

Agenda Item: Pinebrook/Venice/Ridgewood Intersection CIP Request FY2020

Description/Justification: Road Impact Fees are collected by the City and remitted to Sarasota County per County Ordinance. These fees may be drawn down by the City for approved projects. The FY2018 available balance is \$4,768,575 for Road Impact Fees and \$1,485,691 for Mobility Fees. The Pinebrook/Venice/Ridgewood intersections are currently under design in preparation for construction by Sarasota County with input from the City.

Motion: Abort the intersection project and ask the County to redirect the funds to expanding Laurel Road.

Attachments:

Detailed explanation

CIP Project Request FY2020, page 81

Contract 2014-399 approved 6/10/2014

Sarasota County Government FY2020 thru 2014 Preliminary Capital Improvement Program Project #95727

Jerry Jasper Email

Sarasota County Technical Memorandum dated July 10, 2019

COV Annual Update of the CIS Petition # 18-03AM Staff Report

2019 Mobility study conducted by Jeff Shrum – Refined Future (2030)

Detailed Explanation

I asked to have this as an agenda item after several question and answer sessions with our City Manager. I think it's important that the whole Council is aware of the facts as they were presented to me.

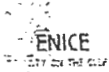
I initially questioned as to why we had appropriated \$6.3 million in our CIP workshop to this project. The attached Interlocal Agreement between us and Sarasota County (Contract 2014-399 dated June 10, 2014) commits us to appropriate \$1.8 million as our share of the project. The contract also contains language that if either party cannot fund any phase, the other party can suspend their obligations until both parties can commit their share of the funding. In answer to my questions, Mr. Lavallee said that "our current year CIP includes the \$1.8 million. Also included: \$500,000 left over from the Edmondson x Pinebrook intersection project, and approximately \$4 million additional local road impact fees".

Sarasota County has done a detailed analysis of this intersection and has determined that it will take \$2.3 million to correct its problems and has submitted a grant application to CIGP for funding.

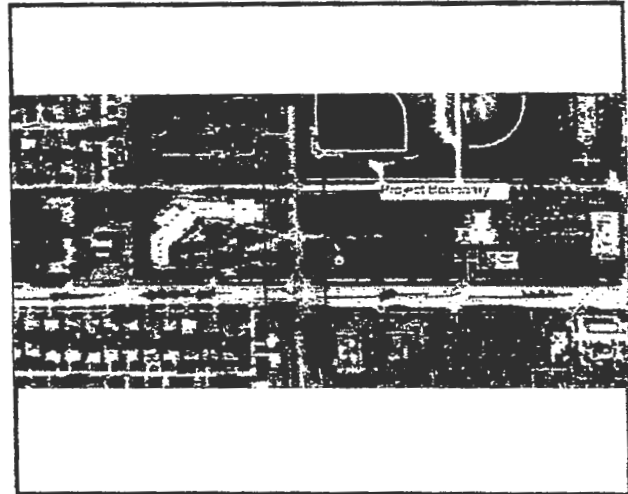
Question: Why do we have a CIP plan for \$6,254,266 using COV road impact fees and mobility fees for this same project?

Our most recent information finds that Pinebrook Road will remain a LOS of "D" for the foreseeable future even with the expanded growth in the North East. However, the recent mobility study conducted by Jeff Shrum regarding the need for a connector road between Laurel and Border found that Laurel Road will deteriorate to a LOS of "F" much sooner than previously thought. Our Comp Plan dictates a minimum LOS of "D".

Mr. Neal made a presentation at our August Council meeting indicating that as much as \$2 million might be available from the State for the expansion of Laurel Road. This is a time-sensitive arrangement that might not present itself in the future.



City of Venice, Florida
Capital Improvement Project Request
FY 2020



Department/Division: Engineering
 Contact Person: Kathleen Weeden
 Project Title: Road Impact Fee Projects
 Project Number: TBD

Estimated Start Date: 21-Oct
 Estimated Completion Date: 23-Aug

Relationship to Community Vision and City Council Strategic Goals

Investment Objective: Upgrade Service Strategic Plan Goal: Upgrade City Infrastructure & Facilities

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Financial Information

Funding Sources

Funding Type	Fund	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Road Impact	302	4,768,575				
Mobility Fees	302	1,485,691				
Totals		\$ 6,254,266	\$ -	\$ -	\$ -	\$ -

Project Expenditures/Expenses

Activity	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Construction	6,254,266				
Engineering Inspection					
Totals	\$ 6,254,266	\$ -	\$ -	\$ -	\$ -

Impacts on Operations

Operating Impacts (negative entries indicate an operating reduction)

Activity	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Personnel					
Operations	County	County	County	County	County
Debt Service					
Totals	\$ -	\$ -	\$ -	\$ -	\$ -

CONTRACT NO. 2014-399

BCC APPROVED 6/10/2014

**INTERLOCAL AGREEMENT BETWEEN CITY OF VENICE AND
SARASOTA COUNTY REGARDING THE TRANSFER
OF COUNTY MAINTAINED LOCAL ROADS ON THE ISLE OF VENICE TO THE
CITY OF VENICE AND THE TRANSFER OF A SEGMENT OF LAUREL ROAD AND
A SEGMENT OF PINEBROOK ROAD, INCLUDING A BRIDGE, TO
SARASOTA COUNTY**

THIS INTERLOCAL AGREEMENT, by and between the City of Venice, Florida, a municipal corporation, hereinafter referred to as the "City" and Sarasota County, a political subdivision of the State of Florida, hereinafter referred to as the "County."

