

Replacement

Meeting Date
<b>March 17, 2015</b>



AGENDA	
Section	Reports
Item No.	VIII E 1

**AGENDA REPORT**  
*BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS*

SUBJECT:	Letter to Representative Steve Crisafulli, Speaker of the House		
DEPT/OFFICE:	<b>District 5, Commissioner Andy Anderson</b>		
Requested Action:			
Summary Explanation & Background:			
Clerk to the Board Instructions:			
Exhibits Attached:	Letter; list of legislators		
Contract /Agreement (If attached):	Reviewed by County Attorney	Yes <input type="checkbox"/>	No <input type="checkbox"/> PR <input type="checkbox"/>
County Manager	Assistant County Manager, Mel Scott	Department Director / Extension	
Stockton Whitten	Assistant County Manager, Venetta Valdengo		



Tammy Etheridge, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001  
Fax: (321) 264-6972

March 18, 2015

MEMORANDUM

TO: Commissioner Andy Anderson, District 5

RE: Item VIII.E.1., Letter to Representative Steve Crisafulli, Speaker of the House, for St. Johns Heritage Parkway, Babcock Road, and Associated Environmentally Sensitive Lands

The Board of County Commissioners, in regular session on March 17, 2015, authorized the Chairman to sign a letter to Representative Steve Crisafulli, Speaker of the House, supporting the funding of the St. Johns Heritage Parkway/Babcock Road improvements and associated conservation of environmentally sensitive lands. Enclosed is a copy of the letter for you records.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS  
SCOTT ELLIS, CLERK

*Tammy Etheridge*

Tammy Etheridge, Deputy Clerk

/kg



**BOARD OF COUNTY COMMISSIONERS**

**Robin L. Fisher, District 1 Commissioner**

400 South Street, Suite 1A

Titusville, FL 32780

(321) 264-6750

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March 13, 2015

Representative Steve Crisafulli,  
Speaker of the House  
2460 North Courtenay Parkway  
Suite 108  
Merritt Island, FL 32953-4193

Re: St. Johns Heritage Parkway & Babcock Road  
& Associated Environmentally Sensitive Lands

Dear Representative Crisafulli,

Brevard County wishes to express its support for the funding of the St. John's Heritage Parkway/Babcock Road improvements and associated conservation of environmentally sensitive lands. The Florida Department of Transportation (FDOT) has funded the construction of two new Interstate 95 interchanges located at Ellis Road and Micco Road. (Please see attached FDOT exhibit: *St. Johns Heritage Parkway*). The local City and County governments are responsible for construction of the St. Johns Heritage Parkway and Babcock Road improvements providing connectivity to the new Interchanges.

These interchanges allow the St. Johns Heritage Parkway to act as beltway around I-95 providing for a 13,000 interstate trip reduction. The project connects employees with employers, including several Fortune 500 Federal contractors. The proposed roadway promotes long term job creation w/new or improved access to 1,400 acres of vacant Mixed Use property. (Please see attached exhibit: *Major Employer's & Federal Contractors*).

In addition, the project allows for a new north-south arterial roadway which connects to several east-west arterial roadways that act as evacuation routes for coastal high hazard areas and for other potential man-made or natural disasters. The results of the Cost Benefit Analysis for the Parkway demonstrates a Benefit /Cost Ratio of 2.41 (Please see attached *Cost Benefit Analysis*).

The St. Johns Heritage Parkway is the Space Coast Transportation Planning Organization's 1st ranked priority in the adopted Long Range Transportation Plan and is included in the Transportation Regional Incentive Program (TRIP) candidate project list as part of the Regional Long Range Transportation Plan adopted by the Central Florida MPO Alliance. The St. Johns Heritage Parkway Phase II has construction plans at 90% and all Rights of Way have been acquired or funded for purchase.

As a County project, the proposed roadway projects qualify for both County Incentive Grant Program (CIGP) and Transportation Regional Incentive Program (TRIP) funds. The requested funding amount would be \$10,000,000 for construction.

