

SOUTH FLORIDA FREIGHT & PASSENGER



• RAIL ENHANCEMENT PROJECT

Phase 2 · New Northwood Connection

FINAL – December 4, 2013

Economic Analysis: Local and Regional Effects



U.S. Department of Transportation
Federal Railroad Administration



TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 CRA TAX BASE AND TIF REVENUE IMPACTS 3

 2.1 IMPORTANCE OF TIF REVENUES TO THE CRA 3

 2.2 NORTHWOOD CONNECTION PARCEL IMPACTS 4

 2.3 CRA PROPERTY TAX BASE IMPACTS 9

 2.4 CRA TIF REVENUE IMPACTS 9

 2.4.1 *Partial Takings Analysis* 10

 2.4.2 *Full Takings Analysis* 12

3.0 CRA JOBS AND REDEVELOPMENT EFFECTS..... 14

 3.1 JOBS ASSOCIATED WITH THREE RELOCATIONS 14

 3.2 TEMPORARY CONSTRUCTION EFFECTS FOR PHASES 1A AND 2 15

 3.3 JOBS ASSOCIATED WITH REDEVELOPMENT 16

 3.4 INCREASE IN PROPERTY VALUE FROM REDEVELOPMENT 17

4.0 REGIONAL ANALYSIS 17

 4.1 SHIPPER BENEFITS..... 19

 4.2 SAVINGS ASSOCIATED WITH REMOVING TRUCKS FROM ROADS 22

 4.2.1 *Congestion Costs Avoided*..... 22

 4.2.2 *Emissions*..... 22

 4.2.3 *Safety* 23

 4.2.4 *Pavement Cost Savings*..... 23

 4.3 RESIDUAL VALUE 23

 4.4 COSTS 23

 4.4.1 *Capital Costs* 23

 4.4.2 *Operating and Maintenance Costs* 24

 4.5 SUMMARY OF REGIONAL PROJECT BENEFITS 24

5.0 SUMMARY 27

APPENDIX A: NORTHWOOD CONCEPT PLAN 31

1.0 Introduction

The Florida Department of Transportation (FDOT), in coordination with the Federal Railroad Administration (FRA), is conducting the South Florida Freight and Passenger Rail Enhancement Study to evaluate a proposed single track rail connection (the Northwood Connection) on a new alignment between the existing South Florida Rail Corridor (SFRC) and Florida East Coast (FEC) Railway. The existing Northwood Connection traverses in a northwest/southeast orientation between the two rail lines. This project would provide freight connectivity between the SFRC and FEC by providing a new connection in the northeast/southwest orientation.

The New Northwood Connection is Phase 2 of a series of three independent projects (Phases 1A, 1B, and 2) that are being studied concurrently to enhance freight connectivity between the existing SFRC and the FEC Railway to accommodate existing freight traffic and the projected growth in freight rail operations following the expansion of the Panama Canal and freight intermodal improvements at the Port of Palm Beach, Port Everglades, and PortMiami. The three phases include:

- Phase 1A - Rehabilitate Existing Northwood Connection, Financial Project Number: 434948-1; ETDM Number: N/A; Palm Beach County, Florida
- Phase 1B - IRIS Northeast Connection, Financial Project Number: 433514-1; ETDM Number: N/A; Miami-Dade County, Florida
- Phase 2 - New Northwood Connection, Financial Project Number: 434948-2; ETDM: 14093; Palm Beach County, Florida

Phase 1A of the project involves the rehabilitation of the existing Northwood Connection and would be maintained after Phase 2 is implemented. With both Phases 1A and 2 in place, direct SFRC and FEC connections will be provided for each potential integrated freight movement. A draft concept plan showing Phase 2 and the existing Northwood Connection is provided as Appendix A.

The Northwood Connection was also studied previously as part of the FEC Amtrak Passenger Rail Study Environmental Assessment (2010), which documents the environmental analysis and public involvement conducted for the Northwood Connection alignment. The new alignment for the Northwood Connection has not changed since 2010; however, through coordination with the City of West Palm Beach as part of the Tri-Rail Coastal Link project (formerly designated South Florida East Coast Corridor (SFECC)), the track configuration was reduced to minimize property impacts and effects to environmental resources.

As part of the South Florida Freight and Passenger Rail Enhancement Study project, AECOM has performed an economic analysis of the Northwood Connection between the SFRC and the FEC Railway on the Northwood/Pleasant City Community Redevelopment Area (CRA). The economic impacts analyzed include the potential change to the Northwood CRA property tax base and Tax Increment Financing (TIF) revenues. The Northwood Connection would require property acquisitions within the Northwood CRA, which would remove these properties (or parts of these properties) from the property tax rolls, and thus potentially reduce the TIF revenues collected by the CRA, particularly in the near-term. The TIF revenues

are the primary funding source for the Northwood CRA; therefore, they are an essential component for operating the CRA, paying debt service on existing debt, and investing in capital improvements for the district.

The Northwood Connection Economic Analysis is designed to evaluate the significance of the economic impacts associated with the project for the CRA, City of West Palm Beach (City), Palm Beach County (County), and the larger region. The first part of the analysis focuses on the direct impacts of the property takings on the CRA property tax base and forecasted CRA TIF revenues through FY 2018. The analysis includes:

- Discussion of the importance of TIF revenues to the CRA,
- Estimate of the Northwood Connection parcel impacts on the CRA property tax base,
- Discussion of the significance of the tax base impacts, and
- Estimate of the change in forecasted CRA TIF revenues through FY 2018.

The second part of the analysis focuses on the potential effects of the Northwood Connection property acquisitions on the CRA, City, and County in terms of jobs and redevelopment opportunities. These effects include potential job losses associated with business relocations, temporary construction jobs created or sustained due to the construction of Phase 1A and Phase 2 in the CRA, and new jobs and property values associated with redevelopment of some of the parcels required for the Northwood Connection.

In addition, the economic analysis considers the regional and local benefits associated with the implementation of the three phases of projects to enhance freight connectivity between the existing SFRC and the FEC Railway. The proposed Northwood and IRIS¹ rail connection improvement projects will enhance freight and passenger rail mobility in South Florida and improve statewide freight connectivity to central Florida, northern Florida, and the Atlantic Seaboard. The project will also improve grade-crossing devices and signal systems within the limits of the proposed improvements and result in enhanced grade crossing safety. The ability to shift freight between the two corridors is anticipated to result in decreased railroad operating costs and increased freight mobility.

While the South Florida Freight and Passenger Rail Enhancement project would facilitate future passenger rail service by providing connections between the SFRC and the FEC, the project does not involve the development of a station or passenger rail service. The Tri-Rail Coastal Link Study² proposes reintroducing passenger service along an 85-mile stretch of the FEC Railway corridor between Jupiter and Miami.

This analysis updates the economic analysis prepared by AECOM in March 2011. The previous analysis included redevelopment impacts associated with a passenger rail station, while this analysis considers the TIF tax base and revenue impacts associated with the use of the Northwood Connection by freight rail only. In addition, the taxable values for the entire CRA district and the Northwood Connection acquired parcels are updated with 2013 preliminary data³ from the Palm Beach County Property Appraiser's Office.

¹ The IRIS connection improvement is a related project located in Miami-Dade County.

² The Tri-Rail Coastal Link Study can be accessed at <http://www.Tri-RailCoastalLinkStudy.com>

³ Tax assessments estimated by the Property Appraiser's Office as of October 11, 2013. Values are finalized as of November 1.

As of October 2013, the South Florida Freight and Passenger Rail Enhancement study is ongoing in compliance with federal and state regulations that require a complete engineering and environmental analysis in compliance with the National Environmental Policy Act (known as NEPA). This analysis is underway and is anticipated to be submitted to FRA for review in December 2013. During the NEPA study, the Northwood Connection will continue to be analyzed and refined to avoid and minimize impacts to the extent feasible. Therefore, the property impacts shown in this memorandum are subject to refinement, although only minimal changes are anticipated due to the extensive previous studies.

2.0 CRA Tax Base and TIF Revenue Impacts

2.1 Importance of TIF Revenues to the CRA

The TIF revenues are the primary funding source for the Northwood CRA to meet its operating, debt service, and capital project obligations. However, due to the real estate market downturn in South Florida, the CRA taxable property values have declined approximately 82% since 2008.⁴ This decline has translated into a large reduction in the revenues collected by the CRA. The current Strategic Finance Plan for the Northwood CRA indicates that the agency anticipates that it will be unable to maintain current operations and meet debt service obligations out of its annual revenues (see Table 1). These deficits will need to be addressed through cash reserve funds or reductions in operating expenses.

Table 1: Northwood CRA Strategic Finance Plan: Sources and Uses of Funds

	FY 14 (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
Sources of Funds					
Carryforward FY13 Project Appropriations	\$ 3,497,942				
TIF	\$ 2,369,101	\$ 2,372,778	\$ 2,410,466	\$ 2,483,477	\$ 2,557,949
Miscellaneous	\$ 29,200	\$ 20,000	\$ 18,000	\$ 6,000	\$ 16,000
Total	\$ 5,896,243	\$ 2,392,778	\$ 2,428,466	\$ 2,499,477	\$ 2,573,949
Uses of Funds					
Operations	\$ 968,148	\$ 979,549	\$ 991,141	\$ 1,002,976	\$ 1,015,019
Debt Service	\$ 1,724,244	\$ 1,726,434	\$ 1,722,044	\$ 1,724,949	\$ 1,726,216
Target Area Initiatives (capital)	\$ 1,118,851				
Total	\$ 3,811,243	\$ 2,705,983	\$ 2,713,185	\$ 2,727,925	\$ 2,741,235
<i>Reserve for Target Area Initiatives</i>	<i>\$ 2,085,000</i>				
Surplus/Deficit	\$ -	\$ (313,205)	\$ (284,719)	\$ (228,448)	\$ (167,286)

Source: Northwood/Pleasant City CRA, Strategic Finance Plan, Adopted September 3, 2013

The reserve shown in Table 1 is restricted to capital investments in the district and cannot be used for operating expenses. In addition to the reserve fund shown in the table, the Northwood CRA has a debt service reserve fund that had approximately \$1.7 million and a redevelopment trust fund with

⁴ West Palm Beach CRA, *Annual Report for Year Ending September 30, 2012*, March 2013, p.41.

approximately \$4.9 million at the end of FY 2012.⁵ Debt service reserve funds generally are restricted and are used to make the last payment upon maturity of the bonds; while, the redevelopment trust fund is generally available for operating shortfalls. However, the continued use of these funds to cover annual operating and debt service payments would likely negatively impact the CRA's bond rating due to the agency's continued inability to meet annual expenses with annual revenues. As a result, the CRA may instead reduce agency operating expenses in the near-term until property values and the resulting TIF revenues recover. In fact, the CRA is currently soliciting offers to privatize the agency's operation, in hopes of reducing operating expenses.