WITNESSETH

WHEREAS, the County has been maintaining certain local roads within the City of Venice; and

WHEREAS, the City agrees to accept the transfer of those certain local roads and to take jurisdiction, control, full ownership and all maintenance responsibilities in perpetuity upon performance of certain conditions by the County; and

WHEREAS, the County agrees to accept the transfer of certain arterial roads and a bridge, and to take jurisdiction, control, full ownership and all maintenance responsibilities in perpetuity upon performance of certain conditions by the City; and

WHEREAS, the City and the County hereby establish a process for the transfer of roadways and all publicly-maintained appurtenances thereto, including, but not limited to, curbs, culverts, drainage structures, sidewalks, bike paths;

NOW, THEREFORE, in consideration of the mutual covenants expressed herein, the CITY and COUNTY agree as follows:

1. The above recitals are true and correct and incorporated herein by reference.
2. The City and County agree to the phased schedule for the transfer of the roads and publicly-maintained appurtenances, including, but not limited to curbs, culverts, drainage structures, sidewalks, bike paths, as set forth in this Agreement and the Exhibits 1 through 4, which are attached hereto and incorporated herein by reference, subject to the following terms:
 - a. Upon approval of this Agreement by both parties, the City will assume jurisdiction, control, full ownership and all maintenance responsibilities in perpetuity of the right-of-way containing the local roads and publicly-maintained appurtenances listed in Exhibit 2.
 - b. The City agrees to assume jurisdiction, control, full ownership and all maintenance responsibilities in perpetuity of the right-of-way containing the local roads and

publicly-maintained appurtenances listed in Exhibit 3 following the resurfacing of said roads in accordance with the schedule provided in Exhibit 3. Such resurfacing shall meet the following conditions:

- i. The County will provide resurfacing using the County's local road standard practices. The typical local road resurfacing practice includes milling from one and one quarter inch to one and one half inch and applying pavement to match the milled depth.
 - ii. The County will make minor repairs to any areas showing signs of base failure using crushed concrete. The application will be based upon the County Engineer's analysis and determination.
 - iii. Upon completion of the resurfacing and any base repair deemed necessary, the County will turn over for ownership and maintenance in perpetuity all of the right-of-way containing the listed roadways and any other County maintained appurtenances within the roads listed in Exhibit 3.
- c. The City agrees to thoroughly analyze and take reasonable corrective actions necessary to solve the scour critical issues at the bridge crossing Curry Creek on Pinebrook Avenue.
- d. Following implementation of a successful solution to scour critical issues, the City will resurface, in accordance with County standards for collector roads, those sections of Pinebrook Road listed in Exhibit 4, which is attached hereto and incorporated herein by reference. County standards for collector road resurfacing includes two and one half inch of milling, one and one half inch of pavement followed by one inch of a friction coarse application.
- e. The County agrees to assume jurisdiction, control, full ownership and all maintenance responsibilities in perpetuity for the right-of-way containing the segments of Pinebrook Road and publicly-maintained appurtenances as listed in Exhibit 4 upon completion of the resurfacing and the bridge repair.
- f. The City agrees to convey, by Deed, the portion of Laurel Road as shown on Exhibit 4, attached hereto and incorporated herein by reference, including the portion containing Parcel 113 Section 25 and 26, Township 38 South, Range 19 East, Sarasota County, Florida, except for a portion of Parcel 113 that presently contains landscaping that differs greatly from the County's standard landscaping practices. This specific area conveyed and the area excepted is to be defined in a sketch and legal description before transfer and the excepted area shall remain City property. Accordingly, the City will remain responsible for maintaining this City owned area and it being expressly understood that the County will not maintain this excepted area.

- g. The County agrees that the stormwater pipes identified by the City lying under Poinsettia Drive and Park Boulevard will be replaced during or prior to the resurfacing activities upon Park Boulevard.
 - h. The City agrees to the programming and use of \$1,800,000 for the Pinebrook Road/E. Venice Avenue Intersection Improvements (herein "Intersection Improvements") from available road impact fees collected within the City of Venice Road Facility Service District following the programming and appropriation of \$1,400,000 in funding for Airport Access Road where the project scope is described in the County's proposed Fiscal Year 2015 Capital Improvement Program as project #95728. If the City adopts a mobility fee or other alternative impact fee in lieu of the collection of the County imposed road impact fee, then the City agrees to provide available City imposed mobility fee or alternative impact fee revenue to the County to make up the difference between the then available road impact fees collected within the City of Venice Road Facility Service District programmed for the Intersection Improvements and the \$1,800,000 commitment. Nothing herein shall be construed as a commitment by the City to make any funds available to the County before they are available to the City as provided for under this provision.
 - i. The parties agree that before commencing work on any of the specific projects described herein, a detailed scope of work shall be prepared by the party performing the work and submitted to the other party for concurrence by its designated engineer.
- 3. Each of the phases described in Exhibit 1 beyond the 2014 phase shall be subject to the availability and lawful appropriation of funds by each governing body. If either party cannot fund any scheduled phase, then the other party may suspend their obligations under this Agreement until the other party completes the scheduled phase of roadwork listed in Exhibit 1.
 - 4. Neither party can refuse acceptance of the right-of-ways and appurtenances described in the exhibits attached hereto and made part of this Agreement for any reason other than those specifically stated herein.
 - 5. The Parties agree that any stormwater or water quality issues arising in connection with the road segments transferred under this Agreement, whether as a result of the maintenance performed according to this Agreement or past practices by either party, are the sole responsibility of the party to whom the road segment is transferred under this Agreement.
 - 6. The City and County agree that the transfer of all right-of-way and publicly-maintained appurtenances described in Exhibits 3 and 4 of this Agreement will only occur following the written approval of the subject work by the respective designated engineer of the receiving party. Approval of the subject work by a party's designated engineer may include, but not necessarily be limited to, certification of materials, specifications and testing, and inspection of the work performed by third parties.