The purchase of the environmentally sensitive lands in the approximate amount of \$5,000,000 has several State funding sources available. The conservation and storm water treatment provided by this purchase is more fully described in the attached description. (Please see attached exhibit: *Conservation & Storm Water Treatment*).

Very truly yours,



Robin L. Fisher, Chairman  
Brevard County Board of County Commissioners

Attachments

CC: Stockton Whitten, County Manager  
Chad C. Shultz, Acting City Manager

# St. Johns Heritage Parkway

as of 12/4/14



**NOTE:**

- Dollars are in Millions
- Dollar amounts are calculated to the funded year
- Dollar amounts for unfunded phases are PDC (present day costs)
- Fiscal Year (FY) - July 1 thru June 30

**426905-3** 0.571 miles  
**I-95 Interchange @ Ellis Rd/St Johns Heritage Pkwy**  
 FDOT Project for New Interchange (D/B/B)  
 Study on -1 (underway), LDCA=1/2016  
 DESIGN - \$0.563m FY15-16 (underway)  
 ROW Certification - 8/2018  
 ROW - \$14.607m FY16 - FY19  
 CONST - \$40.420m FY17  
 CEI - \$3.776m FY17

**HIGHEST PROGRAMMED PHASE**

PHASE	COLOR
NO PROJECTS	
PREL. ENG.	
RIGHT OF WAY	
CONSTRUCTION	
P.D. & E.	

**428346-4** 2.196 miles  
**St Johns Heritage Pkwy from US 192 to I-95 Interchange @ Ellis Rd.**  
 JPA with Brevard County  
 DESIGN & ROW on segment -2  
 DESIGN & ROW by Brevard County  
 CONST - \$6.236m FY17

**426905-1** 2.312 miles  
**Ellis Rd W of I-95 Interchange to Wickham Rd**  
 PD&E - Study Underway  
 LDCA Scheduled - 6/2016

**426905-2** 1.697 miles  
**Ellis Road from John Rhodes to W of Wickham Rd**  
 LAP Project with Brevard County  
 DESIGN - \$3.862m FY13-15  
 ROW - UNFUNDED  
 CONST - UNFUNDED

**428346-3** 3.094 miles  
**St Johns Heritage Pkwy from N Palm Bay City Limits to US 192.**  
 JPA with Brevard County  
 DESIGN & ROW on segment -2  
 DESIGN & ROW by Brevard County  
 CONST - \$18.190m FY14  
 CEI - \$1.519m FY14

**428346-1** 5.846 miles  
**Palm Bay Pkwy from Malabar Rd to N of Palm Bay City Limits**  
 LAP Project with City of Palm Bay (D/B)  
 UNDER CONSTRUCTION  
 Construction Began 8/2012  
 Contractor is Community Asphalt (\$11.90m)

**NO PROJECTS**  
**Palm Bay Pkwy from Babcock St to Malabar Rd**  
 No PD&E Study has been done

**426904-3** 0.10 miles  
**I-95 Interchange @ St Johns Heritage Pkwy/ Palm Bay Pkwy N of Micco Rd**  
 FDOT Project for New Interchange (D/B)  
 Study on -1 (Underway), LDCA=2/2015  
 DESIGN - \$1.362m FY13 (R/W Maps/60% Plans)  
 ROW - By Developer (City of Palm Bay)  
 CONST - \$26.478m FY16 ACNP  
 CEI - \$2.007m FY16 ACNP  
 Bid Opening Scheduled for 5/2016