Given the forecasted operating deficits shown in Table 1, the CRA has concerns about the potential impact of removing the parcels required for the Northwood Connection from their tax rolls, particularly in the near-term. As property values in the district recover, the deficits will decline and eventually become surpluses; however, the CRA must find a way to fund its operations and meet its debt service obligations until this rebound in the real estate market and TIF revenues occurs.

2.2 Northwood Connection Parcel Impacts

The Northwood Connection between the FEC Railway and the SFRC passes through an estimated 15 parcels (11 involved property owners) in the Northwood CRA. The property impacts are based on the typical section and conceptual alignment as of September 2013. Opportunities to minimize parcel impacts will be analyzed further as part of the NEPA study and subsequently, during the design phase when a survey is available to refine the design. However, minimal changes are anticipated due to the extensive planning studies, the need to avoid sensitive cultural resources in the study area, and the engineering constraints within this short segment.

Based on the conceptual alignment, right-of-way (ROW) acquisition for up to 15 parcels will be needed to construct the proposed Phase 2 improvements (see Figure 1 and Appendix A). For the purposes of this analysis, the anticipated relocations were estimated based on a review of the preliminary concept plans. If the main business structure was impacted by the proposed alignment and the business could not continue normal operations as a result of the loss of the structure, it was assumed to be a relocation. These relocation estimates will require further review by FDOT right-of-way to determine actual relocations during the NEPA study. Using this methodology, two business relocations are anticipated and assumed in the partial acquisition scenario detailed in Section 2.4.1. An additional two businesses (up to four total relocations) may be required as ancillary buildings are impacted by the proposed alignment. This worst-case scenario is reflected in the full takings scenario described in Section 2.4.2.

To calculate the potential impacts on the Northwood CRA tax base and future TIF revenues, the property/parcel assessment data, along with the polygon shapefile, were downloaded from the Palm Beach County Enterprise GIS Data Catalog.⁶ The 2013 preliminary assessment data is available separately for parcels and condo properties; therefore, both were collected and analyzed. The parcels shapefile downloaded from the same source was matched with the assessment data using the Property Identification Numbers.

⁵ West Palm Beach CRA, *Annual Report for Year Ending September 30, 2012*, March 2013, pp.58 and 70.

⁶ See: <http://www.pbcgov.com/iss/itoperations/cwgis/GISdatasearch/>

The parcel data downloaded included a number of values pertaining to each property location. Among the values were: assessed value, land value, improvement value, total value, and total taxable value. The assessed value is the value placed on a property before any exemptions are deducted but after the property tax cap is factored; assessed value less exemptions equals total taxable value. Land value is the estimated market value of the land, and improvement value is the value placed on a building. Total value is the sum of the land value and improvement value, and the total taxable value is the total value (also equal to the assessed value) less exemptions.⁷

After matching the parcels to the correct assessed values, the analysis of the parcel acquisition began with calculating the percentage of each parcel that was affected. There are a total of 15 affected parcels, with impacts ranging from taking a corner of vacant land to impacting structures. Of the 15 affected parcels, three of the parcels are vacant. It is estimated that up to four businesses may need to relocate as a result of building/storage space impacts, but the remaining parcels are expected to be minimally impacted.⁸ As a result, two analyses were conducted to investigate the range of these impacts on the tax base and TIF revenues, with partial takings (only the necessary portion of a property was acquired) on the low end and full takings (the entirety of a parcel was acquired) on the high end. While it is not anticipated that full takings of each of the impacted parcels will occur, this scenario represents the worst-case scenario to determine the anticipated range of impacts to the CRA tax base.

The total preliminary 2013 taxable value of the impacted parcels is \$4,387,605; however, not all impacted parcels will require full takes. As part of the partial takings analysis, the total acreage and the affected portion of each parcel were provided, so the percentage of each parcel impacted was directly calculated. This percentage of affected property was then used to estimate the new land and total values for each parcel. For parcels where only land is required, new land values were calculated based on the assessed land value multiplied by the percentage of the parcel remaining. The values of improvements on the parcels were kept in their entirety if the notes⁹ indicated that the building would not be affected by the ROW acquisitions. If, however, the building (whether main, ancillary, or storage) is affected, the entire improvement value was zeroed out because it is assumed that the whole building would need to come down if a portion is needed for the project. Further, if the notes indicated that a business establishment would potentially relocate and if the main building was impacted by the ROW acquisition, the land value was completely eliminated in addition to the building because it was assumed to require a full taking of the parcel.¹⁰ However, for those parcels where only ancillary or storage improvements were impacted, the value of the improvements was removed along with the portion of the land impacted by the taking.¹¹ The new land and new improvement values were totaled to equal the new total taxable value for the partial taking analysis.

⁷ For more terminology, see the glossary: <http://www.pbcgov.com/papa/gloss.htm>

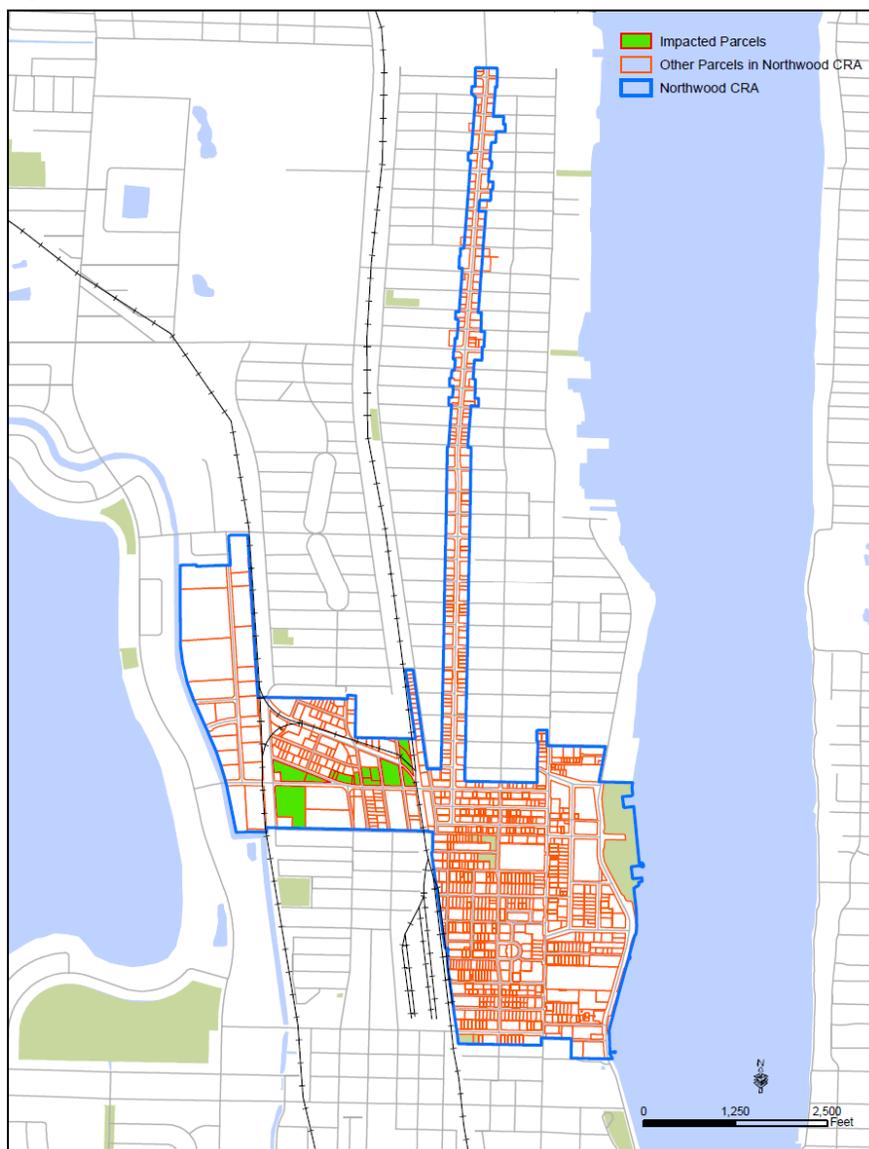
⁸ Analysis provided by CH2M Hill

⁹ Provided in the acquisitions list from CH2M Hill

¹⁰ Parcels N4 and N9 shown in Table 2

¹¹ Parcels N12 and N20 shown in Table 2

Figure 1: Map of Northwood CRA and Impacted Parcels



Source: AECOM

It is important to note these ROW acquisition estimates are not applicable to disclosing property impacts to property owners, as a formal FDOT ROW review will ascertain property impacts and anticipated relocations. The FDOT ROW estimates will be completed following additional environmental and engineering evaluations. Any ROW acquisition required for the project would be conducted by FDOT in compliance with the *Uniform Relocation Assistance Act*. The *FDOT Right-of-Way Acquisition Handbook*¹² provides a summary of this process. The ROW information in this memorandum is used to determine the range of economic effects of the proposed project. Additionally, the assessed values documented in this memorandum are based on property appraiser information used to calculate CRA revenues and are not consistent with real estate market value.

