2. FINAL PATH LOCATIONS AND ALIGNMENT MAY BE MODIFIED BASED ON FINAL DESIGN OF REGIONAL STORMWATER FACILITIES

LEGEND

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BONITA SPRINGS GOLF COURSE RPD

EXHIBIT IV.E
MASTER CONCEPT PLAN
(PATHWAYS)

SCALE: 1" = 500'
JOB CODE: BCBSCC-20
DATE: OCTOBER 2021
FILE NAME: BCBSCC-20 EXH IV-E (V1)
SHEET 4 OF 4

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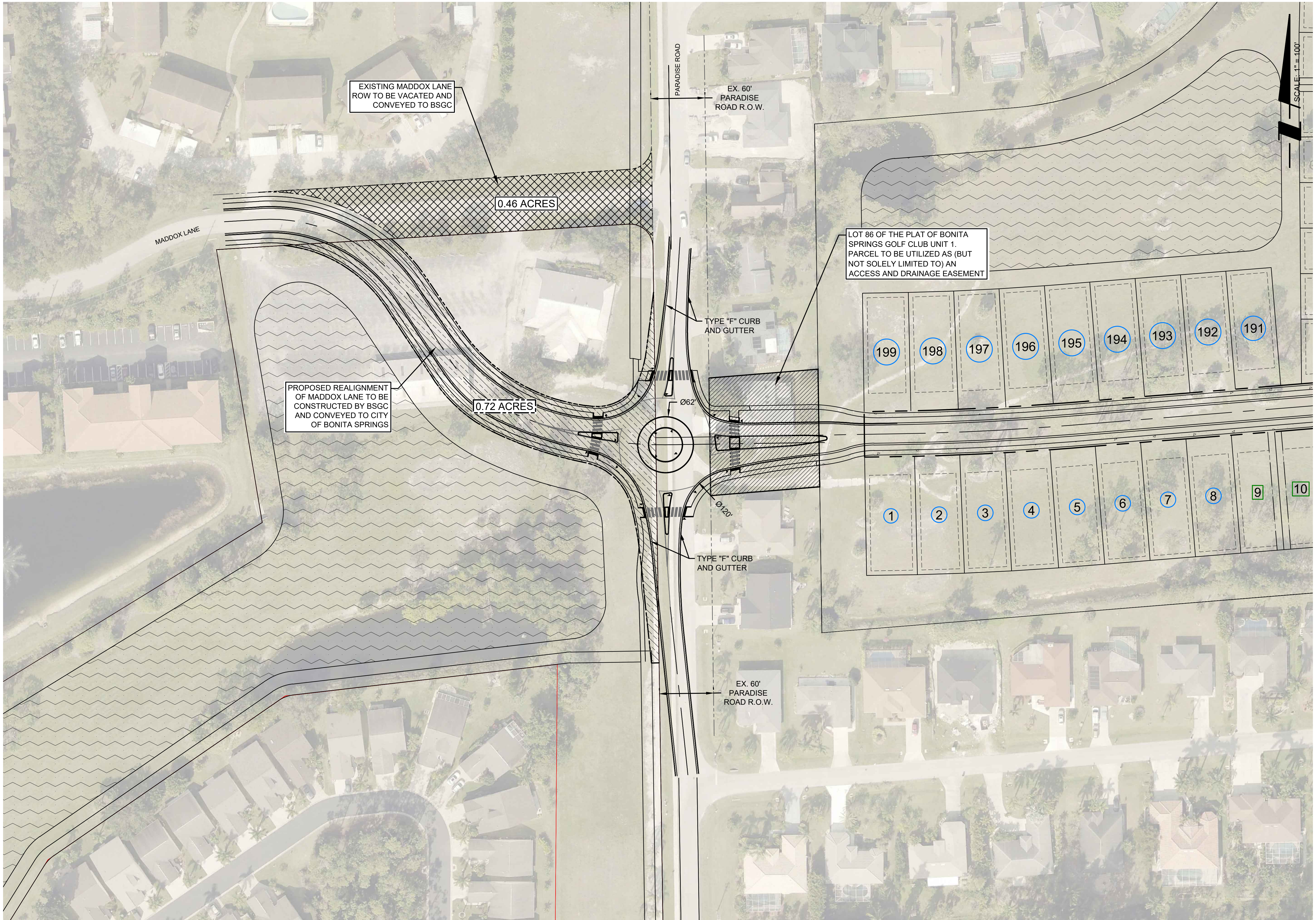

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PENINSULA ENGINEERING

CIVIL ENGINEERING · LANDSCAPE ARCHITECTURE · ENVIRONMENTAL CONSULTING · LAND PLANNING · SITE PLANNING · CONSTRUCTION MANAGEMENT · OWNER REPRESENTATIVE