**426904-1** 3.931 miles  
**Babcock Street to Micco Road**  
 PD&E - Study Underway  
 LDCA Scheduled - 3/2015

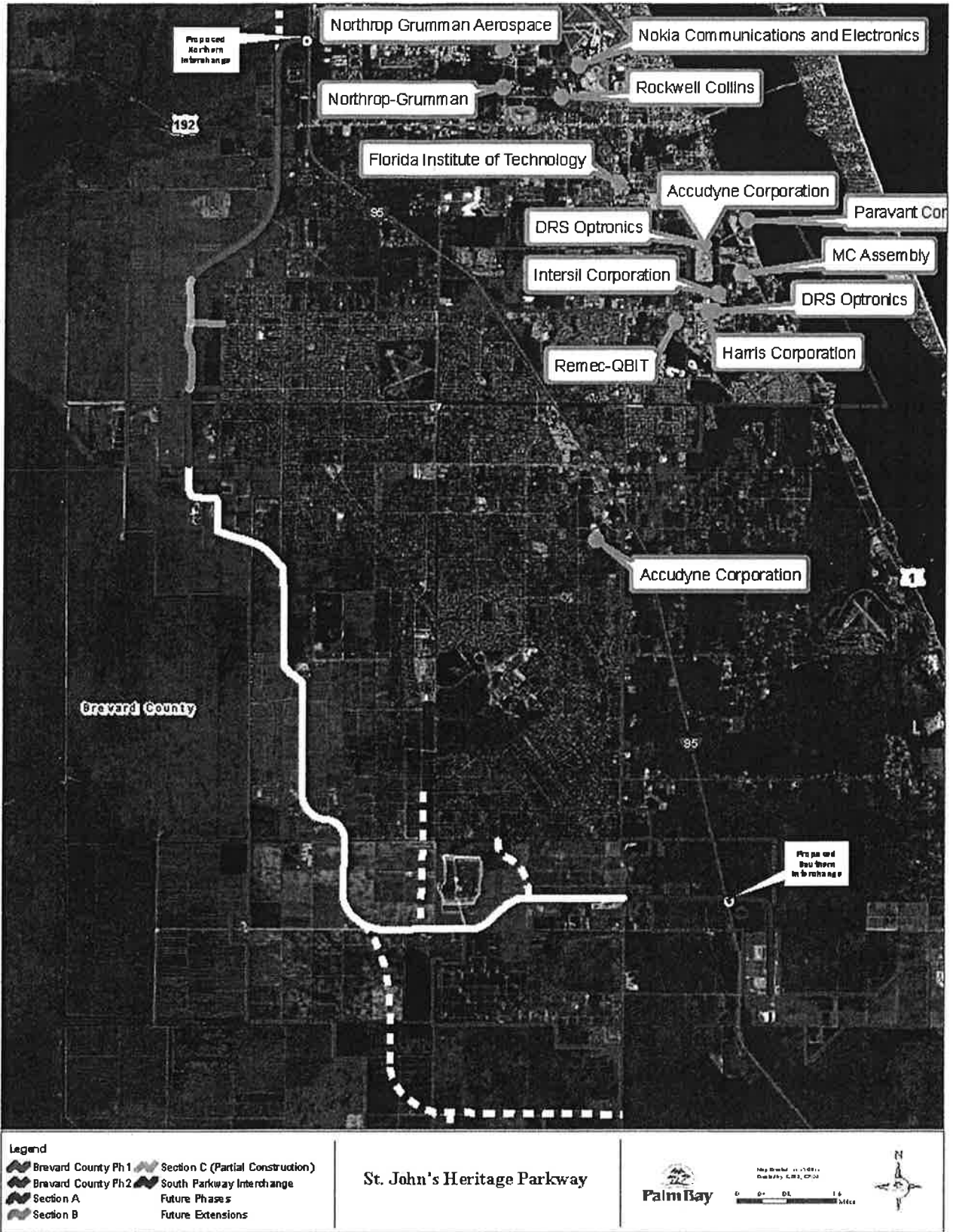
**LEGEND**

US Highway	
Interstate Highway	
State Highway	
County Highway	
Railroad	

**FDOT**

0 0.4 0.8 1.6 2.4 3.2 Miles

# Major Employer's & Federal Contractors



## ■ ST JOHNS HERITAGE PARKWAY – BENEFIT COST ANALYSIS

### FRAMEWORK

United States Department of Transportation (USDOT) guidance indicates that a Benefit Cost Analysis (BCA) in support of funding requests are to be performed with defensible and robust methods, data and assumptions. The following BCA measures the benefits against costs throughout the study period beginning at the estimated completion date of 2015 and for 20 years of full operations (2015 to 2035). The monetized benefits are estimated into an Equivalent Uniform Annual Benefit to be compared with the Life-cycle Equivalent Uniform Annual Cost (EUAC).