¹² The FDOT Right-of-Way Acquisition Handbook can be accessed at <http://www.dot.state.fl.us/rightofway/Documents.shtm>

In 11 of the 15 parcels, the total taxable value was equal to the total assessed value. However, in four instances,¹³ the total taxable value was less than the total assessed value (the sum of the land value and the improvement value) due to exemptions. For these four parcels, noted by new total taxable values in pink in Table 2 below, the total taxable value (the lesser of the two total values) was reduced by the proportion¹⁴ of the parcel acquired for ROW needs. In three of the four cases¹⁵ there were no improvements on the site, so this methodology was straightforward. However, in the fourth case¹⁶ there was an improvement on the site that would not be directly impacted by the ROW acquisition. As a result, an alternate methodology was used to factor the total taxable value. Because the exemption is taken off of the total assessed value of the land and improvement, the total taxable value first had to be divided into land and improvement taxable values. The land taxable value is assumed to be the same share of land assessed value to total assessed value. Then, the new land taxable value was reduced by the proportion of the parcel acquired for ROW to give the value of the land remaining. Similarly, because the improvement was not impacted, the improvement taxable value is assumed to be the same share of improvement assessed value to total assessed value. The remaining taxable values of the land and the improvement were totaled to result in the new total taxable value of the parcel.

In all, the total remaining taxable value of the impacted parcels for the partial takings analysis is \$2,708,250, which is a loss in taxable value of \$1,679,355 for the Northwood CRA or approximately 38% of the total taxable value of the 15 affected parcels. For details on the affected parcels, see Table 2.

¹³ Parcels N1, N10, N13, and N14 shown in Table 2 and Appendix A

¹⁴ Calculated as the estimated area of the parcel acquired for ROW divided by the total parcel area

¹⁵ Parcels N1, N13, and N14 shown in Table 2 and Appendix A

¹⁶ Parcel N10 shown in Table 2 and Appendix A

Table 2: Affected Parcels and Assessed and Taxable Values

Parcel No.	Parcel Address / Location	Assessed Value	Land Value	Improvement Value	Total Value (Land Value + Improvement Value)	Total Taxable Value (Total Value – Exemptions)	New Land Value (partial land left after impact)	New Improvement Value (Buildings impacted)	New Total Value	New Total Taxable Value
N1	Corner of 25th St. & Windsor Ave.	\$670,557	\$1,088,645	\$0	\$1,088,645	\$670,557	\$1,023,806	\$0	\$1,023,806	\$630,619
N3	1101 25th St.	\$538,474	\$473,790	\$64,684	\$538,474	\$538,474	\$444,582	\$64,684	\$509,266	\$509,266
N4	955 25th St.	\$220,176	\$117,600	\$102,576	\$220,176	\$220,176	\$0	\$0	\$0	\$0
N5	921 25th Ct.	\$34,500	\$34,500	\$0	\$34,500	\$34,500	\$32,976	\$0	\$32,976	\$32,976
N6	911 25th Ct.	\$34,500	\$34,500	\$0	\$34,500	\$34,500	\$26,916	\$0	\$26,916	\$26,916
N7	915 25th St.	\$132,480	\$132,480	\$0	\$132,480	\$132,480	\$74,269	\$0	\$74,269	\$74,269
N8	907 25th St.	\$9,653	\$9,653	\$0	\$9,653	\$9,653	\$5,684	\$0	\$5,684	\$5,684
N9	901 25th St.	\$140,863	\$81,000	\$59,863	\$140,863	\$140,863	\$0	\$0	\$0	\$0
N10	805 25th St.	\$181,500	\$116,286	\$72,411	\$188,697	\$181,500	\$79,499	\$72,411	\$151,910	\$146,116
N11	2616 Tamarind Ave.	\$269,196	\$104,400	\$164,796	\$269,196	\$269,196	\$100,790	\$164,796	\$265,586	\$265,586
N12	2617 Division Ave.	\$327,820	\$125,496	\$202,324	\$327,820	\$327,820	\$96,366	\$0	\$96,366	\$96,366
N13	2706 Rosemary Ave.	\$189,572	\$210,888	\$0	\$210,888	\$189,572	\$162,189	\$0	\$162,189	\$145,796
N14	2727 Rosemary Ave.	\$127,184	\$142,266	\$0	\$142,266	\$127,184	\$102,461	\$0	\$102,461	\$91,598
N15	713 25th St.	\$300,267	\$155,664	\$144,603	\$300,267	\$300,267	\$155,246	\$144,603	\$299,849	\$299,849
N20	715 25th St.	\$1,210,863	\$459,360	\$751,503	\$1,210,863	\$1,210,863	\$383,210	\$0	\$383,210	\$383,210
					\$4,849,288	\$4,387,605	\$2,687,993			\$2,708,250
									Loss in TAX VAL	\$1,679,355

 Assessed Value Calculated proportionately based on total taxable value
 Building/Improvement impacted
 Total Value and Total Taxable Value are not equal

Source: AECOM analysis

2.3 CRA Property Tax Base Impacts

To estimate the significance of the Northwood Connection property acquisitions on the Northwood CRA property tax base, the loss in taxable value associated with the takings was compared to the total taxable value of all properties within the Northwood CRA. The total taxable value of the Northwood CRA properties in 2013 was approximately \$276.94 million and the total increment tax value of all properties (total property value less base year value) was approximately \$190.00 million.¹⁷

To verify the total taxable property value of all parcels within the CRA, AECOM used Palm Beach County property/parcel assessment data to identify the properties (including condominiums) within the CRA and their total taxable value. AECOM then coordinated with the City of West Palm Beach Finance Office to obtain the individual parcel IDs and values included in the CRA data from the Palm Beach County Property Appraiser's office. The parcel IDs and values from both the AECOM list and the City's list were compared and reconciled to confirm the total taxable value of \$276.94 million for the properties within the Northwood CRA.

The analysis considered in this technical memorandum evaluates the impacts associated with two scenarios in order to provide a range of potential CRA tax base impacts: 1) partial takings of some properties and 2) full takings of all properties impacted (even if only a small corner of the property is required). Table 3 shows the loss in taxable value associated with the takings as a percent of the Northwood CRA's increment taxable value for the two takings scenarios. As seen in the table, the impact of the takings on the tax base is relatively minor, between 0.88% and 2.31%. However, given the projected operating deficits forecasted for the CRA between FY 2015 and FY 2018, these impacts may intensify the loss of TIF revenues. The TIF revenue impacts are discussed in detail in Section 2.4.

Table 3: Significance of the Northwood Connection ROW Acquisitions on the Northwood CRA Increment Tax Base

	Loss in Tax Base (2013)	Total CRA Tax Base ¹ (2013)	Loss as a % of Total CRA Tax Base
Some Partial Takings	\$ 1,679,355	\$ 190,004,525	0.88%
All Full Takings	\$ 4,387,605	\$ 190,004,525	2.31%

¹ FY2014 Total Taxable Value less Base Year Value

Source: AECOM analysis

2.4 CRA TIF Revenue Impacts

This analysis evaluates the potential Northwood CRA TIF revenue impacts associated with the partial takings (low end impact) and full takings scenarios (high end impact) for the Northwood Connection. The revenue impacts are estimated by calculating the new increment value (total

¹⁷ West Palm Beach CRA, *Strategic Finance Plan for the Northwood/Pleasant City CRA District*, Adopted September 3, 2013, p.37.

CRA tax base less the base year tax value) for each scenario and then multiplying the increment value by the appropriate millage rate for the City of West Palm Beach and Palm Beach County. The gross tax revenues are then reduced by 5% to account for the statutory city and county shares of the tax increment.

The Northwood CRA TIF revenues are estimated for FY 2014 through FY 2018 so that the revenue impacts can be compared to the forecasted revenues contained in the Northwood CRA Strategic Finance Plan. The growth in the CRA's taxable property values are estimated using the forecasted growth assumed in the Northwood CRA's Strategic Finance Plan as well as a low and high growth scenario based on AECOM's previous Northwood Connection Economic Analysis, as shown below in Table 4.¹⁸ The forecasted growth in taxable values is applied to the CRA's tax base as well as those properties (or parts of properties) acquired for the Northwood Connection.

Table 4: Northwood CRA Taxable Property Value Growth Assumptions

	Property Value Growth Rate FY 15	Property Value Growth Rate FY 16	Property Value Growth Rate FY 17	Property Value Growth Rate FY 18
CRA Strategic Finance Plan	0.12%	1.09%	2.09%	2.09%
AECOM Low	0.00%	2.00%	2.00%	2.00%
AECOM High	2.00%	4.00%	6.00%	6.00%

Source: Northwood CRA Strategic Finance Plan and AECOM

The sections below summarize the TIF revenue impacts associated with the Northwood Connection's partial takings and full takings analyses.

2.4.1 Partial Takings Analysis

There are a total of 15 affected parcels, with impacts ranging from taking a corner of vacant land to impacting structures. It is estimated that three businesses will need to relocate as a result of building/storage space impacts, but the remaining parcels are expected to be minimally impacted. The impacted taxable values associated with these partial takings are described in detail in Section 2.2.

The inclusion of partial takes for those parcels minimally impacted by the Northwood Connection ROW results in a Northwood CRA taxable value loss of approximately \$1.68 million in 2013. These properties are assumed to be purchased by the project in 2015. The removal of these properties from the CRA tax base would result in a reduction in CRA TIF revenues beginning in 2015. Table 5 below summarizes the estimated TIF revenue impacts associated with the partial takings analysis.

¹⁸ The AECOM low and high growth scenario rates were developed for the previous economic analysis and were based on local and national trends and vetted with the City of West Palm Beach and the CRA.