7. Upon transfer of any right-of-way each governing body will timely provide documentation to the other, which is mutually acceptable to complete all legal requirements and assure permanent ownership of the property. Such documentation shall be subject to the review and written approval of the parties' respective legal staffs before it is deemed acceptable.
8. This Agreement is for the mutual benefit of the named parties only and nothing herein shall be construed as creating any right or cause of action to any party not specifically named herein nor shall any provision of this agreement be construed as constituting a waiver of sovereign immunity.
9. Nothing in this Agreement shall be construed as creating an agency relationship between the parties. The City and County retain their full and independent authority and associated responsibilities with respect to the roadways under their respective jurisdiction, control and ownership.
10. This Agreement may be amended only by a writing duly executed by authorized officers of the County and City.
11. In the event any provision of this Agreement shall, for any reason, be determined invalid, illegal or unenforceable in any respect, the parties hereto shall negotiate in good faith and agree to such amendments, modifications or supplements to this Agreement or such other appropriate actions as shall, to the maximum extent practicable in the light of such determination, implement and give effect to the intentions of the parties as reflected herein, and the other provisions of this Agreement, as amended, modified, supplemented or otherwise affected by such action, shall remain in full force and effect.

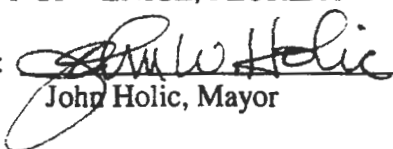
IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective undersigned duly authorized officers as of the dates set forth below.

DATED this 27th day of May, 2014 by the City of

Venice, Florida.

CITY OF VENICE, FLORIDA

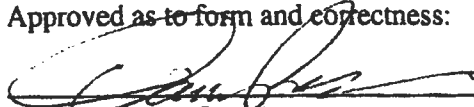
BY:


John Holic, Mayor

ATTEST:


Lori Stelzer
City Clerk

Approved as to form and correctness:


David Persson, City Attorney

DATED this 10th day of June, 2014 by Sarasota

County.

BOARD OF COUNTY COMMISSIONERS OF
SARASOTA COUNTY, FLORIDA

By: 

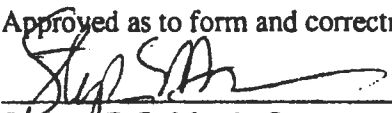
Charles D. Hines, Chair

ATTEST

Karen E Rushing, Clerk of
Circuit Court and Ex Officio
Clerk of the Board of County
Commissioners of Sarasota
County, Florida

By: 
Deborah Diakatos
Deputy Clerk

Approved as to form and correctness:


Stephen E. DeMarsh, County Attorney *KAS*

Public Works

Project Title: Pinebrook @ E. Venice/Ridgewood Design/Engineering Intersection Improvements
Category: Traffic Circulation
Location: District #3 District #5 - Pinebrook Rd. & East Venice Ave. to Ridgewood Ave.
Status: Existing Project - No Additional Funding Programmed

Project #: 95727
LMS: No

Comprehensive Plan Information				Project Location			
CIE Project: Yes	Plan Reference: Table 14-1			District: District #3 District #5			
LOS/Concurrency: Yes	Project Need: Growth, Deficiency			Location: Pinebrook Rd. & East Venice Ave. to Ridgewood Ave.			

Programmed Funding							
Programmed Funding	Appropriated To Date	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future Funding
2,300,000	2,300,000	0	0	0	0	0	0

Description and Scope

This project is for the design, permitting and ROW acquisition for the reconstruction of the Pinebrook Road and E. Venice Avenue intersection including improvements to the north at the intersection of Pinebrook/Ridgewood. The upgrade of the intersections will provide necessary capacity improvement and enhanced safety. These improvements will also assist in accommodating additional traffic volumes expected to be generated upon completion of the Honore Extension.

Phase 1 - Traffic Analysis and Concept Plan (Currently funded)
Phase 2 - Design/Engineering, permitting, and Land/Right-of-Way activities to begin in FY2019 and continue through FY2021 (currently funded, with the possibility of additional ROW funding necessary depending on design and business damages)
Phase 3 - Construction (Currently unfunded) Staff will be seeking additional funding opportunities for completion of the project in conjunction with the City of Venice.

Rationale

The proposed project is comprised of intersection capacity improvements required to achieve and maintain adopted roadway levels of service due to traffic impacts associated with residential and business growth in the City of Venice.

Funding Strategy

Phase 1 of this project will be funded through road impact fees collected in the City of Venice Road Facility Service District. Allocations of the road impact fees for this project were approved by the Venice City Council at the regular meeting on May 22, 2012.

Operating Budget Impacts

Operating and Maintenance expenses will be completed by Sarasota County since this intersection is currently within County ROW. Operating expense will increase due to added road markings and signage.

Impact Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Operating Expenditures	0	0	13,977	14,291	14,613
Total Operating Budget Impacts	0	0	13,977	14,291	14,613

Project Map

Schedule of Activities

Project Activities	From - To	Amount
Project Management	10/16 - 09/21	100,000
Design/Engineering	10/16 - 09/20	600,000
Land/Right-of-Way	10/20 - 09/21	1,600,000

Total Budgetary Cost Estimate: 2,300,000

Means of Financing

Funding Source	Amount
City of Venice Road Impact Fees	2,300,000

Total Programmed Funding: 2,300,000

Future Funding Requirements:

From: **Paula Wiggins** <pwiggins@sagegov.net>

Date: Fri, Aug 30, 2019 at 12:01 PM

Subject: RE: FW: Venice Ave at Piebrook Rd Intersection
Analysis

To: Jerry Jasper <jasperj11@gmail.com>

Cc: Thai Tran <ttran@sagegov.net>, Teresa Goluch
<tgoluch@sagegov.net>

Hello Mr. Jasper,

As you are aware, the county commissioned the Venice Avenue at Pinebrook analyses conducted by Tindale Oliver (attached). The county Capital Improvement Program (CIP) has allocated \$2.3 million for the design and right-of-way acquisition. The project is not funded in the current 5-Year CIP nor is it being proposed to be funded for construction in the Fiscal Year 2020 -2024 budget. Teresa Goluch (copied), the Project Manager for the project, can provide you with details of the extent of the project improvements, as they currently stand.