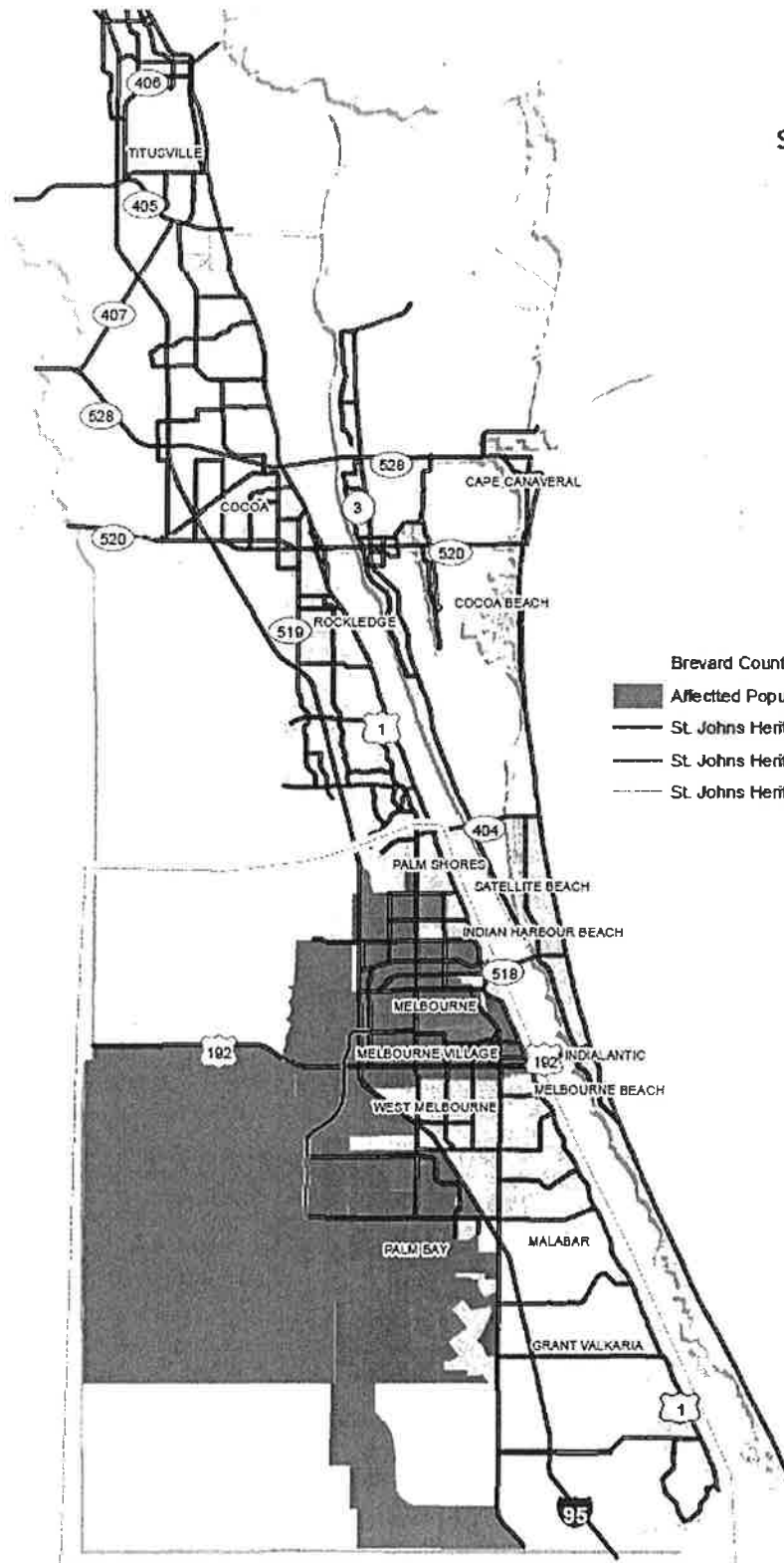
The BCA is structured around the relationship between Livability, Economic Competitiveness, Safety and Environmental Safety benefits to the affected population (users) and the cost of the project. The St. Johns Heritage Parkway (Parkway), located in South Brevard County will provide a heavily populated area of the county with substantial benefits for their travel to the major employers located within the area.