Table 5: Northwood CRA TIF Revenues with Partial Takings

	FY 14 (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
Existing Taxable Value (CRA Growth)	276,594,283	276,937,801	279,959,679	285,813,873	291,785,150
AECOM Low Growth	276,594,283	276,594,283	282,126,169	287,768,692	293,524,066
AECOM High Growth	276,594,283	282,126,169	293,411,215	311,015,888	329,676,842
Loss from Northwood ROW Takings (CRA Growth)	-	(1,681,441)	(1,699,788)	(1,735,332)	(1,771,587)
AECOM Low Growth	-	(1,679,355)	(1,712,942)	(1,747,201)	(1,782,145)
AECOM High Growth	-	(1,712,942)	(1,781,460)	(1,888,347)	(2,001,648)
New Construction (Misc.)	343,518	250,000	250,000	250,000	250,000
Total Taxable Value (CRA Growth)					
	276,937,801	275,506,360	278,509,891	284,328,541	290,263,563
AECOM Low Growth	276,937,801	275,164,928	280,663,227	286,271,491	291,991,921
AECOM High Growth	276,937,801	280,663,227	291,879,756	309,377,541	327,925,193
Base Year Value					
	86,933,276	86,933,276	86,933,276	86,933,276	86,933,276
Increment Value (CRA Growth)					
	190,004,525	188,573,084	191,576,615	197,395,265	203,330,287
AECOM Low Growth	190,004,525	188,231,652	193,729,951	199,338,215	205,058,645
AECOM High Growth	190,004,525	193,729,951	204,946,480	222,444,265	240,991,917
Millage Rate City of West Palm Beach					
	8.3465	8.3465	8.3465	8.3465	8.3465
Millage Rate Palm Beach County					
	4.7815	4.7815	4.7815	4.7815	4.7815
Gross Tax Value (CRA Growth)					
	2,494,379	2,475,587	2,515,018	2,591,405	2,669,320
AECOM Low Growth	2,494,379	2,471,105	2,543,287	2,616,912	2,692,010
AECOM High Growth	2,494,379	2,543,287	2,690,537	2,920,248	3,163,742
Statutory Reduction	0.95	0.95	0.95	0.95	0.95
Total CRA Incremental Revenue (CRA Growth)					
	2,369,660	2,351,808	2,389,267	2,461,835	2,535,854
AECOM Low Growth	2,369,660	2,347,550	2,416,122	2,486,066	2,557,409
AECOM High Growth	2,369,660	2,416,122	2,556,011	2,774,236	3,005,555

Source: AECOM analysis

Table 6 summarizes the differences between the TIF revenues forecasted in the Northwood CRA Strategic Finance Plan and the partial takings analysis, which total approximately -\$20,000 in each year for the CRA growth scenario, or less than 1% of total CRA TIF revenues in each year. Negative values in Table 6 indicate that the CRA forecasted revenues are greater than the partial takings analysis. As shown in the table, the differences between the CRA forecast and the partial takings analysis are small enough that they are highly sensitive to changes in the assumed future growth in taxable value. The AECOM low taxable value growth scenario demonstrates that a 2% assumed growth rate in comparison to the CRA's 1.09% in FY 2016 is enough to overcome the

loss in revenues associated with the partial takings. By FY 2018, the AECOM low taxable value growth scenario results in the partial analysis falling behind the CRA forecasted revenues due to the slight difference in the growth rate (2.00% vs. 2.09%). As a result, the CRA's TIF revenues are much more sensitive to changes in anticipated taxable value growth than they are to changes associated with the acquisition of properties for the Northwood Connection ROW.

Table 6: Difference in TIF Revenues between the CRA Forecast and Partial Takings Analysis

	FY 14* (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
<i>Difference in TIF Revenues (CRA Growth)</i>	560	(20,970)	(21,199)	(21,642)	(22,095)
<i>AECOM Low Growth</i>	560	(25,228)	5,656	2,589	(539)
<i>AECOM High Growth</i>	560	43,344	145,545	290,759	447,606
<i>Difference as a % of Total TIF Revenues (CRA Growth)</i>	0.02%	-0.89%	-0.89%	-0.88%	-0.87%
<i>AECOM Low Growth</i>	0.02%	-1.07%	0.23%	0.10%	-0.02%
<i>AECOM High Growth</i>	0.02%	1.79%	5.69%	10.48%	14.89%

Source: AECOM analysis

*The difference in FY 2014 is due to City Finance suggestion that the City and County total taxable values should be the same. In the Strategic Finance Plan they are slightly different in FY 2014 only. As a result of this change, the FY 2014 taxable values for all properties in the CRA shown above are slightly higher than those in the Strategic Finance Plan.

2.4.2 Full Takings Analysis

As in the partial takings analysis, there are a total of 15 affected parcels, with impacts ranging from taking a corner of vacant land to impacting structures. As an illustration of the upper-bound of the property acquisitions, the impact of taking the full value of all affected properties was estimated for this scenario.

The inclusion of full takes for parcels that are impacted to any degree by the Northwood Connection ROW reduced the taxable value within the Northwood CRA by approximately \$4.39 million in 2013. These properties are assumed to be purchased by the project in 2015. The removal of this property value from the CRA tax base would result in a reduction to CRA TIF revenues beginning in 2015. Table 7 below summarizes the estimated TIF revenue impacts associated with the full takings analysis.

Table 8 summarizes the differences between the TIF revenues forecasted in the Northwood CRA Strategic Financial Plan and the full takings analysis, which total approximately -\$55,000 in each year for the CRA growth scenario, or less than 2.5% of total CRA TIF revenues in each year. Negative values in Table 8 indicate that the CRA forecasted revenues are greater than the full takings analysis. As shown in the table, the AECOM low taxable value growth scenario results in the full analysis falling behind the CRA forecasted revenues throughout the analysis period. As a result, more moderate changes in the assumed taxable value growth would be needed to overcome the TIF revenue loss with the full takings – somewhere in between the AECOM low and AECOM high growth scenarios (2.00% to 6.00%).

Table 7: Northwood CRA TIF Revenues with Full Takings

	FY 14 (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
Existing Taxable Value (CRA Growth)	276,594,283	276,937,801	279,959,679	285,813,873	291,785,150
AECOM Low Growth	276,594,283	276,594,283	282,126,169	287,768,692	293,524,066
AECOM High Growth	276,594,283	282,126,169	293,411,215	311,015,888	329,676,842
Loss from Northwood ROW Takings (CRA Growth)	-	(4,393,054)	(4,440,990)	(4,533,855)	(4,628,577)
AECOM Low Growth	-	(4,387,605)	(4,475,357)	(4,564,864)	(4,656,162)
AECOM High Growth	-	(4,475,357)	(4,654,371)	(4,933,634)	(5,229,652)
New Construction (Misc.)	343,518	250,000	250,000	250,000	250,000
Total Taxable Value (CRA Growth)					
	276,937,801	272,794,747	275,768,689	281,530,018	287,406,573
AECOM Low Growth	276,937,801	272,456,678	277,900,812	283,453,828	289,117,904
AECOM High Growth	276,937,801	277,900,812	289,006,844	306,332,255	324,697,190
Base Year Value					
	86,933,276	86,933,276	86,933,276	86,933,276	86,933,276
Increment Value (CRA Growth)					
	190,004,525	185,861,471	188,835,413	194,596,742	200,473,297
AECOM Low Growth	190,004,525	185,523,402	190,967,536	196,520,552	202,184,628
AECOM High Growth	190,004,525	190,967,536	202,073,568	219,398,979	237,763,914
Millage Rate City of West Palm Beach					
	8.3465	8.3465	8.3465	8.3465	8.3465
Millage Rate Palm Beach County					
	4.7815	4.7815	4.7815	4.7815	4.7815
Gross Tax Value (CRA Growth)					
	2,494,379	2,439,989	2,479,031	2,554,666	2,631,813
AECOM Low Growth	2,494,379	2,435,551	2,507,022	2,579,922	2,654,280
AECOM High Growth	2,494,379	2,507,022	2,652,822	2,880,270	3,121,365
Statutory Reduction	0.95	0.95	0.95	0.95	0.95
Total CRA Incremental Revenue (CRA Growth)					
	2,369,660	2,317,990	2,355,080	2,426,933	2,500,223
AECOM Low Growth	2,369,660	2,313,774	2,381,671	2,450,926	2,521,566
AECOM High Growth	2,369,660	2,381,671	2,520,181	2,736,256	2,965,296

Source: AECOM analysis

Table 8: Difference in TIF Revenues between the CRA Forecast and Full Takings Analysis

	FY 14* (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
<i>Difference in TIF Revenues (CRA Growth)</i>	560	(54,788)	(55,386)	(56,544)	(57,726)
<i>AECOM Low Growth</i>	560	(59,005)	(28,795)	(32,551)	(36,383)
<i>AECOM High Growth</i>	560	8,892	109,715	252,779	407,348
<i>Difference as a % of Total TIF Revenues (CRA Growth)</i>	0.02%	-2.36%	-2.35%	-2.33%	-2.31%
<i>AECOM Low Growth</i>	0.02%	-2.55%	-1.21%	-1.33%	-1.44%
<i>AECOM High Growth</i>	0.02%	0.37%	4.35%	9.24%	13.74%

Source: AECOM analysis

*The difference in FY 2014 is due to City Finance suggestion that the City and County total taxable values should be the same. In the Strategic Finance Plan they are slightly different in FY 2014 only. As a result of this change, the FY 2014 taxable values for all properties in the CRA shown above are slightly higher than those in the Strategic Finance Plan.

3.0 CRA Jobs and Redevelopment Effects

The construction of the Northwood Connection may result in four quantifiable, and potentially offsetting, effects on jobs and redevelopment opportunities for the CRA. These four effects include:

- **Jobs Associated with Three Relocations** – the potential loss of jobs from the businesses on parcels acquired for ROW¹⁹
- **Temporary Construction Jobs for Phases 1A and 2** – the construction of the projects would result in new temporary jobs locally, as the construction would occur within the CRA
- **Jobs Associated with Redevelopment** – the potential repackaging and redevelopment of parcels could attract new businesses and result in new jobs for the CRA
- **Increase in Property Value from Redevelopment** – the potential repackaging and redevelopment of parcels could result in the construction of new industrial facilities, increasing property values and adding to the CRA's tax base

The estimation of the four CRA effects is described in the sections below.