Seeking other funding for the project, the county recently

submitted a grant application for the state's County Incentive Grant Program (CIGP) funding. The state is reviewing the application to potentially fund a Preliminary Design and Engineering (PD&E) study in their Five-Year Work Program. The PD&E study that would be done would make the project eligible for federal funding. If the county proceeds with potential funding through the CIGP, this would mean a delay in starting the design phase of the project.

Keeping in mind that construction funding has not been allocated for this project, a determination as to which route the county pursues is pending coordination with the state and county staff. A meeting is tentatively being scheduled within the next two weeks. Depending upon the impacts of the pending storm, this meeting may be scheduled further out.

Regards,

Paula

Paula R. Wiggins, PE, MBA

Transportation Planning Manager

Public Works

1001 Sarasota Center Blvd, Sarasota, FL 34240

Office: (941) 553-2222

Email: Paula.Wiggins@co.sarasota.fl.us



Sarasota County

TECHNICAL MEMORANDUM

To: Teresa Goluch, Sarasota County Public Works

From: W. T. Bowman, P.E., Tindale Oliver

Subject: Venice Avenue and Pinebrook Road Intersection Improvement: Additional Analysis
Sarasota County, Florida

Date: July 10, 2019

This item has been electronically signed and sealed by W. T. Bowman, P.E. on 7/10/2019 using a digital signature.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



BACKGROUND

Tindale Oliver previously conducted a traffic operational analysis to improve the capacity and traffic operations at the intersections of Venice Avenue at Pinebrook Road and Pinebrook Road at Ridgewood Avenue, as requested by Sarasota County. This initial analysis reviewed the following future options:

Option 1 – Intersection improvements to include turn-lane modifications and addition of through lanes at Venice Avenue and Pinebrook Road

Option 2A – Multi-lane roundabout (2-lane) at Venice Avenue and Pinebrook Road

Option 2B – Multi-lane roundabout (2-lane and 3-lane hybrid) at Venice Avenue and Pinebrook Road

Option 3 – Median U-turn; prohibit selected left-turn movements at intersection, accomplished by performing a right-turn and a U-turn at Venice Avenue and Pinebrook Road

Optional roundabout – at Ridgewood Avenue and Pinebrook Road (with any above option).

All of these alternatives had estimated construction costs higher than the County's available budget. Therefore, additional analysis was requested to explore design options that could be accommodated within the budget. The new analyzed scenarios included only turn-lane modifications to multiple approaches to the intersection of Pinebrook Road and Venice Avenue—in particular, dual left-turn lanes at multiple approaches.

This report focuses on operational evaluation of the new scenarios. For existing conditions and future volume development process, refer to the "Venice Ave at Pinebrook Rd, Intersection capacity analysis" report.

The following tasks were undertaken for this analysis:

- Developed Synchro files representing conceptual geometric conditions at study location.
- Conducted operational analysis for each feasible alternative for years 2020, 2030, and 2040.
- Prepared conceptual designs for preferred alternative.
- Prepared planning level cost estimates for preferred alternative.

OPERATIONAL ANALYSIS

The additional operational analysis evaluated the intersection at Venice Avenue and Pinebrook Road with the addition of turning lanes for the different approaches for projected 2020, 2030, and 2040 PM peak-period conditions. All options analyzed maintained a typical four-leg intersection configuration.

Analysis of the new alternatives included different intersection lane configurations that were evaluated through an iterative process. Some of these iterations showed failing v/c ratios, excessive delay, blocked through movements, and extremely long queues that reached upstream signalized intersections on Venice Avenue. Ultimately, the following options were selected for further analysis, as they showed the most acceptable operational parameters:

Option 4.1 – Dual left-turn lanes NB-SB approaches and single left-turn lanes EB-WB approaches; dedicated right-turn lanes in all approaches

Option 4.2 – Dual left-turn lanes all approaches and right-turn lanes as existing conditions

- *Option 4.3* – Dual left-turn lanes and dedicated right-turn lanes in all approaches

For each of these scenarios, an additional analysis was conducted to assess impacts of modeling channelized right-turn lanes (yield/merge condition) to each approach. The Synchro analysis of channelized right-turn lane conditions did not show any differences in terms of v/c ratio or delay compared to typical dedicated right-turn lanes layouts due to right turns in both conditions being permissive movements.

The following summarizes each analyzed alternative.

Option 4.1

This alternative evaluates the following intersection configuration, also shown in **Figure 1**:

- Dual left-turn lanes, NB and SB approaches
- Single left-turn lanes, EB and WB approaches
- Dedicated right-turn lanes, all approaches (non-channelized)

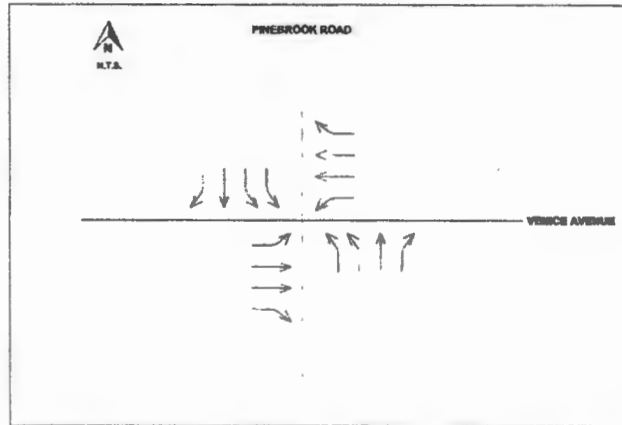


Figure 1: Option 4.1 lane configuration

The results of the 2020, 2030 and 2040 scenarios from Synchro are presented in **Table 1**.