### AFFECTED POPULATION

Anticipated changes in travel patterns and the affected population were developed from the Central Florida Regional Planning Model (CFRPM) developed to support the 2035 Long Range Transportation Plan update for the Metropolitan Planning Organizations in Central Florida including the Space Coast TPO. For the St. Johns Heritage Parkway the 2015 and 2035 forecast models were used for the base year no build and alternatives for travel variables and affected population.

The affected population was determined using the select link function within the model, which isolates the person trips by Traffic Analysis Zone (TAZ) that are using a specific roadway or corridor. The 2015 model was run with the Parkway, and the population estimated within the origin TAZs of the users of the Parkway (Map1).

Socio-Economic Projections	Population	Employment
Brevard County (2015)	570,244	290,452
Study Area (2015)	254,489	128,298
% of County	45%	44%
Affected Population (2015)	134,320	79,852
% of County	24%	27%



**St. Johns Heritage Pkwy  
Affected Population**

- Brevard County
- Affected Population (by Traffic Analysis Zone)
- St. Johns Heritage Parkway (TIGER III application segment)
- St. Johns Heritage Parkway (City of Palm Bay fully funded segment)
- St. Johns Heritage Parkway Study Area

0 1.5 3 Miles

### BENEFITS & CRITERIA

Key benefit categories for the St. Johns Heritage Parkway are measured by vehicle operating costs, travel time savings, accident costs, and emission costs due to less congestion and fewer vehicle miles of travel for working trips resulting from the construction of the project. Table 2 describes each benefit which were able to be monetized in the analysis, categorized based upon criteria noted in the Federal grant guidance.

Criteria	Benefits	Description
Livability	Vehicle Operating Cost Savings	Reductions in vehicle operating costs due to reduced Vehicle Miles of Travel for the Affected Population to Major Employers
Economic Competitiveness	Travel Time Savings	Reductions travel time due to reduced Person Hours of Travel for the Affected Population to Major Employers
Safety	Accident Reduction	Reductions in property loss, injuries and deaths from accidents due to reduced Vehicle Miles of Travel for the Affected Population to Major Employers.
State of Good Repair	Pavement Maintenance	New Construction (Not Available)
Sustainability	Emission Reductions	Reductions in pollutants and Green House Gasses (GHG) due to reduced Vehicle Miles of Travel for the Affected Population to Major Employers.

### INPUT VARIABLES

Input values used in this analysis are taken from the USDOT guidance on the preparation of a BCA, including recently published guidelines for the Federal grant application. Where USDOT has not provided valuation guidance or reference to guidance, standard industry practice has been applied.

Livability	Value	Source
Fuel Cost (per gallon)	\$ 3.43	US Department of Energy: Fuel Economy Guide 2011
Oil Cost (per quart)	\$ 7.29	HERS 2008
Tire Cost (per tire)	\$ 84.30	HERS 2008
Maintenance & Repair Cost (per visit)	\$ 147.90	HERS 2008
Depreciable Value	\$24,475	HERS 2008

Economic Competitiveness	Value	Source
Value of Time (per person hour)	\$ 10.00	USDOT - Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis, Palm Bay Median HH income (\$ 41,591 ACS) / 2,080 working hours a year * 50%

Safety	Value	Source
Fatal Accident Cost	\$ 6,200,000	USDOT – Notice of Funding Availability
Injury Accident Cost	\$ 1,659,200	USDOT – Notice of Funding Availability
Property Damage Cost	\$ 3,285	USDOT – Notice of Funding Availability