2600 Golden Gate Parkway
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Email: info@pen-eng.com Website: www.pen-eng.com
Florida Engineering Certificate of Authorization #28275
Florida Landscape Certificate of Authorization #LC26000632

PROJECT:

BONITA SPRINGS GOLF COURSE

TITLE:

ROUNDABOUT

OWNER/CLIENT/CONSULTANT:

BSGC LAND HOLDINGS, LLC

REVISIONS:

No:	Revision:	Date:

NOTES:

SEC:23	TWP:47S RGE: 25E
City: BONITA SPRINGS	County: LEE
Designed by:	ALEJANDRO AVILA
Drawn by:	ALEJANDRO AVILA
Date:	OCTOBER 2021
Horizontal Scale:	1" = 100'
Vertical Scale:	N.T.S.
Project Number:	P-BSGC-001-001
File Number:	P-BSGC-001-001-X36

C-X36

Sheet Number: 01 of 01

Bonita Springs Golf Course RPD Rezone

Exhibit IV-H – Deviations and Justifications

Narrative explaining a significant portion of the deviations: The project has been identified by the City as the only location that can provide area wide drainage improvements to properties adjacent to and outside of the development footprint. These improvements significantly exceed the code required drainage system the applicant is required to do. In order to provide the extensive public drainage system, the applicant has agreed to; consider reducing the development footprint significantly; and to work with the City staff and drainage consultant to create a unified water management system to reduce flooding and protect property outside of the development footprint.

In order to accept offsite flows through a series of drainage swales/ditches, pipes, and lakes, the applicant has offered to include deviations and modified design standards to facilitate the public drainage system. Where feasible, alternative solutions will be provided through the design and permitting process. In no circumstances will deviations be included that jeopardize public safety. Where the literal application of the code would require a full take of the property in order to meet the City's requested drainage enhancements, the applicant, in coordination with city staff, has identified opportunities to meet the intent of the code to greatest extent possible.

1. Deviation 1 seeks relief from Sec. 4-2312(d)(5) – Golf Course Redevelopment Regulations – Development Approval and Standards which prohibits gates or walls along the project boundary to allow gates at the project entrances and walls along the project boundary.

Justification:

<u>Installation of Vehicular Gates:</u>

The project site consists of two parcels (the north and south golf course parcels). The north golf course parcel has two locations with frontage on public rights-of-way (at Carnoustie Court and Paradise Road via Lot 86). Based on discussions with adjacent property owners and City staff, the access to the north golf course parcel is proposed to be limited to a single location from Paradise Road through Lot 86. The proposed plan has been limited to one vehicular access point to the north parcel to avoid the adverse impacts to adjacent property owners that may occur if a secondary access is built from Carnoustie Court. Additionally, the elimination of the second access from Carnoustie Court will allow for the former golf course area between Carnoustie Court and Paradise Road to be used for water management purposes which will provide the significant enhancements noted in Sec. 4-2312(d)(13). If the north parcel is limited to a single access point as described above, the inclusion of vehicular gates will not undermine the intent of interconnectivity in the golf course conversion standards because interconnection to adjacent properties is not available due to a lack of other points of connection. The pedestrian facilities within the development will remain open to the public.

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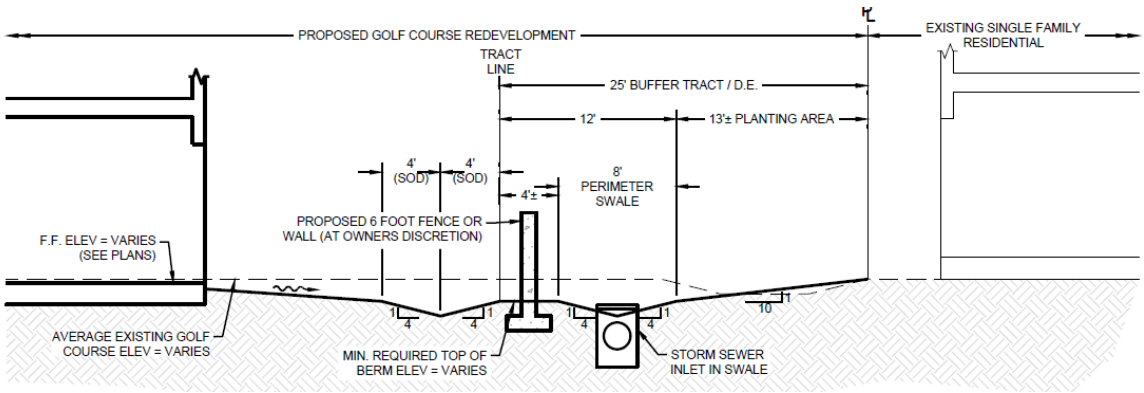
Perimeter Fences and Walls:

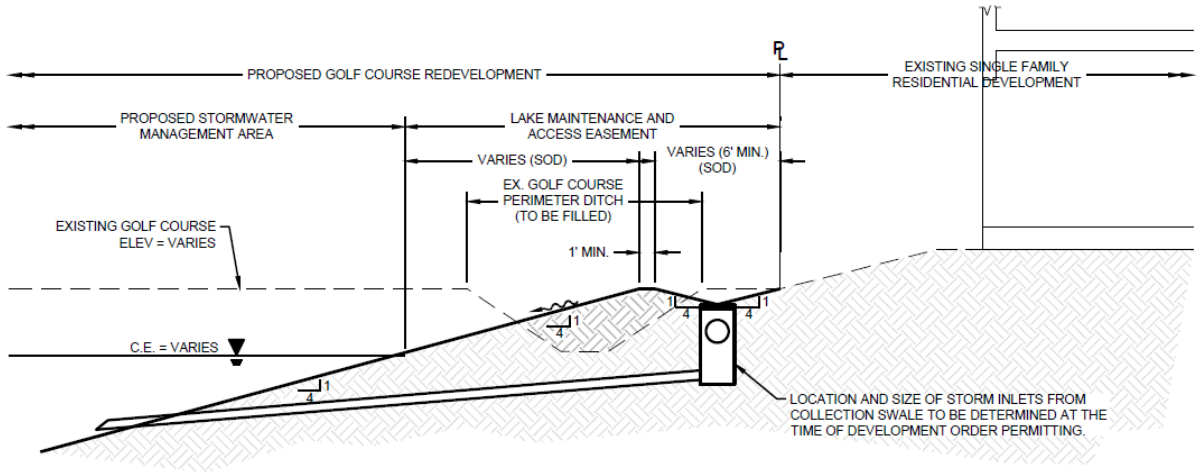
The regulations included in Sec 4-2312 are based on the presumption that the existing drainage facilities are adequate and that existing vegetation at the perimeter of the golf course will be generally sufficient to buffer adjacent uses. As identified in the neighborhood meetings and through the City's own independent studies, the existing drainage infrastructure is not sufficing and significant construction will be required at the perimeter of the property to provide the significant enhancements required per Sec. 4-2312(d)(13). Because native vegetation will be impacted to perform the drainage improvements required, the applicant would like the option to install fences or walls to provide buffering if required adjacent to existing residential uses.



2. Deviation 2 seeks relief from Sec. 3-331(d)(5) – Excavations for Water Retention and Detention which states that, at the discretion of the City Manager or designee, a four foot tall fence may be required around excavations located less than 100 feet from any property under separate ownership to not require fences around water management lakes.

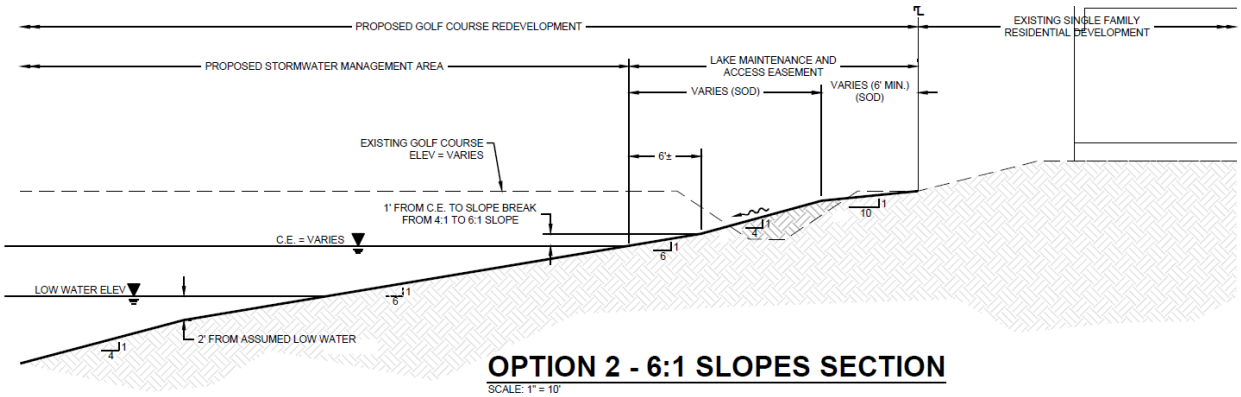
Justification:

The development proposes a series of regional stormwater improvements that will provide lake views for adjacent residential uses. Lake views will be an aesthetic benefit for adjacent residential lots that would be diminished with the required fencing. The proposed lake banks will be constructed in general accordance with one of the two lake cross sections options shown below to minimize erosion. The options consist of either collector swales at the top of bank or 6:1 slopes from one foot above the control elevation to six feet below control elevation.