Table 1: Option 4.1 Performance Summary

Venue Avenue at Pinebrook Road												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
V/C Ratio	0.37	0.73	0.20	0.76	0.43	0.07	0.74	0.67	0.07	0.68	0.73	0.10
Delay	29.6	46.4	34.6	40.6	32.3	26.7	79.2	58.6	43.3	76.0	61.9	44.1
LOS	C	D	C	D	C	C	E	E	D	E	E	D
Approach Delay	42.8			33.5			63.4			62.6		
Approach LOS	D			C			E			E		
HCM 2000 Ctrl Delay	48.1											
ICU	76.8%											
HCM 2000 LOS	D											
ICU LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
V/C Ratio	0.55	0.86	0.25	0.89	0.59	0.12	0.83	0.81	0.07	0.81	0.84	0.20
Delay	30.3	53.7	35.5	78.6	37.3	28.4	87.5	70.1	45.6	85.6	73.2	47.9
LOS	C	D	D	E	D	C	F	E	D	F	E	D
Approach Delay	48.3			44.1			72.5			71.5		
Approach LOS	D			D			E			E		
HCM 2000 Ctrl Delay	55.6											
ICU	84.3%											
HCM 2000 LOS	E											
ICU LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
V/C Ratio	0.80	0.98	0.28	0.96	0.79	0.20	0.94	0.91	0.07	0.99	0.92	0.30
Delay	61.2	70.9	36.2	104.8	47.4	32.6	108.0	81.9	46.2	122.2	83.7	50.6
LOS	E	E	D	F	D	C	F	F	D	F	F	D
Approach Delay	64.6			55.4			86.1			88.1		
Approach LOS	E			E			F			F		
HCM 2000 Ctrl Delay	69.5											
ICU	91.8%											
HCM 2000 LOS	E											
ICU LOS	F											

As shown in Table 1, the Option 4.1 scenario at Venice Avenue and Pinebrook Road showed that all movements are expected to operate with v/c ratios less than 1.0 and overall intersection LOS E. It should be noted, however, that some movements are expected to operate near capacity in the 2040 scenario, including mainline EB through. This indicates that the intersection will be close to reaching maximum capacity with estimated 2040 volumes.

Operational analysis for the 2030 scenario showed acceptable intersection performance with v/c ratios under 0.90. NB and SB left-turn movements are expected to perform at LOS F.

The intersection is expected to operate acceptably with 2020 estimated volumes.

The Option 4.1 *Highway Capacity Manual 2000* summary report from Synchro is provided in **Attachment A**.

Option 4.2

This alternative reviewed the following lane configurations, also shown in **Figure 2**:

- Dual left-turn lanes, all approaches
- Dedicated right-turn lanes, EB and SB approaches
- Shared through-right lanes, NB and WB approaches

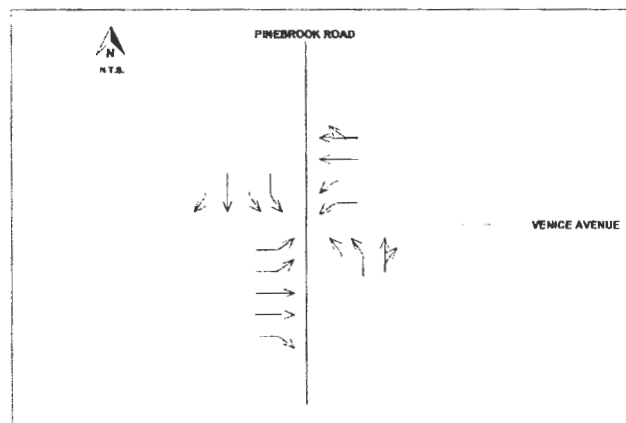


Figure 2: Option 4.2 Lane Configuration

A summary of the results for all modeled scenarios from Synchro is shown in **Table 2**.

Table 2: Option 4.2 Performance Summary

Venice Avenue and Pinebrook Road											
2020	Movement	EBL	EBT	EBR	WBL	WBTR	NBL	NBTR	SBL	SBT	SBR
	V/C Ratio	0.59	0.74	0.20	0.74	0.57	0.69	0.82	0.68	0.66	0.16
	Delay	78.0	48.3	35.7	81.6	40.1	75.4	63.9	80.9	55.2	42.2
	LOS	E	D	D	F	D	E	E	F	E	D
	Approach Delay	48.9			49.3		68.0		60.4		
	Approach LOS	D			D		E		E		
	HCM 2000 Ctrl Delay	54.8									
	ICU	79.4%									
	HCM 2000 LOS	D									
	ICU LOS	D									
2030	Movement	EBL	EBT	EBR	WBL	WBTR	NBL	NBTR	SBL	SBT	SBR
	V/C Ratio	0.77	0.88	0.25	0.83	0.77	0.73	0.89	0.80	0.72	0.25
	Delay	90.1	56.9	36.8	89.3	47.2	76.9	71.9	89.7	58.7	44.2
	LOS	F	E	D	F	D	E	E	F	E	D
	Approach Delay	57.1			55.3		73.7		65.2		
	Approach LOS	E			E		E		E		
	HCM 2000 Ctrl Delay	60.9									
	ICU	85.7%									
	HCM 2000 LOS	E									
	ICU LOS	E									
2040	Movement	EBL	EBT	EBR	WBL	WBTR	NBL	NBTR	SBL	SBT	SBR
	V/C Ratio	0.80	0.98	0.28	0.93	0.98	0.82	0.98	0.99	0.80	0.32
	Delay	89.6	70.9	36.2	105.8	67.9	89.8	88.5	122.2	64.4	46.7
	LOS	F	E	D	F	E	F	F	F	E	D
	Approach Delay	67.8			74.5		89.0		78.6		
	Approach LOS	E			E		F		E		
	HCM 2000 Ctrl Delay	75.3									
	ICU	92.6%									
	HCM 2000 LOS	E									
	ICU LOS	F									