State of Good Repair	Value	Source
Pavement Maintenance Cost	N/A	N/A

Sustainability	Value	Source
Carbon dioxide (CO2) Cost	\$ 21.40	Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, 2010 (per metric ton)
Volatile Organic Compound (VOCs) Cost	\$ 1,700	Notice Of Funding Available, 2007 (per metric ton)
Nitrogen oxides (NOX) Cost	\$ 4,000	Notice Of Funding Available, 2007 (per metric ton)
Sulfur dioxide (SOX) Cost	\$ 16,000	Notice Of Funding Available, 2007 (per metric ton)
Particulate Matter Cost	\$168,000	Notice Of Funding Available, 2007 (per metric ton)

**LIVABILITY BENEFIT**

Vehicle operating costs are an integral element of computing travel user costs and the out-of pocket expenses associated with owning, operating, and maintaining a vehicle. The cost component of vehicle operating costs measured in this analysis include fuel consumption, oil consumption, tire wear, maintenance and repair, as well as vehicle depreciation. Vehicle operating cost benefits are estimated based on the reductions of Vehicle Miles of Travel with the St. Johns Heritage Parkway for work trips to major employers that will occur over a 20 year period. The Equivalent Uniform Annual vehicle operating cost benefit from the St. Johns Heritage Parkway are projected to be **\$388,938 per year**, when discounted at seven percent over the 20 years ( **\$276,957 per year** at a three percent discount over 20 years).

Annual Livability Benefit	Variables	Monetized Benefit (7%)	Monetized Benefit (3%)
Vehicle Operating Cost Savings for Affected Population to Major Employment Centers	Fuel Savings	\$ 169,024	\$ 120,360
	Oil Savings	\$ 11,165	\$ 7,950
	Tire Savings	\$ 6,453	\$ 4,595
	Maintenance and Operations Savings	\$ 8,491	\$ 6,046
	Depreciable Value Savings	\$ 193,805	\$ 138,006
	<b>Total Benefit</b>	<b>\$ 388,938</b>	<b>\$ 276,957</b>

**ECONOMIC COMPETITIVENESS BENEFIT**

Travel time savings occur for both the diverted trip using the alternative and trips already on the roadway network. Travel time savings are derived by changes in the person hours of travel for the affected population between the base no-build scenario and the alternative. Travel time saving are estimated by measuring the difference between person hours of travel for work trips to major employers before and after the project is complete for a 20 year period. The Equivalent Uniform Annual travel time savings benefit from the St. Johns Heritage Parkway are projected to be **\$10,953,947 per year** when discounted at seven percent over the 20 years ( **\$7,800,132 per year** at a three percent discount over 20 years).

Annual Economic Competitiveness Benefit	Variables	Monetized Benefit (7%)	Monetized Benefit (3%)
Travel Time Savings for Affected Population to Major employment Center	Travel Time Savings	\$ 10,953,947	\$ 7,800,132
	<b>Total Benefit</b>	<b>\$ 10,953,947</b>	<b>\$ 7,800,132</b>

**SAFETY BENEFIT**

The cost associated with accidents is derived by changes in the vehicle miles of travel for the affected population between the base no-build scenario and the alternative. The cost saving from the reduction of an accident are estimated by measuring the difference between vehicle miles of travel for work trips to major employers before and after the project is complete over a 20 year period. The Equivalent Uniform Annual travel time savings benefit from the St. Johns Heritage Parkway are projected to be **\$4,098 per year** when discounted at seven percent over the 20 years ( **\$2,918 per year** at a three percent discount over 20 years).

Annual Safety Benefit	Variables	Monetized Benefit (7%)	Monetized Benefit (3%)
Accident Reduction for Affected Population to Major Employment Centers	Fatal Accident Savings	\$ 176	\$ 125
	Injury Accident Savings	\$ 3,915	\$ 2,787
	Property Damage Savings	\$ 8	\$ 6
<b>Total Benefit</b>		<b>\$ 4,098</b>	<b>\$ 2,918</b>

**STATE OF GOOD REPAIR BENEFIT**

This is a new project and will not reduce or increase the projected costs associated with the maintenance or repair of other facilities

Annual Economic Competitiveness Benefit	Variables	Monetized Benefit (7%)	Monetized Benefit (3%)
Pavement maintenance Savings	Pavement Maintenance or Repair	\$ 0	\$ 0
<b>Total Benefit</b>		<b>\$ 0</b>	<b>\$ 0</b>