OPTION 1 - SWALE AT TOP OF BANK SECTION

SCALE: 1" = 10'



OPTION 2 - 6:1 SLOPES SECTION

SCALE: 1" = 10'

3. Deviation 3 seeks relief from Sec. 3-263(b)(2) – Bikeways Facilities and Pedestrian Facilities which requires that the developer construct bike and pedestrian facilities in the public road rights-of-way if proposed in the City's Bicycle and Pedestrian Master Plan to provide an alternative pathways plan.

Justification:

The City's Bicycle and Pedestrian Master Plan show a proposed multi-use pathway within the Paradise Road Right-of-Way (with the existing sidewalk to remain). Due to limited ROW availability on Paradise Road and a lack of downstream connections, the developer has proposed an alternative pathways plan within the development in lieu of constructing the multiuse pathway proposed in the City's Bicycle and Pedestrian Master Plan. The internal paved pathway is located adjacent to the open space lakes and will be available for the use by the general public with connections made to the existing sidewalk along Paradise Road. The City staff and their drainage consultant have requested that we prioritize public, health, safety, and welfare related to flood control as the highest priority. Sidewalks will be provided on all local streets constructed by the developer. Where feasible after the drainage plan has been approved by the South

Florida Water Management District, the applicant and the city staff will identify opportunities for additional pathways.

4. Deviation 4 seeks relief from Sec. 3-297(3) – Access to Street Required which requires that any residential development of more than five acres provide two or more means of ingress and egress to the project to allow a single access to the northern residential tract and a single access to the southern tract.

Justification:
The proposed deviation is being requested for the north golf course parcel and potentially for the south golf course parcel (depending on the proposed configuration of the regional stormwater management facilities). A description of the justification for the deviation to allow a single access point for each parcel is provided below. It is important to note that the City is prioritizing flood control for an area wide public drainage system above all other criteria.

North Parcel:
The north parcel of the project site has frontage on public rights of way from Carnoustie Court and Paradise Road (via Lot 86). The applicant is pursuing remedies to allow for a single access point across Lot 86 to the north golf course parcel. One of the justifications for deviations described in Section 4-2312(d)(13) is for the applicant to demonstrate a "bona fide need for the deviation and agree to provide significant enhancements to the subject property in exchange for the deviation." Additionally, deviations are required (either singularly or in combination) to "not undermine the integrity of adjacent residential zoning districts." This deviation is requested to allow for use a single access point from Paradise Road (across Lot 86) to access the north golf course parcel. If the deviation were not granted, the portion of the golf course between Carnoustie Court and Paradise Road would be required to be used as a secondary access road to the proposed project. The use of the portion of the golf course that is contiguous to Carnoustie Court as an access road would prohibit its use for regional stormwater facilities and eliminate the significant enhancements associated with the regional drainage improvements.

South Parcel:
The south parcel of the project site has frontage on public rights of way from Paradise Road and at a single frontage on Cockleshell Drive. The applicant is currently working with the City of Bonita Springs and their consultant to identify potential portions of the site that can be utilized for regional stormwater storage. The portion of the project site adjacent to Cockleshell Drive is also adjacent to the point of discharge to the headwaters of Spring Creek and areas that are among the most susceptible to flooding in significant storm events. The deviation is necessary to provide flexibility in the

landplan to maximize the regional stormwater benefits; the proposed use of the portion of the site adjacent to Cockleshell Drive to provide stormwater benefits would be consistent with the requirements in Section 4-2312(d)(13) to satisfy a "bona fide need" (flooding of surrounding areas) and to allow for "significant enhancements" to the subject property.

5. Deviation 5 seeks relief from Sec. 3-303(b) – Complete Street Design which establishes the minimum dimensional standards and required facilities for public and privately maintained streets to provide an alternative street design.

Justification:
The master concept plan includes the proposed roadway cross section for the development that meets the intent of the City's LDC. The street cross sections shown on the MCP support multi-modal transportation and will maintain public health, safety and welfare. Given the existing site constraints, the proposed street design provides 5-foot sidewalks and a shared bike lane which is appropriate for a local roadway with low travel speeds.

6. Deviation 6 seeks relief from Sec. 3-303(e)(14)(1) – Complete Street Design which establishes the requirements for street trees to not require street trees on private streets internal to the development.

Justification:
The development proposes an alternative cross section as shown on the MCP that does not include street trees within the ROW but on residential lots within the first ten feet outside of the sidewalk. At the time of final Development Order Permitting and the Subdivision Plat, the developer can incorporate necessary provisions to ensure that the trees are properly maintained in the future.