3.1 Jobs Associated with Three Relocations

The three parcels where businesses are most affected by ROW acquisitions are N4, N9, and N20.²⁰ These businesses are likely to relocate due to the impacts to the main or ancillary buildings on the property and could choose to relocate within the CRA, City, or County, if there is an available parcel appropriate for the business needs, or leave the CRA, City, or County

¹⁹Up to four relocations (full parcel acquisitions) are anticipated for the project, and two were assumed in the partial acquisitions analysis. Assuming three falls within the likely range and provides an average estimated effect on employment lost in the CRA from the full acquisition of parcels N4, N9, and N20

²⁰For parcel numbers and locations, see Appendix 1

altogether. As a result, the CRA could potentially lose all or some of the jobs associated with these businesses.

In order to estimate the total employment associated with these relocations, a business database (manta.com) was used. Manta.com provides an estimated range of employees at a location, among other business data. Using the midpoint of the reported range of employees for each of the three businesses identified for potential relocation, the total employment of each was estimated. In total, 44 employees were assumed at the three businesses, as shown in Table 9. Therefore, up to an estimated 44 employees could be lost to the CRA. However, the CRA could consider redevelopment incentives to encourage the affected property owners to relocate within the CRA and/or the City and County, thus retaining this employment.

Table 9: Estimated Employees at Three Potential Business Relocations

Parcel	Company	Estimated Employees
N4	Preferred Chemicals	2
N9	Prime Time Grocery and Deli Store	7
N20	MarJam Supply Co (Lainhart & Potter)	35
Total		44

Source: Manta.com

3.2 Temporary Construction Effects for Phases 1A and 2

Construction of Phases 1A and 2 of the South Florida Freight and Passenger Rail Enhancement project represents a capital investment in Palm Beach County.²¹ This construction spending will increase and sustain employment and earnings in the County and the region for the duration of the construction period. Construction and professional services expenditures for Phases 1A and 2 are estimated to support or create 355 total jobs of one-year's duration in the County.²² A job for one person that lasts three years would be three person job-years. These job-years are temporary; they last for the duration of the construction period only, ramping up and down with the construction and production cycle.

Phases 1A and 2 of the project occur in Palm Beach County; as a result, the jobs will occur within the CRA, City, and County. Direct employment is estimated to support 219 job-years located within the CRA, City, and County and indirect and induced employment resulting in 136 job-years for the County. The total employment effect of Phases 1A and 2 of the project for County establishments is shown in Table 10 below.

²¹ Phase 1B of the project occurs within Miami-Dade County; as a result, the impacts associated with this phase are not included in the analysis.

²² The economic effects from the construction of Phases 1A and 2 for the project are estimated for Palm Beach County based on the construction and professional services expenditures and the construction and professional services RIMS II multipliers for the region. Please note that to use the final demand multiplier for employment, the construction costs were deflated to 2010 dollars using GDP deflator for non-defense direct capital because the RIMS II multipliers are based on 2010 data. The professional services costs were deflated to 2010 dollars using GDP price index deflator.

Table 10: Estimated Palm Beach County Employment for Phases 1A and 2

	Phase 1A	Phase 2	Total
Total Employment (Job-Years)	184	170	355
Direct Employment (Job-Years)	114	105	219
Indirect and Induced Employment (Job-Years)	71	65	136

Source: AECOM, Bureau of Economic Analysis RIMS II

3.3 Jobs Associated with Redevelopment

In most cases, the ROW acquisitions will not require full parcels, and as a result some portions of parcels will be left either under the current ownership or potentially repackaged and sold to new businesses. With the potential for redevelopment of these repackaged parcels comes the opportunity for new jobs for the CRA, City, and County. In order to estimate the increase in potential jobs associated with these repackaged properties, the current employment for the impacted properties along the Northwood Connection alignment was collected from manta.com²³ to determine the average square feet per employee for the corridor. The website had records for five of the 15 affected parcels;²⁴ those companies whose employment data were not available were reviewed to check that their improvement sizes were not sufficiently large enough to affect the average square feet per employee. Using the average of the range of employment at the business, a total of 73 employees were found in the affected area. Next, the total size of existing improvements in the affected area was collected using data from the Palm Beach County Assessor's Office for each parcel. The square footage of improvements on the fifteen parcels (eight have improvements) totaled 74,328 square feet; as a result, the average square footage of an improvement per parcel was 9,291 square feet. Dividing the total square footage of improvements by the number of employees yields approximately 1,025 improvement square feet per employee.

The square footage of the parcels that could be redeveloped is shown in Table 11. In total, five parcels can accommodate redevelopment.²⁵ The parcels that are able to redevelop include N7, N9, N13, N14, and N20.²⁶ These parcels are able to redevelop because they are 1) currently vacant; 2) the company currently occupying the parcel must relocate, and/or 3) have a minimum of 9,291²⁷ square feet available for an improvement. Assuming each of the parcels builds the average-sized improvement of 9,291 square feet, a total of 46,455 square feet of improvements could be built. Finally, assuming 1,025 square feet per employee in the corridor (from above), approximately 45 new employees in the CRA/City/County could be added as a result of the redeveloped parcels.

²³ Employer data were not available, so manta.com was used to estimate the potential employment

²⁴ Note that three parcels are vacant and three parcels are owned by the same company. As a result, the employment at a total of four companies could not be estimated for this calculation.

²⁵ Parcels N7 and N9 will be combined into one parcel because N7 needs N9 to have road access. For parcel locations and proximity to the proposed rail right of way, see Appendix A.

²⁶ Parcel N20 can be split into two separate parcels.

²⁷ Average size of improvement on affected parcels.

Table 11: Square Footage of Parcels Available for Redevelopment

Parcel	Parcel Address	Parcel Square Footage	Note
N7	915 25th St.	9,627	North clip is 0.221; no access unless used with N9
N9	901 25th St.	5,401	North clip is 0.124; combined with N7 only
N13	2706 Rosemary Ave.	13,547	West clip is 0.311
N14	2727 Rosemary Ave.	17,163	West clip is 0.394
N20	715 25th St.	63,772	Redevelop into two new parcels; north parcel 0.798 acres, south parcel 0.666 acres
		109,510	Total

Source: CH2MHill, AECOM

3.4 Increase in Property Value from Redevelopment

The five parcels available for redevelopment have the potential to attract five new buildings or improvements, which could increase the property values within the CRA, City, and County. As discussed above, assuming five new structures at 9,291 square feet each could attract 46,455 square feet of new structures to the redeveloped parcels.

The redeveloped properties are assumed to increase in value by at least the construction cost of the improvement built on the parcel. Companies would not be willing to build these new structures if the value of their property would not increase by at least the construction value of the improvement. As a result, the construction cost of the building is used as a conservative proxy for the increase in property values that could be expected for these parcels. The impacted area is mostly industrial, so it is assumed that the improvements most likely would have warehouse characteristics. The average cost per square foot²⁸ of a warehouse in 2013 is \$62.33²⁹ for the entire country; to convert the price to Palm Beach County, a location factor of 0.83, also from RSMMeans, was used. Assuming five³⁰ new structures would be built at an average size of 9,291 square feet each, the property values of the affected parcels are estimated to increase by up to \$3,039,599 from the improvements. This increase in property value could increase the value of taxable property within the CRA, City, and County.

4.0 Regional Analysis

The South Florida Freight and Passenger Rail Enhancement project proposes phased improvements to rehabilitate and enhance the existing partial SFRC/FEC connections at the Northwood Connection (Palm Beach County) and the IRIS Connection (Miami-Dade County) to better link FEC's and SFRC's major freight corridors and provide improved freight connectivity. The existing SFRC accommodates CSX Transportation (CSXT) freight operations, and FEC freight customers are served through the FEC corridor to the east. Integrating these rail corridors

²⁸ RSMMeans 2007 Commercial/Industrial/Institutional M690 Warehouse costs per square foot of floor area, page 224. This is an average across the United States.

²⁹ Converted from 2007 dollars to 2013 dollars using direct capital non-defense deflator

³⁰ Five new structures on parcels (N7+N9 combined), N13, N14, and two from splitting N20.

will facilitate improved intermodal connectivity to the major intermodal freight centers and multi-modal centers within the region.

The South Florida Freight and Passenger Rail Enhancement project will support the region's economy over the long-term by providing a rail link between the state's southern ports and major urban markets in central Florida. This link benefits the regional and national economy by allowing truck freight to divert to rail—reducing the costs to shippers, creating road capacity, reducing road wear and tear, improving safety, and reducing emissions. The project will also add capacity in the heavily-used Jacksonville-to-PortMiami corridor for both freight and passenger rail networks. This capacity is sought because of current freight demand, current use of the SFRC by Tri-Rail and Amtrak, and anticipated growth in freight coming north from Port Everglades and PortMiami. The mixed traffic uses more capacity than would a uniform mix of trains because different types of trains travel at different speeds, require different distances between trains, and have different stopping patterns.

This section describes the benefits and costs of the project as documented in the TIGER 2013 benefit cost analysis (BCA) and estimates the value of the long-term benefits for the region generated by the full project investment (including Phases 1A, 1B, and 2). For the purposes of the BCA, all three phases of the South Florida Freight and Passenger Rail Enhancement project infrastructure improvements are expected to be complete by the end of FY 2016/2017. In order to assess the potential regional benefits associated with the project's implementation, a number of assumptions were required on the potential diversion of truck freight to rail, the likely savings, and the amount of rail capacity that would be used. The assumptions, vetted with the railroads and FDOT, are internally consistent and reflective of freight market conditions in Florida. In order to investigate the sensitivity of the final result to the assumptions made, a number of scenarios were developed and estimated. A brief summary of the scenarios is provided below. For the full BCA analysis and details on how benefits were calculated please see the publicly available technical memorandum submitted with the TIGER 2013 grant application, available online³¹.

Base Scenario: Tampa/Winter Haven Florida Market Only

In this scenario, FEC/CSXT add one train in each direction (2 trains) daily between PortMiami and central Florida—midpoint between Tampa and Winter Haven is used for distance calculations because trains may stop at either market.