**SUSTAINABILITY BENEFIT**

Vehicle emission reductions are an integral element of the Space Coast TPO's Goals, Objectives, Measures and Targets. The cost component of vehicle emission costs measured in this analysis include the cost per metric ton of Carbon dioxide (CO<sub>2</sub>), Volatile Organic compounds (VOCs), Nitrogen oxides (NOX), Sulfur dioxide (SOX), and Particulate Matter (PM). Vehicle emission cost benefits are estimated based on the reductions of Vehicle Miles of Travel with the St. Johns Heritage Parkway for work trips to major employers that will occur over a 20 year period. The Equivalent Uniform Annual vehicle operating cost benefit from the St. Johns Heritage Parkway are projected to be **\$247 per year**, when discounted at seven percent over the 20 years ( **\$176 per year** at a three percent discount over 20 years).

<b>Annual Livability Benefit</b>	<b>Variables</b>	<b>Monetized Benefit (7%)</b>	<b>Monetized Benefit (3%)</b>
Vehicle Operating Cost Savings for Affected Population to Major Employment Centers	CO <sub>2</sub> Savings	\$ 126	\$ 89
	VOCs Savings	\$ 26	\$ 18
	NOX Savings	\$ 31	\$ 22
	SOX Savings	\$ 2	\$ 1
	PM Savings	\$ 63	\$ 45
	<b>Total Benefit</b>	<b>\$ 247</b>	<b>\$ 176</b>

**LIFECYCLE COST**

The full project cost, independent of funding sources, is used for comparison with the total benefits. The cost of the project is projected to be \$49,811,000 which includes maintenance and repairs over the 20 year period using the USDOT – Federal Highway Administration Real Cost v 2.5 costing tool. Costs are reported in Equivalent Uniform Annual Costs for an accurate comparison with the annualized benefits.

<b>Equivalent Uniform Annual Cost</b>	<b>Present Day Cost</b>	<b>Monetized Benefit (7%)</b>	<b>Monetized Benefit (3%)</b>
<b>St. Johns Heritage Parkway</b>	<b>\$ 49,811,000</b>	<b>\$ 49,846,000</b>	<b>\$ 49,831,370</b>
<b>Life Cycle Cost – Equivalent Uniform Annual Cost (EUAC)</b>	<b>\$ 2,492,300</b>	<b>\$ 4,703,730</b>	<b>\$ 3,349,940</b>

**CONCLUSION**

The table below summarizes how building the St. Johns Heritage Parkway provides an overall net benefit of \$6,643,500 annually at a seven percent discount over the cost of the project, which translates into a 2.41 benefit to cost ratio. If the discount rate is reduced to three percent the net benefit is \$4,730,243, which is a 2.41 benefit to cost ratio. The users of the alternative will receive twice as much benefit to the cost to construct the project. What should be noted is the St. Johns Heritage Parkway has substantial commitments already in place. The benefits compared to the costs to complete the project are substantially higher and summarized in the table below.

<b>Criteria</b>	<b>Benefits</b>	<b>Monetized Benefit (7%)</b>	<b>Monetized Benefit (3%)</b>
Livability	Vehicle Operating Cost Savings for Affected Population to Major Employment Centers	\$ 388,938	\$ 276,956
Economic Competitiveness	Travel Time Savings for Affected Population to Major employment Center	\$ 10,953,947	\$ 7,800,132
Safety	Accident Reduction for Affected Population to Major Employment Centers	\$ 4,098	\$ 2,918
State of Good Repair	Pavement maintenance Savings	\$ 0	\$ 0
Sustainability	Vehicle Operating Cost Savings for Affected Population to Major Employment Centers	\$ 247	\$ 176
	<b>Total Benefit</b>	<b>\$ 11,347,230</b>	<b>\$ 8,080,183</b>
<b>St. Johns Heritage Parkway</b>	<b>EUAC – Life Cycle Cost</b>	<b>\$ 4,703,730</b>	<b>\$ 3,349,940</b>
	<b>Benefit / Cost Ratio</b>	<b>2.41</b>	<b>2.41</b>