As shown in Table 2, Option 4.2 is expected to operate acceptably during the 2020 and 2030 scenarios. In the 2040 scenario, several movements will be very close to reaching maximum capacity, and the intersection is expected to have an overall LOS E. Intersection control delay slightly increases by 6.1 seconds compared to Option 4.1. EB left-turn delay significantly increases by 28.4 seconds, as it changed from protective-permissive to protected only. NB and SB left-turn through movement delays decrease by 18.2 and 19.3 seconds, respectively, due to reallocation of green time in this intersection lane configuration.

The Option 4.2 *Highway Capacity Manual 2000* summary report from Synchro is provided in **Attachment A**.

Option 4.3

This alternative reviewed the following lane configurations, also shown in **Figure 3**:

- Dual left-turn lanes, all approaches
- Dedicated right-turn lanes, all approaches (non-channelized)

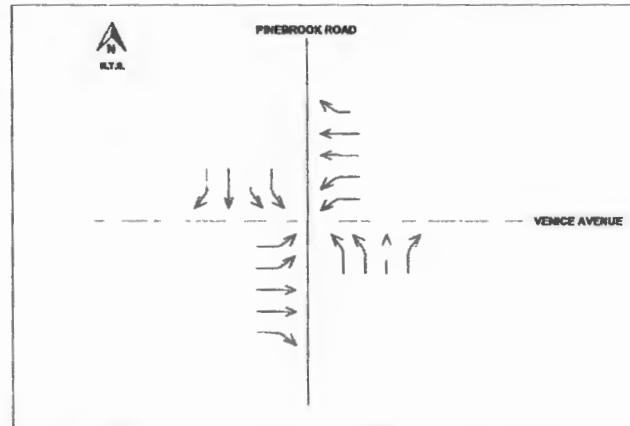


Figure 3: Option 4.3 Lane Configuration

A summary of the results for all modeled scenarios for Option 4.3 is shown in **Table 3**.

Table 3: Option 4.3 Performance Summary

Venice Avenue													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
V/C Ratio	0.50	0.72	0.20	0.68	0.46	0.07	0.72	0.66	0.07	0.63	0.71	0.17	
Delay	73.1	45.5	34.0	75.9	36.3	29.8	76.7	57.5	42.7	77.0	59.6	44.3	
LOS	E	D	C	E	D	C	E	E	D	E	E	D	
Approach Delay	46.0			44.3			61.9			61.8			
Approach LOS	D			D			E			E			
HCM 2000 Ctrl Delay	51.6												
ICU	74.6%												
HCM 2000 LOS	D												
ICU LOS	D												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
V/C Ratio	0.62	0.85	0.24	0.75	0.63	0.12	0.75	0.74	0.07	0.75	0.77	0.26	
Delay	76.5	52.7	35.1	79.9	40.9	30.9	79.0	61.8	42.9	83.8	64.3	46.7	
LOS	E	D	D	E	D	C	E	E	D	F	E	D	
Approach Delay	52.3			47.2			65.0			66.5			
Approach LOS	D			D			E			E			
HCM 2000 Ctrl Delay	55.7												
ICU	80.8%												
HCM 2000 LOS	E												
ICU LOS	D												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
V/C Ratio	0.67	0.91	0.26	0.85	0.76	0.18	0.86	0.92	0.09	0.85	0.91	0.37	
Delay	75.9	54.2	32.1	89.7	43.3	30.1	91.0	82.7	46.1	92.1	79.7	49.5	
LOS	E	D	C	F	D	C	F	F	D	F	E	D	
Approach Delay	53.3			49.7			80.5			76.5			
Approach LOS	D			D			F			E			
HCM 2000 Ctrl Delay	60.8												
ICU	87.1%												
HCM 2000 LOS	E												
ICU LOS	E												

Option 4.3 substantially increases capacity compared to the baseline condition and previously analyzed alternatives, with the addition of dual left-turn lanes and dedicated right-turn lanes in every approach. This option is expected to operate with acceptable v/c ratios in all three scenarios of 2020, 2030, and 2040. During 2040 traffic conditions, LOS E is expected for the overall operation of the intersection. However, some specific movements, primarily left turns, will perform at LOS F and an average delay of 88.9 seconds. Most saturated movements will be SB, NB, and EB throughs.

Extended analysis of this alternative was conducted using SimTraffic to determine a more comprehensive queueing forecast at the study intersection. Analysis of the busiest traffic conditions in the 2040 scenario showed SB queues extended past Ridgewood, which could generate excessive delay for traffic on the side street. EB and WB queues for through movements did not reach upstream intersections based on 95th percentile. NB, EB, and WB queues were able to clear in less than two cycles. All turning lanes are estimated to reach back-of-queues longer than designed storage based on 95th percentile queue, and average queues are estimated to extend within storage length. Most congested turning movement is EB left-turn, taking several cycles to clear during the peak period.

The Option 4.3 *Highway Capacity Manual 2000* summary report from Synchro and SimTraffic Queueing and Blocking report are provided in **Attachment A**.

IMPROVEMENT CONCEPTS AND COST ESTIMATE

Conceptual plans and a cost estimate were prepared for Option 4.3, the preferred alternative after review of the operational analysis. The cost estimate was prepared using FDOT's Historical Cost table. Right-of-way (ROW) estimated cost was calculated using available parcel cost information provided by the County.