- Trains assumed to be 3,000 ft
- 100 containers per train
- 200 containers equates to 200 trucks daily—returns are not considered in the calculation
- 250 miles per trip
- 50,000 truck VMT removed daily
- 17,750,000 truck VMT removed yearly (assumes 355 annualization factor)
- 71,000 trucks removed from Florida roads annually
- Net savings of trip using rail versus truck is \$30/container

³¹ See <http://sfecstudy.com/docs/oppDTOS59-13-RA-TIGER5-cfda20.933-cidTIGER5-FY13.pdf> for TIGER 2013 application details.

The Base Scenario considers diversion impacts based on current conditions; no growth in projected markets is considered in the calculation. The impact of return truck trips is excluded also, making the calculation conservative.

Base Scenario + Capacity on PortMiami to Jacksonville Routing

These scenarios consist of everything described in the Base Scenario plus the following:

FEC/CSXT add between one and four trains in each direction (2 to 8 trains) daily between PortMiami and Jacksonville. The additional trains are consistent with historical freight levels and would restore historical freight rail service to PortMiami.

- Trains assumed to be 9,000 ft as the trains would leave PortMiami and go to their yard to build a longer train
- Trains would be intermodal and have 150 containers per train
- 1,200 containers equates to 1,200 trucks daily if all eight trains are assumed (150 boxes X 4 trains X 2 directions)—returns are not considered in the calculation
- 360 miles per trip (MapQuest)
- 432,000 truck VMT removed daily if all eight trains are assumed
- 153,360,000 truck VMT removed yearly (assumes 355 annualization factor)
- 426,000 trucks removed from Florida roads annually
- Net savings of trip using rail versus truck is \$60/container for the longer Jacksonville trip

The impact of return truck trips is excluded also, making the calculation conservative. Variations on the two scenarios are developed using a lower \$10 net savings per container diverted to truck and also by varying the number of Jacksonville trains. Market conditions have indicated that up to six trains could run daily along the corridor; so the analysis presented here is conservative by showing up to four.

Three main categories of benefits were estimated in the BCA for the region: shipper benefits, benefits attributable to taking trucks off of the roads, and the residual benefit of the investment. Two cost categories were estimated as well, capital and operating and maintenance. All costs and benefits were analyzed over a 20-year period. Four scenarios are shown in Table 12 to provide a range of BCAs for the very conservative Base Scenario to the more realistic but still conservative scenario of four Jacksonville trains. The Base and Base Scenario + 4 Jacksonville Trains scenarios are also shown at two shipping costs. The regional costs and benefits presented in the text are for the Base Scenario + 4 Jacksonville Trains at the lowest shipping costs.

For an abbreviated list of the regional benefits of the project, see Section 4.5.

4.1 Shipper Benefits

The South Florida Freight and Passenger Rail Enhancement project is comprised of three phased strategic and focused investments that collectively leverage significant past investments made by the railroads in their networks and by the State and Federal government in Florida's ports to allow the intermodal transportation system to function more reliably and efficiently. The project improves economic competitiveness at both the local and regional/national level by improving the

long-term cost competitiveness in the movement of goods. Connecting the FEC network and the South Florida Regional Transportation Authority (SFRTA) system on which CSXT operates delivers immediate benefits to Florida and the U.S. by 1) allowing the intermodal freight network to serve the south and central Florida market more cost effectively, and 2) creating rail capacity in the high-demand South Florida-to-Jacksonville corridor to accommodate projected future freight growth. This efficiency and capacity gain, in turn, makes the south and central Florida region and its ports more economically competitive.

At present, there is no way for shippers using PortMiami to serve the Tampa and Orlando markets by rail; all PortMiami freight coming to or from Tampa or Orlando must travel by truck. Although Tampa has a port, not all world destinations can be reached using the carriers that call in Tampa. Some freight from the Tampa and Orlando market must currently travel to other ports such as Miami, Port Everglades, or Port of Palm Beach when destined for a world market not available via Tampa. When accessing Port Everglades, PortMiami, and Port of Palm Beach, this freight must travel by truck. The FEC and CSX Railroads estimate that current market demand translates into one train traveling daily in each direction between PortMiami and either Tampa or Winter Haven. For the purposes of this analysis, the midpoint between the two was used under the assumption that some trips would go all the way to Tampa and some would stop at Winter Haven.

The need for Tampa and Orlando shippers to connect with ports outside their region is expected to intensify in the future as the evolution of the waterborne cargo market will limit further the Port of Tampa's market. An estimated 43% of the container vessels currently on order are in excess of 8,000 TEUs;³² these ships need channel depths of at least 47-50 feet under a full load. This represents a marked change from the current fleet composition where only 7% of the current world container fleet is in excess of 8,000 TEUs. It is anticipated that these ships will be deployed most intensively in the Asia routes. Looking ahead, the size of container ships will continue to increase, requiring a 47-50 foot shipping channel. The Port of Tampa has a depth of 43 feet, meaning that it will be able to accommodate a diminishing share of the container fleet in use over time and comparatively fewer ships from Asia. Over time, this will raise the costs for exporters and consumers in this region. By connecting the Tampa and Orlando markets by rail to PortMiami with a current depth of 42 feet and a planned and authorized depth of between 50 and 52 feet, the region has an alternative and cost effective gateway to the world economy.

The project enhances the region's economic competitiveness in other ways as well. The Port of Palm Beach, Port Everglades, and PortMiami become more attractive ports for carriers to use if they are served by more than one railroad—because of the range of inland destinations served, because of the landside capacity to move goods, and because of the cost competitiveness of having two rail lines competing to carry cargo. The Port of Palm Beach would benefit directly from the market access to central Florida in the same ways that Port Everglades and PortMiami benefit: with expanded market opportunities and competition for business. While the Port of Palm Beach does not have the capacity or water depth to support increases in freight traffic to the

³² Institute of Shipping Economic and Logistics, Shipping Statistics and Market Review, 2012 and The Opportunity Cost of Delays in Navigation Projects: A Case Study of Selected Navigational Projects for Florida Ports, 2013.

degree that Port Everglades and PortMiami do, the Port of Palm Beach will have the same accessibility and thus new market opportunities by providing shippers with another port option.

Finally, the ability to move freight from one rail line to the other creates additional rail capacity in the corridor at a very low cost. The FEC and CSXT estimate that initially an additional four trains can be added in each direction between PortMiami (or Port Everglades) and Jacksonville. Latin American cargoes have typically accounted for about 45-50% of PortMiami's total tonnage, according to the Port's 2035 Master Plan. This additional capacity is essential for the region to accommodate the increased demand for trade that is expected in the future. Asian cargoes have doubled from 15% in 2003 to nearly 30% in 2008, and additional Asian service is anticipated over time on all-water Suez and Panama Canal routings. The port handles about 840,000 TEUs; the unconstrained container throughput at PortMiami is projected to range between 1.77 million and 3.38 million TEUs, according to the port's Master Plan. This growth in traffic is being driven by growth in the world market; it is not coming at the expense of another U.S. port. Rather, the project investments allow U.S. ports located in South Florida to maintain or capture a larger share of the world waterborne freight business.

An additional economic competitiveness benefit of the project is the ability to better compete for distribution and logistics-related jobs. As noted in a recent Florida Ports Council report, "[t]he ability to serve as a first inbound-port call for an Asian all-water service to the East Coast of the United States is of critical importance not only to the state economy, but to the national economy as well. With the completion of the Panama Canal expansion to accommodate vessels with a draft in excess of forty-five (45) feet and length overall (LOA) in excess of one thousand (1,000) feet, there has been growth in the development of container transshipment hubs in the Caribbean."³³ In addition, there is a distribution center function accompanying the establishment of first-inbound port calls that could potentially be lost to off-shore Caribbean locations. The report estimates that "for each of the container services, defined as 52 port calls per year that call a Caribbean transshipment service rather than a U.S. port, the opportunity cost of exporting distribution/logistics center jobs is nearly 12,000 direct, induced and indirect jobs annually." Aside from water depth, the single biggest factor in serving as the first port of call is the landside capacity to efficiently unload/load the vessel and reduce time in port. This project directly enhances the ability of the ports to do this.

This is a project of regional significance. It serves multiple beneficiaries and delivers long-term benefits to the region. While the project directly improves the economic competitiveness of the region through reduced shipping costs, other long-term benefits such as the reduction of emissions, greater safety, fewer trucks and congestion reduction, and favorable impacts on consumer prices all support the region's large tourist industry by helping it to remain an attractive and affordable destination for seasonal and vacationing visitors.

The project has national significance, as well, as it supports the objectives of the Administration's Export Initiative Program, and allows three East Coast export gateways to respond to rising trade

³³ "The Opportunity Cost of Delays in Navigation Projects: A Case Study of Selected Navigational Projects for Florida Ports," prepared by Martin Associates for the Florida Ports Council, April 15, 2013, p. 5.

with Latin America, the utilization of larger ships accommodated by the expansion of the Panama Canal, and the potential loss of U.S. jobs to competition from Caribbean transshipment centers for logistics services. The railroads, the Port of Palm Beach, PortMiami, Port Everglades, resident consumers in the region, visitors (tourists and seasonal) to the region, and shippers and consignees in the region and beyond who use South Florida's ports are all poised to benefit from the proposed rail investments described.

The estimated savings in shipper benefits range from \$40.17 million assuming four Jacksonville trains at \$10 per box, and may range as high as \$223.79 million, both discounted at 7%. These savings translate into greater profitability and/or greater market-reach for shippers—translating into the retention and expansion of employment. These estimates do not include the benefits from having two railroads serve South Florida's ports nor the jobs retained or gained from competing successfully with Caribbean transshipment centers for logistics jobs.

4.2 Savings Associated with Removing Trucks from Roads

Four benefits result from removing trucks from Florida's roads and some portion of these benefits will be realized in the CRA, City of West Palm Beach, and Palm Beach County. The reduction in vehicle miles traveled (VMT) by trucks benefits the local area and region through avoiding congestion costs, reduced emissions, reductions in the likelihood of crashes and injuries, and pavement cost savings. These four benefits are described briefly here. The total benefits listed are for four Jacksonville trains, which is conservative considering that market conditions could allow for six daily trains.