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**From:** Jake Wise [mailto:jwise@cegengineering.com]

**Sent:** Friday, March 20, 2015 5:53 PM

**To:** 'Ben Jefferies'; 'Lori Cardew'; 'Rochelle Lawandales'; Buchanan, Stuart; 'Jon Shepherd'

**Cc:** Jamie Mannon

**Subject:** South Brevard County Regional Stormwater Treatment, Flood Control, and Wildlife Corridors

Dear Mr. Jefferies:

The Sotile Canal is in southern Brevard County and flows east/west with direct discharges east into the Indian River Lagoon and west into the St. Johns River. The head of the canal varies at times and the canal currently free flows in both directions. The two receiving water body systems have been declared impaired by the state and based on the overwhelming support of Amendment 1 improvements to these systems are not only critical to their ecology but also the voting public. A new I-95 interchange just north of Micco Road and the Sotile Canal is fully funded and under design along with about four miles of the St. Johns Heritage Parkway that will connect west to Babcock Street and ultimately Micco Road to the south with a canal crossing. FDOT is funding the interchange and the roadway is a public/private partnership with the adjacent land owners. There are substantial requirements for wetland mitigation in this region from these two projects. There are approximately \$4 million for mitigation costs including dedicating conservation lands to public ownership. During the course of determining the best course for mitigation, other larger scale opportunities arose. With an additional \$5 million in funding from the State, we can expand upon this proposed mitigation plan to create more expansive conservation areas and interconnect via wildlife corridors tens of thousands of acres of conservation lands including EELS lands (Brevard County purchased conservation areas), the Sebastian Buffer Preserve, Stick Marsh, and other St. Johns River Water Management District lands. There are over 50,000 acres of such conservation lands in this region and they are separate by an estimated 10,000 acres of farm lands, disturbed open space, and proposed development tracts. These corridors could include public trails and linear parks for even more benefit to local residents, visitors, and increase eco-tourism in Brevard and Indian River Counties due to their close proximity and presence of the Sebastian Preserve.

In addition, along the Sotile Canal we have an opportunity to design large treatment ponds where none exists in current conditions. The canal is owned by Brevard County and some of the same private landowners previously referenced in the public/private partnership for the Parkway have adjacent property. These treatment ponds would divert the first flush of runoff from the canal which typically carries the highest majority of pollutants such as oils, metals and sediments into it and provide treatment. The velocity would be reduced significantly and typically via berming we can meander the storm pond to provide even more treatment than a typical storm pond. The ponds would also provide flood control relief for the area including a nearby subdivision called Deer Run that has historical flooding issues. The treatment ponds would be a significant improvement to the current direct discharge flows into the Indian and St. Johns Rivers. If in the case of a large storm event, the treatment pond would fill up and then the additional canal flow with less pollutants would by-pass the treatment pond and flow downstream.

With the imminent improvements for the new interchange and Parkway on the fast track, the need for this funding is now. With FDOT and the public/private partnership spending millions of dollars on preservation and conservation prior to the completion of the two roadway/interchange projects, the need for the funding is immediate in order to acquire

the corridors before development plans are completed and in order to determine the best conservation lands. Many of the largest land owners in the region have committed to providing wildlife corridors and conservation lands. The requested \$5 million dollars would be an investment into the region's future at a time when the lands are still available. With the interchange and roadway's current plans for mitigation, combined with the request for the additional \$5 million would provide a regionally significant upgrade maximizing the State's investment for public use, ecotourism, stormwater treatment, flood control, wildlife and vegetative preservation, and significantly improved stormwater treatment protecting the Indian River Lagoon and St. Johns River.

Environmental funding sources to support acquisition of lands, wetland and forested land creation, trailheads/parks/wildlife corridors, and water reclamation or treatment ponds, diversion and overflow pond sites can come from a variety of state resources. Primary among those are:

1. Amendment 1
2. Florida Communities Trust
3. Senate Bill 111
4. Florida Recreation Development Assistance Programs (FRDAP)
5. DEP Section 319 Program

Jake T. Wise, PE  
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