7. Deviation 7 seeks relief from Sec. 4-2312(d)(7) – Golf Course Redevelopment Regulations – Development Approval and Standards which requires a 50 foot wide buffer with screening at a minimum height of six feet to allow reduced buffers in locations identified on the MCP and to not require six feet screening for buffers adjacent to the lakes.

Justification:
Section 4-2312(d)(7) specifically requires that the 50-foot buffers be vegetative in nature and have a minimum screening height of six feet. In locations where proposed lakes are used as buffers, the buffers will not be vegetative in nature; it is not proposed to obstruct the view of the lakes from existing residences. In cases where existing residences are separated from the proposed project by an off-site preserve, it is not proposed to include a vegetative screen between the preserve and the proposed project. In instances in which proposed single family residential areas will be located within 25 feet of existing residences, the applicant is proposing a to install landscaping

and a six-foot wall or fence (at the developer's discretion) within the buffer to provide screening between the uses. The site has been constrained due to the City's request to prioritize regional drainage improvements that exceed those required by code. Due to the City's request to expand the lakes throughout the project, the remaining developable areas require additional consideration. The regional drainage improvements that would be provided to surrounding properties by the allocation of more than the typical required space for water management facilities within the golf course is consistent with the requirement for significant enhancements identified in Section 4-2312(d)(13).

8. Deviation 8 seeks relief from Sec. 4-2312(d)(9) – Golf Course Redevelopment Regulations – Development Approval and Standards which requires the inclusion of a tree lined trail (12 foot minimum width) in instances when the buffer is reduced to less than 50 feet to provide for an alternative pathway ranging from 6 feet to 12 feet in width, or no path but added buffers when the City's staff and drainage consultant deems additional storage is needed for the area wide public drainage system.

Justification:
The project master plan includes locations of a proposed multi-use trail system. A pathway is proposed within the southern development tract and is identified on the MCP. A pathway on the north tract is not possible due to the extent of water management improvements. The City staff and their drainage consultant have requested that we prioritize public, health, safety, and welfare related to flood control as the highest priority. The improvements associated with the relief of flooding are consistent with the requirement for significant enhancements included in 4-2312(d)(13). Sidewalks will be provided on all local streets constructed by the developer. In certain instances, in which the perimeter buffer has been reduced to less than 50 feet to accommodate the public area wide drainage system, it is proposed to dedicate area to landscaping and stormwater conveyance facilities rather than including a trail.

9. Deviation 9 seeks relief from Sec. 4-2312(d)(12) – Minimum road width which provides minimum width of any portion of golf course property considered for redevelopment on which a roadway will traverse to meet specific width standards to allow an access road to the northern tract through property that is 129.11 feet wide.

Justification:
The existing property has limited frontage on existing roadways and the deviation is necessary to access the northern tract. The north parcel of the project site has frontage on public rights of way from Carnoustie Court and Paradise Road (via Lot 86). One of the justifications for deviations described in Section 4-2312(d)(13) is for the applicant to demonstrate a "bona fide need for the deviation and agree to provide significant enhancements to the subject property in exchange for the deviation." Additionally, deviations are required (either singularly or in combination) to "not undermine the

integrity of adjacent residential zoning districts." If the use of the access location requested in this deviation were not granted, the portion of the golf course between Carnoustie Court and Paradise Road would be required to be used as the access to the north parcel. The use of the portion of the golf course that is contiguous to Carnoustie Court as an access road would prohibit its use for regional stormwater facilities and eliminate the significant enhancements associated with the regional drainage improvements.

As illustrated on the MCP, the development proposes access to the northern tract between Wood Ibis Avenue and Carnoustie Court. The access point into the northern tract is through Lot 86, which is 129.11' wide. The access road will be located and screened to maximize separation and screening to the adjacent residential uses. Additionally, the developer is proposing to construct a traffic circle at this intersection to provide traffic calming to Paradise Road.

10. Deviation 10 seeks relief from Sec. 3-417(b)(1)b.4. – Indigenous Native Vegetation which requires efforts be made to preserve heritage trees and specifies sizing criteria for replacement landscaping for impacted heritage trees to not require replacement trees for heritage trees removed to provide regional drainage improvements.

Justification:
Considerable portions of the project site will be devoted to providing stormwater storage and conveyance for surrounding developments, which provides a significant public benefit to the area. A large portion of the land within the project has been identified by the City and their consultant for an area wide public drainage system. The City is unable to buy the entire project but has asked the developer to prioritize a public drainage system over other items desired in the code. These stormwater lakes have been designed to preserve heritage trees where reasonable; however, some heritage trees will need to be removed in order to provide the regional stormwater improvements. This deviation requests to not require replacement for heritage trees which must be impacted to construct the proposed regional drainage improvements.