4.2.1 Congestion Costs Avoided

The reduction of truck VMT benefits the remaining auto users on the roadways and reduces the congestion costs for the other vehicles traveling the roads in the region. The Highway Cost Allocation Study³⁴ provides estimates of the marginal congestion costs per truck VMT removed from roads. The total congestion cost savings for travelers who remain on the roads amounts to approximately \$377.13 million in net present value.

4.2.2 Emissions

As freight diverts from truck to rail, there is a reduction in VMT that in turn decreases the amount of Nitrogen Oxide (NO_x), Particulate Matter (PM_{2.5} and PM₁₀), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), and Carbon Dioxide (CO₂) in the region.³⁵ The total short tons of pollutants were valued using the National Highway Safety Administration guidance.³⁶ The net present value of the improved air quality associated with reduced truck VMT is \$74.75 million.

³⁴ See <http://www.fhwa.dot.gov/policy/hcas/addendum.htm>

³⁵ For emissions rates in the region, see Hours of Service (HOS) Environmental Assessment, Appendix A: Analysis of Air Quality Impacts, Dec 2010

³⁶ Corporate Average Fuel Economy for MY2017-MY2025 Passenger Cars and Light Trucks (August 2012), page 922.

The cost of carbon avoided was valued using factors from the Interagency Working Group's recommendations on Social Cost of Carbon.³⁷ The net present value of the reduced carbon emissions associated with reduced truck VMT yields \$57.70 million in savings.

4.2.3 Safety

The reduction of truck VMT also reduces the likelihood of crashes and associated deaths, injuries, and property damage. Based on accident rates from the Bureau of Transportation Statistics (BTS),³⁸ conversion factors to yield accident types,³⁹ and valued using USDOT Guidance and the National Highway Safety Council estimates for the value of avoiding an accident, a safety benefit of \$339.05 million discounted at 7% for the region was estimated.

4.2.4 Pavement Cost Savings

The diversion of trucks from Florida roads reduces wear and tear on the road pavement. This estimate of pavement savings applies escalated values from the Highway Cost Allocation Study⁴⁰ (HCAS) to the estimated truck VMT removed from Florida's roads. The HCAS values vary for urban and rural roads. An estimate of the share of each trip that would travel on urban and rural roads was made and a weighted share of the HCAS values was applied to the truck mileage avoided. The net present value of the pavement saved through truck miles avoided is \$224.01 million.

4.3 Residual Value

The final regional benefit is the residual value of the investment, or the remaining value of an investment at the end of its useful life. The useful life of the track investment is understood to be 38 years according to BEA guidance on the useful life of various assets.⁴¹ Thus, at the end of the analysis period there are 18 years of useful life left for the track investment. Together with the ROW portion of the capital (ROW does not depreciate), the net present value of the residual rail investment is \$12.36 million.

4.4 Costs

Two components of costs were included in the TIGER 2013 BCA: capital costs and operating and maintenance costs.

4.4.1 Capital Costs

The capital costs in the BCA include all three phases (1A, 1B, and 2) of the project described in the TIGER 2013 application. The total stream of capital expenditures over the 20-year analysis period totals a net present value of \$41.04 million.

³⁷ See: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, February 2010, <http://www.epa.gov/otaq/climate/regulations/scc-tsd.pdf>

³⁸ BTS Accident Rates per 100,000,000 VMT from 2011 BTS Motor Vehicle Safety Data Table 2-17

³⁹ See: http://www.dot.gov/sites/dot.dev/files/docs/BCA_OnlineSupplement_May15_2013.pdf

⁴⁰ See <http://www.fhwa.dot.gov/policy/hcas/addendum.htm>

⁴¹ BEA Rate of Depreciation, Service Lives, Declining-Balance Rates, and Hulten-Wyckoff Categories

4.4.2 Operating and Maintenance Costs

Collectively, all three phases of the project entail the addition of 5,650 linear feet of new track and the rehabilitation of 3,600 linear feet of existing track. Surface treatments at the grade crossings, signaling equipment, and grade crossing protection improvements are also included. The project thus represents a very small net new addition to the existing capital stock in the two railroads' network. FEC and CSXT rail staff estimated the annual operating and maintenance cost to be \$250,000 per year on average. In reality, the actual costs incurred in some years will be less and will be more in others, so the average cost is included in each year of the 20-year analysis period to account for the year-to-year variations. The total net present value of O&M costs over the 20-year analysis period yields a total of \$2.02 million.

4.5 Summary of Regional Project Benefits

Over 20 years, the benefits of South Florida Freight and Passenger Rail Enhancement project will exceed the costs of the investment. The net present value of benefits to the region assuming 4 Jacksonville trains include:

- Shipper Savings of \$40.17 million
- Congestion Costs Avoided of \$377.13 million
- Emissions Savings of \$74.75 million and CO2 Savings of \$57.70 million
- Safety Savings of \$339.05 million
- Pavement Cost Savings of \$224.01 million
- Residual Value of \$12.36 million
- For a total net present value of \$1.125 billion in regional benefits.

The discounted benefits and costs for four scenarios are displayed in the tables below. The values presented in the sections above coincide with the Base Scenario + 4 Jacksonville Trains at \$10 per box shown in the third table. As shown, the benefit cost ratios are high for all scenarios including the Base Scenario, and are particularly high for the four Jacksonville trains scenarios where the regional benefits of the project outweigh the costs by at least 26 times.

Table 12: Summary of Quantifiable Long-Term Benefits and Project Costs for the Region

Base Scenario with Shipping Costs @ \$30 to Orlando/Tampa per Box		
20 Year Analysis Period (2018 -2037)		
Values stated in 2013 \$M		
	Discounted at 7%	Discounted at 3%
Costs		
Capital Costs	\$ 41.04	\$ 44.41
O&M	\$ 2.02	\$ 3.30
Total Costs	\$ 43.06	\$ 47.72
Benefits		
Residual	\$ 12.36	\$ 12.90
Pavement Savings	\$ 21.48	\$ 35.14
Congestion Savings	\$ 35.00	\$ 57.24
Shipper Savings	\$ 17.21	\$ 28.16
Emissions	\$ 7.75	\$ 12.25
CO2	\$ 5.99	\$ 5.99
Safety	\$ 35.17	\$ 57.52
Total Benefits	\$ 134.97	\$ 209.19
BC Ratio	3.13	4.38

Base Scenario + 1 Jacksonville Train with Shipping Costs @ \$30 to Orlando/Tampa and \$60 to Jacksonville per Box		
20 Year Analysis Period (2018 -2037)		
Values stated in 2013 \$M		
	Discounted at 7%	Discounted at 3%
Costs		
Capital Costs	\$ 41.04	\$ 44.41
O&M	\$ 2.02	\$ 3.30
Total Costs	\$ 43.06	\$ 47.72
Benefits		
Residual	\$ 12.36	\$ 12.90
Pavement Savings	\$ 72.11	\$ 117.94
Congestion Savings	\$ 120.53	\$ 197.13
Shipper Savings	\$ 68.86	\$ 112.62
Emissions	\$ 24.50	\$ 38.69
CO2	\$ 18.91	\$ 18.91
Safety	\$ 111.14	\$ 181.77
Total Benefits	\$ 428.43	\$ 679.98
BC Ratio	9.95	14.25

Base Scenario + 4 Jacksonville Trains, All Shipping Costs @ \$10 per Box		
20 Year Analysis Period (2018 -2037)		
Values stated in 2013 \$M		
	Discounted at 7%	Discounted at 3%
Costs		
Capital Costs	\$ 41.04	\$ 44.41
O&M	\$ 2.02	\$ 3.30
Total Costs	\$ 43.06	\$ 47.72

Benefits		
Residual	\$ 12.36	\$ 12.90
Pavement Savings	\$ 224.01	\$ 366.37
Congestion Savings	\$ 377.13	\$ 616.80
Shipper Savings	\$ 40.17	\$ 65.70
Emissions	\$ 74.75	\$ 118.04
CO2	\$ 57.70	\$ 57.70
Safety	\$ 339.05	\$ 554.52
Total Benefits	\$ 1,125.17	\$ 1,792.03

BC Ratio	26.13	37.56
-----------------	--------------	--------------

Base Scenario + 4 Jacksonville Trains and Shipping Costs @ \$30 to Orlando/Tampa and \$60 to Jacksonville per Box		
20 Year Analysis Period (2018 -2037)		
Values stated in 2013 \$M		
	Discounted at 7%	Discounted at 3%
Costs		
Capital Costs	\$ 41.04	\$ 44.41
O&M	\$ 2.02	\$ 3.30
Total Costs	\$ 43.06	\$ 47.72

Benefits		
Residual	\$ 12.36	\$ 12.90
Pavement Savings	\$ 224.01	\$ 366.37
Congestion Savings	\$ 377.13	\$ 616.80
Shipper Savings	\$ 223.79	\$ 366.02
Emissions	\$ 74.75	\$ 118.04
CO2	\$ 57.70	\$ 57.70
Safety	\$ 339.05	\$ 554.52
Total Benefits	\$ 1,308.79	\$ 2,092.35

BC Ratio	30.39	43.85
-----------------	--------------	--------------

Note: *Climate Change benefits are only discounted at 3% per Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, Feb 2010

5.0 Summary

As part of the South Florida Freight and Passenger Rail Enhancement Study, AECOM performed an economic analysis of the impacts associated with the property acquisitions required for the Northwood Connection as well as the regional benefits of the project. Those impacts included the potential change to the Northwood CRA property tax base and TIF revenues, as well as the potential job and development effects within the CRA.