A summary of the estimated cost of the project is presented in **Table 4**. Details of the construction cost estimate and ROW cost are included in **Attachment B**. Conceptual plans for improvements and ROW impact areas are included in **Attachment C**.

Table 4: Cost Estimate Summary

Alternative	Construction Cost	ROW Cost	Total
Option 4.3	\$ 2,389,327.77	\$ 92,075.10	\$ 2,481,402.87

RECOMMENDATION

Based on the analysis, Option 4.3 is estimated to provide the best long-term operation within the County's budget. Additionally, although 2040 is expected to have operational challenges with all three options, Option 4.3 provides the best estimated intersection operation in 2040 and is estimated to provide acceptable operation through 2030.

It should be noted that though this analysis included right-turn lanes (not channelized) a design decision can be made to add channelization. The impacts on cost are estimated to be minor.

ATTACHMENTS

A – HCM 2000 Synchro and SimTraffic Queueing and Blocking Reports

B – Construction Cost Estimate and ROW Cost

C – Conceptual Plan Sheets

*COV Annual Update of the C15
Petition # 18-03AM
Staff Report*

SARASOTA COUNTY																		
2017 GENERALIZED LEVEL OF SERVICE ANALYSIS																		
CITY OF VENICE																		
ID*	Road Segments			Segment Attributes			Existing Traffic Conditions										Minimum	
	Roadway Name	Limits	Jurisdiction	# of Lanes	Segn Length	Traffic Counts		Adjusted to 2017 AADT**	Adjusted to 2016 AADT**	Adjusted to 2015 AADT**	Adjusted to 2014 AADT**	Adjusted to 2013 AADT**	DfV	LOS	Adopted Standards	Srv Vel		
						Source	Volume											
13	Albee Farm Road	Colonia	Lucaye	Co./Ven	4	0.80	SC	8,304	8,304	8,739	8,782	8,848	9,126	905	C	D	3,222	
16	Auburn Road	Border	Venice	County	2	1.55	SC	3,075	3,075	2,148	2,152	2,430	1,952	341	C	D	1,197	
17	Avenida del Circo	Airport Ave	U.S. 41	Co./Ven	2	0.30	SC	3,850	3,850	4,058	3,951	3,475	3,204	427	C	D	1,264	
54.1	Border Road	Auburn	Jacaranda	County	2	1.00	SC	3,210	3,210	2,741	2,349	2,640	2,278	356	C	D	1,264	
54.2	Border Road	Jacaranda	Jackson	County	2	1.52	SC	1,942	1,942	1,722	1,477	1,515	1,212	216	C	C	1,057	
57	Capri Isles Boulevard	Venice	Border	Co./Ven	2	1.70	SC	5,745	5,745	6,164	6,002	5,844	4,670	632	D	D	998	
115	Harbor Drive	Venice Ave	Beach Rd	Co./Ven	2	1.40	SC	3,449	3,449	3,155	3,072	2,849	3,764	383	C	D	1,264	
117	Harbor Drive	Beach Rd	South of Beach Rd	Co./Ven	2	1.70	SC	3,931	4,146	3,755	3,666	3,267	6,657	456	C	D	931	
131.1	Jacaranda Boulevard	Laurel	Border	Co./Ven	2	1.16	SC	4,015	4,015	3,371	2,474	2,113	-	442	C	D	1,330	
142	Laurel Road	Albee Farm Rd	Pinebrook	County	4	1.00	SC	16,583	16,583	15,359	13,972	13,605	13,247	1,775	C	D	3,222	
142.5	Laurel Road	Pinebrook	I-75	County	4	0.50	SC	15,900	15,900	19,261	16,327	15,898	15,480	1,654	C	D	3,401	
142.6	Laurel Road	I-75	Knights Trail	County	4	0.50	SC	17,549	17,549	15,027	15,334	14,931	14,312	1,825	C	D	3,401	
142.6	Laurel Road	Knights Trail	Jacaranda	County	2	1.44	SC	17,549	17,549	15,027	15,334	14,931	14,312	1,825	F	D	1,440	
171	Park Boulevard	Bayshore	Venice	Co./Ven	2	0.55	SC	413	413	229	223	222	280	46	C	D	931	
172	Park Boulevard	Venice	Gulf	Co./Ven	2	0.70	SC	866	866	503	490	503	398	96	C	D	931	
173.5	Pinebrook Road	Laurel	Edmondson	County	4	1.00	SC	11,511	11,511	10,556	9,012	8,217	7,551	1,255	C	D	3,401	
174	Pinebrook Road	Edmondson	Venice	Co./Ven	2	1.60	SC	9,240	9,240	7,352	9,131	8,769	6,506	1,007	D	D	1,264	
174.5	Pinebrook Road	Venice	Center	Co./Ven	2	1.48	SC	13,072	13,072	12,596	12,271	11,781	8,989	1,359	E	D	1,330	
252	U.S.41 By-Pass (SR 45A)	U.S. 41	Bird Bay	FDOT/Ven	6	0.25	FDOT	35,500	35,500	39,000	39,500	37,500	37,000	3,231	C	D	5,660	
253	U.S.41 By-Pass (SR 45A)	Bird Bay	TI Maxx Ent.	FDOT/Ven	6	0.25	FDOT	35,500	35,500	39,000	39,500	37,500	37,000	3,231	C	D	5,660	
254	U.S.41 By-Pass (SR 45A)	TI Maxx Ent.	Albee Farm Rd	FDOT/Ven	6	0.30	FDOT	35,500	35,500	39,000	39,500	37,500	37,000	3,231	C	D	5,660	
255	U.S.41 By-Pass (SR 45A)	Albee Farm Rd	Venice Ave	FDOT/Ven	6	0.30	FDOT	35,500	35,500	39,000	39,500	37,500	37,000	3,231	C	D	5,660	
256	U.S.41 By-Pass (SR 45A)	Venice Ave	Center Rd	FDOT	4	1.60	FDOT	35,500	35,500	39,000	39,500	37,500	37,000	3,231	C	D	3,580	
287	U.S.41 (SR 45)	Colonia	U.S. 41 By-Pass	FDOT	6	0.50	FDOT	40,000	40,000	45,000	44,500	43,000	41,000	3,640	C	D	5,660	
288	U.S.41 (SR 45)	U.S. 41 By-Pass	Venice	FDOT/Ven	4	0.65	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	D	D	3,066	
289	U.S.41 (SR 45)	Venice	Miami	FDOT/Ven	4	0.10	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	D	D	3,066	
290	U.S.41 (SR 45)	Miami	Milan	FDOT/Ven	4	0.20	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	D	D	2,920	
291	U.S.41 (SR 45)	Milan	Turin	FDOT/Ven	4	0.15	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	D	D	2,920	
292	U.S.41 (SR 45)	Turin	Palermo	FDOT/Ven	4	0.15	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	D	D	2,920	
293	U.S.41 (SR 45)	Palermo	San Marco	FDOT/Ven	4	0.20	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	D	D	2,920	
294	U.S.41 (SR 45)	San Marco	Avenida Del Circo	FDOT	4	0.55	FDOT	17,900	17,900	18,600	15,000	18,300	17,200	1,862	C	D	3,580	
295	U.S.41 (SR 45)	Avenida Del Circo	U.S. 41 By-Pass	FDOT	4	1.10	FDOT	30,000	30,000	29,000	25,000	28,000	25,500	2,910	C	D	3,759	
304	Venice Avenue	Bus. U.S. 41	Grove	Co./Ven	4	0.75	SC	18,068	18,068	16,884	14,807	14,418	14,039	1,861	D	D	2,628	
304	Venice Avenue	Grove	U.S. 41 By Pass	Co./Ven	4	0.75	SC	18,068	18,068	16,884	14,807	14,418	14,039	1,861	D	D	2,774	
305	Venice Avenue	U.S. 41 By Pass	Cherry St	Co./Ven	4	0.80	SC	22,537	22,537	18,826	19,149	18,646	17,356	2,321	D	D	2,774	
306	Venice Avenue	Cherry St	Pinebrook	County	4	0.25	SC	16,711	16,711	17,694	19,537	19,023	17,495	1,738	D	D	2,628	
306.3	Venice Avenue	Pinebrook	Capri Isles Blvd	County	4	0.25	SC	14,792	15,191	14,792	17,803	17,335	16,029	1,580	D	D	2,774	
306.5	Venice Avenue	Capri Isles Blvd	Auburn	County	4	0.75	SC	18,245	18,245	15,872	16,811	16,369	14,888	1,879	C	D	3,222	
679	Edmondson Road	Pinebrook Rd	Capri Isles Blvd	Co./Ven	2	0.45	SC	-	-	-	-	-	-	N/A	D	D	1,197	
680	Edmondson Road	Capri Isles Blvd	Auburn Rd	Co./Ven	2	0.56	SC	-	-	-	-	-	-	N/A	D	D	931	
1042	Edmondson Road	Albee Farm Rd	Pinebrook	County	2	1.01	SC	5,635	5,635	3,315	2,933	2,769	2,489	620	C	D	1,264	
1046	Hatchet Creek Boulevard	Pinebrook Rd	Jacaranda Blvd	Co./Ven	2	1.76	SC	2,926	2,926	2,715	2,660	3,144	2,576	325	C	D	1,264	