11. Deviation 11 seeks relief from Sec. 3-417 (d)(2)c. – use of open space which limits existing or proposed bodies of water, including stormwater management areas to offset up to a maximum of 25 percent of the required open space to allow stormwater management areas to offset up to a maximum of 40 percent of the required open space.

Justification:
The proposed project includes a series of lakes within the former golf course to provide regional drainage enhancements for the surrounding area. These stormwater improvements include the construction of a series of stormwater lakes to provide additional storage, conveyance, and treatment for the surrounding residential areas. These lake areas associated with these stormwater improvements exceed what is required for the golf course redevelopment area but provide a much need public

improvement to the community. This deviation would not be needed if the additional lakes for regional stormwater improvements were not proposed as part of this development.

12. Deviation 12 seeks relief from Section 6-39. (c)(3) - nonconforming signs which A nonconforming sign shall become an illegal sign which shall not be replaced or repaired, in part or in full, except upon full compliance with this chapter when more than 25 percent of the copy area is removed or unassembled for a period of more than six months to permit greater than 25% of the sign copy to be modified during any single 12-month period for the existing off-site located at the intersection of Cockleshell Ct. and Old 41 Road to remain within the Cockleshell Ct. ROW.

13. Deviation 13 seeks relief from Section 6-146. (a)(1) - off-site directional signage which requires off-site, non-illuminating directional signs for subdivisions or residential projects shall be permitted along arterial and collector streets within 500 feet of the nearest intersection involving a turning movement to locate the development, to permit the existing off-site approximately 250 square foot sign located at the intersection of Cockleshell Ct. and Old 41 Road to remain within the Cockleshell Ct. ROW, and to permit greater than 25% of the sign copy to be modified during any single 12-month period.

Justification for Deviation 12 and 13:
The existing off-site directional sign identifies Bonita Springs Golf and Country Club, and the residential communities of Fairwinds, Chadwyck Square and Paradise Woods and is approximately 250 square feet in size and 8 feet in height. The sign was installed many years ago to provide directional aide to motorists on Old 41 Road. The Bonita Springs Golf and Country Club is defunct and the new owners of the property desire to utilize the sign to direct motorists to the residential communities that will replace the golf course. Due to the age of the structure, it is not in compliance with the current regulations for off-site directional signage regarding height and size. The deviation will allow the existing sign to remain and to be refurbished, with new sign copy for the new communities. The renovated sign will be subject to review and approval of sign permit(s) and work within City ROW permit.

14. Deviation 14 seeks relief from Section 4-2312 (d) (4), which prohibits alterations to elevation of property within 30 feet of the golf course property boundary to instead allow alterations of property elevation where required to implement improvements for the stormwater management system as permitted by SFWMD.

Justification:
In order to improve both area and regional stormwater management, alteration of the ground level near the property interface with surrounding improved properties will be required. Alteration will allow for creation of berms, swales and other surface water management improvements that will accept stormwater into the RPD master water

management system. The improvement to conveyance of stormwater from off-site properties will be consistent with the requirement of providing significant enhancements noted in Section 4-2312(d)(13).

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Mayor

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Council Member
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Laura Carr
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District Three

Chris Corrie
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Parks & Recreation
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Community Development
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Octboer 27, 2021

Mr. D. Wayne Arnold
Grady Minor & Associates, P.A.
3800 Via Del Rey
Bonita Springs, FL 34134

Re: Bonita Springs Golf Course Planned Development – PD21-78545-BOS

Dear Mr. Arnold:

The Zoning Division has reviewed the information provided and supplemented for the planned development request referenced above. The application has been found sufficient and the following language is being drafted for the request.

A request to rezone approximately 133 acres +/- from RS-1 and RM-2 to a Residential Planned Development (RPD) for a maximum of 350 dwelling units, pursuant to Division 43 of Chapter Four of the City of Bonita Springs Land Development Code.

Please review the language carefully and notify me in writing no later than November 3, 2021, if the above request language is sufficient or if changes are requested.

Please be advised that a letter with Staff's substantive comments will be forthcoming. Substantive comments are related to items that could affect the Staff recommendation.

The City of Bonita Springs has adopted standards for neighborhood meetings pursuant to LDC Sec. 4-28. The applicant shall advertise and conduct a post-sufficiency neighborhood meeting within thirty (30) days of the date of sufficiency. A notice of the meeting shall be provided to the City.

The City of Bonita Springs may process invoices for cost recovery services pursuant to LDC Sec. 2-571. Staff will notify the applicant under separate cover when an additional cost recovery deposit is due. Payment shall be provided to avoid delays in the processing of the case and any associated cases.

Please feel free to contact me if you have any questions.