TIF revenues are the primary funding source for the Northwood CRA; therefore, they are an essential component for operating the CRA, paying debt service on existing debt, and investing in capital improvements for the district. As a result, the degree to which the TIF revenues are affected is of particular concern. In total, 15 parcels would be affected by the Northwood Connection to some degree, with impacts ranging from needing a corner of vacant land to impacting structures. As a result, two analyses were conducted to investigate the range of these impacts on the tax base and TIF revenues, with partial takings (only the necessary portion of a property was acquired) on the low end and full takings (the entirety of a parcel was acquired) on the high end. A comparison of the loss in tax base of the two scenarios is shown in Table 13. The partial takings would result in a loss of approximately \$1.7 million in taxable value, or 0.88% of the CRA's increment tax base (total CRA property value less base year value). The full takings would result in losing 2.31% of the CRA's increment taxable value and amounts to nearly \$4.4 million in value.

Table 13: Difference in Tax Base Impacts between the Partial and Full Takings Analysis

	Loss in Tax Base (2013)	Total CRA Tax Base ¹ (2013)	Loss as a % of Total CRA Tax Base
Some Partial Takings	\$ 1,679,355	\$ 190,004,525	0.88%
All Full Takings	\$ 4,387,605	\$ 190,004,525	2.31%

¹ FY2014 Total Taxable Value less Base Year Value

Source: AECOM analysis

The significance of the property takings on the CRA property tax base and forecasted TIF revenues were estimated through FY 2018. The revenue impacts of these takings were compared with the forecasted TIF revenues in the CRA Strategic Finance Plan to estimate the degree to which the takings affect revenues through FY 2018. AECOM analyzed the impact to the Northwood CRA TIF revenues for three taxable value growth rates: the CRA's forecasted rate as well as low and high growth scenarios based on AECOM's previous Northwood Connection Economic Analysis.⁴² The forecasted growth in taxable values was applied to the CRA's tax base as well as those properties (or parts of properties) acquired for the Northwood Connection. Overall, the differences between the TIF revenues with partial property acquisitions are small enough (less than 1% of total CRA TIF revenues, as shown in Table 6) that a slight increase in the forecasted tax base growth is sufficient to recover any losses associated with the takings

⁴² The AECOM low and high growth scenario rates were developed for the previous economic analysis and were based on local and national trends and vetted with the City of West Palm Beach and the CRA.

by FY 2016. For the full takings analysis, the revenue differences (less than 2.5% of total CRA TIF revenues, as shown in Table 8) could be overcome when assuming a slightly higher taxable value growth rate. For a comparison of the forecasted annual revenues in the various scenarios, which consider the tax base losses for the full and partial takings analysis (shown in Table 13), see Table 14.

Table 14: CRA TIF Revenue Impacts in the Partial and Full Takings Analysis at Different Growth Rates

	FY 14 (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
Partial Takings					
<i>Difference with Strategic Finance Plan Forecast (CRA Growth)</i>	\$ 560	\$ (20,970)	\$ (21,199)	\$ (21,642)	\$ (22,095)
<i>AECOM Low Growth</i>	\$ 560	\$ (25,228)	\$ 5,656	\$ 2,589	\$ (539)
<i>AECOM High Growth</i>	\$ 560	\$ 43,344	\$ 145,545	\$ 290,759	\$ 447,606
Full Takings					
<i>Difference with Strategic Finance Plan Forecast (CRA Growth)</i>	\$ 560	\$ (54,788)	\$ (55,386)	\$ (56,544)	\$ (57,726)
<i>AECOM Low Growth</i>	\$ 560	\$ (59,005)	\$ (28,795)	\$ (32,551)	\$ (36,383)
<i>AECOM High Growth</i>	\$ 560	\$ 8,892	\$ 109,715	\$ 252,779	\$ 407,348

Source: AECOM analysis

The Northwood Connection's impacts on the Northwood CRA TIF revenues is of particular concern due to the CRA's anticipated operating shortfalls associated with maintaining current operations and meeting debt service obligations. This shortfall is anticipated to occur with or without the Northwood Connection. While the shortfall would continue with the Northwood Connection acquisitions, it is important to note that the estimated TIF revenues are expected to cover the CRA's annual debt service obligations under all takings and growth rate scenarios, as shown below in Table 15. This is an important distinction because it indicates that the operating shortfalls likely could be managed through reductions in operating expenses or the use of existing reserves—measures that are likely to be needed even without the Northwood Connection project.

Table 15: Total Forecasted CRA Annual Expenses Compared to Forecasted TIF Revenue Scenarios

	FY 14 (Prelim)	FY 15 (Forecast)	FY 16 (Forecast)	FY 17 (Forecast)	FY 18 (Forecast)
Operations	\$ 968,148	\$ 979,549	\$ 991,141	\$ 1,002,976	\$ 1,015,019
Debt Service	\$ 1,724,244	\$ 1,726,434	\$ 1,722,044	\$ 1,724,949	\$ 1,726,216
Target Area Initiatives (capital)	\$ 1,118,851	\$ -	\$ -	\$ -	\$ -
Total Expenses	\$ 3,811,243	\$ 2,705,983	\$ 2,713,185	\$ 2,727,925	\$ 2,741,235

TIF Revenues: Partial Takings					
Total CRA Incremental Revenue (CRA Growth)	\$ 2,369,660	\$ 2,351,808	\$ 2,389,267	\$ 2,461,835	\$ 2,535,854
AECOM Low Growth	\$ 2,369,660	\$ 2,347,550	\$ 2,416,122	\$ 2,486,066	\$ 2,557,409
AECOM High Growth	\$ 2,369,660	\$ 2,416,122	\$ 2,556,011	\$ 2,774,236	\$ 3,005,555
TIF Revenues: Full Takings					
Total CRA Incremental Revenue (CRA Growth)	\$ 2,369,660	\$ 2,317,990	\$ 2,355,080	\$ 2,426,933	\$ 2,500,223
AECOM Low Growth	\$ 2,369,660	\$ 2,313,774	\$ 2,381,671	\$ 2,450,926	\$ 2,521,566
AECOM High Growth	\$ 2,369,660	\$ 2,381,671	\$ 2,520,181	\$ 2,736,256	\$ 2,965,296

The Northwood Connection project provides an opportunity to mitigate the impacts to the Northwood CRA's taxable value and resulting TIF revenues through the following methods:

- *Minimization of parcel impacts* – As stated previously, opportunities to minimize parcel impacts will be analyzed further as part of the NEPA study and subsequently, during the design phase when a survey is available to refine the design. There are up to two parcels with minimal impacts (less than .01 acre of total impact) that may be able to be avoided pending further analysis.
- *Minimization of relocations* – Through the FDOT ROW acquisition process, further formal appraisals, evaluations, and subsequent property owner coordination may result in minimizing relocations.
- *Relocation within the CRA* – At least one of the affected property owners owns additional vacant land within the CRA, which could be used for redevelopment. While the FDOT ROW acquisition process does not dictate relocation, this is a viable opportunity to offset economic impacts and revitalize the industrial area. The CRA could consider redevelopment incentives to encourage any of the affected property owners with relocations (maximum of four businesses) to redevelop within the CRA.
- *Reconfiguration and resale of impacted parcels for new construction* – Even though 15 parcels are affected to some degree by ROW acquisitions, a maximum of four businesses may require relocation. Of the parcels that would likely require full acquisition, some could be consolidated in order to create new and larger parcels that could be used for public or private purposes. While there is some effort needed to reconfigure the parcels and there is no guarantee that the new parcels will sell, it would significantly decrease the net amount of land taken off of the tax rolls. The CRA could consider incentives for redevelopment to encourage new business owners to redevelop within the Northwood CRA. New redevelopment within these areas would potentially increase the CRA revenues and result in a net positive economic effect.

The local effects on the CRA that result from the construction of the Northwood Connection include the following:

- **Jobs Associated with Three Relocations** – the potential loss of 44 jobs from the three businesses on parcels acquired for ROW⁴³
- **Temporary Construction Effects for Phases 1A and 2** – the construction of the project would result in 355 new temporary job-years in Palm Beach County, including 219 direct job-years located in the CRA, and 136 indirect and induced job-years in Palm Beach County
- **Jobs Associated with Redevelopment** – the potential redevelopment of parcels and businesses could result in 45 new jobs to the CRA
- **Increase in Property Value from Redevelopment** – the potential redevelopment of parcels and businesses could result in new industrial properties being constructed, increasing property values and adding to the CRA's tax base by \$3,039,599

All of these opportunities would further minimize any impacts to the CRA revenues, which range from an estimated 0.88% to 2.31% of the total CRA increment tax base. Further coordination with the City of West Palm Beach and the CRA is necessary to review the results of this economic analysis and review the Northwood Connection concept.

Finally, the full TIGER 2013 application was summarized to show the regional benefits of the project. In summation, the project is estimated to conservatively result in 26 times more benefits than the cost of construction and operation over a 20-year analysis period assuming four Jacksonville trains daily. These regional benefits will be felt by shippers and residents across southeastern Florida, to include the CRA, Port of Palm Beach, City of West Palm Beach, and Palm Beach County. The Port of Palm Beach, Port Everglades, and PortMiami become more attractive ports for carriers to use if they are served by more than one railroad—because of the range of inland destinations served, because of the landside capacity to move goods, and because of the cost competitiveness of having two rail lines competing to carry cargo. The Port of Palm Beach would benefit directly from the market access to central Florida in the same ways that Port Everglades and PortMiami benefit: with expanded market opportunities and competition for business. The main benefits of the project are for shipping savings from the enhanced rail access and the removal of trucks from local and regional roads. In total, the conservative estimate of four Jacksonville trains daily (when market conditions indicate that up to six daily trains could run) yields net present values of \$1,125.17 million in benefits compared to the similarly-discounted costs of \$43.06 million, resulting in a benefit cost ratio of 26.13. The high return for this project results from leveraging significant past capital investment by making very strategic, targeted spot improvements in the rail network to yield a large gain in rail mobility in the region.

⁴³ Up to four relocations (full parcel acquisitions) are anticipated for the project, and two were assumed in the partial acquisitions analysis. Assuming three falls within the likely range and provides an average estimated effect on employment lost in the CRA from full the acquisition of parcels N4, N9, and N20

Appendix A:

Northwood Concept Plan