* Unique Street Identifier

** Annual Average Daily Trips

Source: <https://www.scor.net/government/public-works/transportation-planning/transplan>

* Unique Street Identifier

** Annual Average Daily Trips

Source: <https://www.sco.gov.net/government/public-works/transportation-planning/transportation>

Refined Future (2030)

Roadway	From	To	No. of Lanes	2017 AADT	2030 AADT	Max Service Volume	Peak Hour Vol	V/C	LOS
Border Road	Auburn Road	Jacaranda Blvd	2	3,210	12,077	1,264	1,087	0.86	D
Border Road	Jacaranda Blvd	Jackson Road	2	1,942	8,203	1,057	738	0.70	C
Edmondson Road	Pinebrook Road	Capri Isle Blvd	2	3,600	11,410	1,197	1,027	0.86	D
Edmondson Road	Capri Isle Blvd	Auburn Road	2	3,600	7,063	931	636	0.68	D
Honore Avenue	Laurel Road	Ranch Road	2	2,841	11,761	1,520	1,058	0.70	C
Honore Avenue	Ranch Road	SR 681	2	2,841	13,189	1,600	1,187	0.74	C
Jacaranda Blvd	Laurel Road	Border Road	2	4,015	10,423	1,330	938	0.71	D
Knights Trail	City Limits	Laurel Road	2	6,600	17,586	1,440	1,583	1.10	E
Laurel Road	Pinebrook Road	I-75	4	15,900	30,843	3,401	2,776	0.82	C
Laurel Road	I-75	Knights Trail	4	17,549	44,469	3,401	4,002	1.18	F
Laurel Road	Knights Trail	Jacaranda Blvd	2	6,022	20,589	1,440	1,853	1.29	F
Pinebrook Road	Laurel Road	Edmondson Road	4	11,511	25,743	3,401	2,317	0.68	C

Recommended 2030 planning volumes are an average of existing count plus cumulative area traffic study trips and adopted model volumes (after data refinements) adjusted for base year model volume-to-count ratios.