Sincerely,

DEPARTMENT OF COMMUNITY DEVELOPMENT
Zoning Division

Mike Fiigon II

Mike Fiigon, II
Senior Planner

Copy:
Derek Rooney, City Attorney
Arleen Hunter, City Manager
Brent Spain, Theriaque & Spain
John Dulmer, Community Development Director
Jay Sweet, AICP, PSM, City Surveyor
Laura Gibson, Environmental Sciences
Sean Gibbons, Multi-Modal Reviewer
Stuart Smith, Development Engineer
Tom Ross, Transportation Engineer
Beckie Reide, P.E, Lee County Natural Resources
Cynthia Vargas, Administrative Assistant
PD Files

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November 4, 2021

Mr. D. Wayne Arnold
Grady Minor & Associates, P.A.
3800 Via Del Rey
Bonita Springs, FL 34134

Re: Bonita Springs Golf Course Planned Development – PD21-78545-BOS

Dear Mr. Arnold:

The Zoning Division has reviewed the information provided and supplemented for the planned development request referenced above. Please review Staff's substantive comments below. Please note that the substantive comments provided by Staff could affect the Staff recommendation.

Pursuant to LDC Sec. 4-28, a post-sufficiency neighborhood meeting shall be held within 30 days of the date of sufficiency. A notice of the meeting shall be provided to the City.

Costs for public hearing notices ($1,261.50) and sign posting ($28.45) are due at time of submittal of post-sufficiency neighborhood meeting items.

Please feel free to contact me if you have any questions.

Sincerely,

DEPARTMENT OF COMMUNITY DEVELOPMENT
Zoning Division

Mike Fiigon II

Mike Fiigon, II
Senior Planner

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BONITA SPRINGS Zoning

1. **Deviation 1:** Staff has concerns with the justification provided for this deviation request. The intent of the requirement is to aid in the compatibility effort of any golf course redevelopment, with the surrounding neighborhood. The adjacent neighborhoods are not gated and by the Applicant's own admission, pedestrian facilities will be open to the public. With this being the case, it is unclear what purpose the gate will serve and how it benefits the project overall.

   With regards to walls, it is the Staff opinion that walls or physical barriers may be appropriate in certain locations where stormwater infrastructure could be a hazard or safety concern to nearby residential property. Please clarify if it is the Applicant's intent to provide a wall around the entire perimeter of the project.

2. **Deviation 9**: The justification mentions that the adjacent residential homes will be buffered and screened from this proposed access point for the northern development tract. Please provide additional information for Staff to consider.

3. **Deviation 14**: The Applicant is put on notice that Staff would recommend approval of this deviation only if/when the stormwater management plan has been determined to be a significant benefit in reducing the existing flooding conditions for the golf course and the surrounding residential developments.

BONITA SPRINGS Engineering

1. Staff recommends one or more traffic calming devices be considered on Paradise and that consideration be given to improvements at the intersection with Shangri-La. Concerning the proposed roundabout, additional detail will be needed to evaluate the alignment and necessary radii needed to fit within the available right of way.

2. **Deviation 2:** At this time, Staff cannot recommend approval of this deviation, based on the justification provided. The current code indicates that "at the discretion of the City Manager or designee" a fence may be required. This is a safety issue to be evaluated at time of local development order submittal. Based on similar lake erosion issues in other communities, Staff would recommend the "Option 1" lake section with a storm water collection swale and inlet at the top of bank.

Please contact: Stuart Smith, PE
Phone: 239.444.6164
Email: ssmith@cityofbonitaspringscd.org

BONITA SPRINGS Environmental

1. **Deviation 7/8:** It is the Staff recommendation to provide more information on what buffer width *would* be provided. Staff also recommends a provision of a pathway at a reduced width, instead of no pathway at all. If the Applicant maintains that pathway is not feasible in any usable iteration, please provide an additional justification for why this deviation benefits the project. It is recommended to provide a cross section for consideration.

2. **Deviation 10**: Staff cannot support this deviation to allow no replacement of heritage trees in the landscaping when planted trees will be required in the landscape plan to be reviewed with the local development order. Appropriate tree species can be utilized around the stormwater management lakes to replace heritage trees and provide benefits to the lakes community. The trees could also be counted towards littoral requirements. Removal and replacement of heritage trees can be sought without a deviation. LDC Sec. 3-417(b)(2) recommends a Tree Advisory Board hearing for heritage tree removal take place concurrent with the zoning request.

Please contact: Laura Gibson, CEP-IT, Certified Arborist
Phone: 239.444.6142
Email: lgibson@cityofbonitaspringscd.org

BONITA SPRINGS Bike-Ped

Staff has reviewed the Multimodal/Complete Streets Deviation Requests proposed by the Applicant. While the subject Deviation Requests are Sufficient for review by Staff, additional Substantive information/detail and Applicant Revisions will be necessary to facilitate Staff support of the subject Deviations as requested. Similarly, the finding of the requested Deviations as "Sufficient" should not be considered approval by staff.

Deviation Request 3/8: Please revise the Master Concept Plan (MCP) and/or Project Narrative to provide for the required Multimodal/Complete Streets infrastructure required by code. This can be achieved through the physical construction of the required facilities, payment-in-lieu of construction (as permitted by the Bonita Springs LDC) and/or a combination of construction and payment-in-lieu (as appropriate). As such, staff cannot support the current deviation request as proposed. The applicant is also placed on notice the "Tree Lined Trail/Pathway" interior to the project is not an acceptable justification to delete the required separation between the project and existing neighborhood. This also does not act as a de facto "in lieu" alternative to the provision of compulsory multimodal infrastructure on Paradise Road. The same can be said of the Applicant providing the minimum (or lack thereof based upon Applicant Deviation Request #5) multimodal infrastructure interior to the site (sidewalks, crossings, and sharrows); these too are standalone requirements in-and-of themselves and do not eliminate or act as an "in lieu" alternative to meeting the requirement for the provision of the compulsory multimodal infrastructure along Paradise Road. If the Applicant is unable to construct some or all of the required multimodal facilities along the applicable portions of Paradise Road, a Fee-In-Lieu (payment) option could be considered, subject to the appliable code requirements/allowances and approval by City Administration/Legal and Public Works Department.

Deviation Request 5: Please revise the Master Concept Plan (MCP) to provide the "proposed roadway cross sections" reference by the Applicant. As requested, Staff would not be able to support or recommend approval of Deviation # 5, as requested. As required by LDC 3-303(b)(iii) a minimum 6' sidewalk on both sides of the right-of-way and a marked on-street shared bike lanes ("sharrows"), would be required and appropriate. Please note that the provision of above required multimodal facilities as detailed above would eliminate the need for the requested deviation (Deviation #5). Please note that the location of the required 6' sidewalks can be within/on either (or both) the proposed Right-of-Way (ROW) and/or residential properties; as well as within the

proposed 10' Public Utility Easement (PUE) (i.e., ample space exists to provide the 6' sidewalks required by code). Similarly, Sec. 3-303 only requires a 5' planting strip (separation) between the travel lanes and required pedestrian facilities (6' sidewalks). The Applicant is proposing 6' sod areas which could be reduced 1' to provide for the required 6' sidewalks while fully comporting with code requirements for both items (i.e., "sidewalk widths" and "planting areas").

Deviation Request 6: Please revise the Master Concept Plan (MCP) to include the "proposed alternative cross section". As requested, Staff would not be able to support or recommend approval of Deviation # 6 as requested. The provision of shade providing street trees is paramount to the successful utilization of multimodal infrastructure within any community; especially if the infrastructure is to be safely and full utilized year-round. While the Staff is willing to work with the applicant to utilize alternative plating location(s) for the projects required street shade canopy trees, the area in the applicant has suggested installing the required trees within the 10' PUE is not a safe or appropriate location for installation under the City's LDC or Bonita Springs Utilities. The later of which requires a minimum 10' separation between plantings and utilities lines. Additionally, the installation of shade canopy trees outside of the right of way on either residential or comment element parcels will require the association to provide a management plan for their survival and protection. This would also prevent future home owners from removing them without a development order amendment or tree removal permit.

Condition of Approval: Less the deviations and/or exceptions provided by this RPD approval, at the time of local Development Order, all required multimodal facilities (infrastructure, crossings, amenities, furnishings, access points, easements, etc.) both internal and external to the site, shall meet or exceed the intent of the design standards provided by Chapter 3 of the City of Bonita Springs Land Development Code, the City of Bonita Springs Bicycle Pedestrian Master Plan (PATH), and all applicable design standards except as modified herein and as required by the Bonita Springs Fire Control and Rescue District and National Fire Protection Area (NFPA).

Please contact: Sean Gibbons, Bike-Ped Coordinator
Phone: 239.444.6176
Email: sgibbons@cityofbonitaspringscd.org

BONITA SPRINGS Traffic Comments

1. Please revise the capacity analyses for the intersection of Shangri-la at Paradise. The EB approach should be coded as a shared left-through lane. The WB approach should be coded as a shared through-right lane.

2. The traffic counts and the analysis were not included in the revised TIS.

3. Additional geometric details and an operational analysis of the roundabout concept are needed to complete Staff's evaluation. This concept must be approved by Public Works.

4. Regardless of the classification, the proposed development will add a significant number of EB left turns at the intersection of Paradise Road. An exclusive eastbound left-turn lane should be added at this intersection to address the additional trips and mitigate the increased delay in the westbound condition.

Please contact: Tom Ross, Traffic Group Leader
Phone: 407.718.5443
E-mail: tom.ross2@jacobs.com