July

2015

Technical Memo - Final

District-Wide Highway-Rail Grade Separation: GIS Suitability Model

Florida Department of Transportation

District 1

Centennial FDOT 1915 ★ 2015

Contents

Figures

Tables

1.0 Introduction

The Florida Department of Transportation (FDOT) District One Office was tasked to evaluate the safety and operations of active rail crossings, with roadways (highways), within all twelve (12) counties of District One (Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Highlands, Lee, Manatee, Okeechobee, Polk, and Sarasota). Specifically, this study examines the need for highway-rail grade separation for all District One rail crossings. A highway-rail grade separation involves the separation of levels at which railroad and highway crosses one another. Highway-rail grade separation is constructed to alleviate issues pertaining to congestion and overall safety operations of a crossing location. The twelve (12) counties that comprise District One contain some of the heaviest concentration of active rail crossing locations in the state of Florida and number approximately eight hundred twenty (820) crossings. The procedures and findings are provided in the following sections.

1.1 Purpose

The purpose of this study is to determine which rail crossing locations are in the greatest need of highway-rail grade separation throughout District One. This study examines each crossing location within District One and determines its need, if any, for highway-rail grade separation based on the metrics of geographic information systems (GIS). GIS is used to not only quantify the need for highway-rail grade separation but also geospatially present each high priority location. There are several reasons why the selection of these high priority areas is important. The implementation of highway-rail grade separation is used to improve vehicle queuing and congestion across some of the most congested highways within District One. Along with this factor, freight mobility and the movement of goods is not only a priority for District One but for the state of Florida as a whole. The construction of a highway-grade separation would certainly improve the movement of goods for both roadways and the railroad.

2.0 Project Background

Highway-rail grade separation within District One, specifically Polk County, was analyzed in a previous study. In 2009, FDOT conducted a safety evaluation for all rail crossing locations. This technical memorandum examined the effect of increased freight rail traffic on at-grade crossings in Polk County. The traffic study incorporated a traditional comparative level of service (LOS) assessment for the existing (2008) and projected (2030) future condition, combined with a social component that examined quality of life issues associated with each identified grade crossing. The study provided recommended measures for improving LOS at grade crossings that are projected to experience a decline in LOS by 2030 or are noted to be significant for other reasons related to safety or general mobility. Specifically, the purpose of this study was to:

- Evaluate CSX freight rail crossings in Polk County;
- Identify deficient grade crossings as evidenced by LOS of D or lower;
- Evaluate deficient crossings in terms of LOS as well as community impact; and
- Provide recommended courses of action to minimize the effects of deficiencies.

Safety enhancements involving both the railroad and roadway have led to a significant reduction in injuries and fatalities throughout the U.S. Since 1974, approximately $3.8 billion dollars was allocated for highway-rail grade separation improvements in the U.S. through federal funding, including the Federal Highway Administration Safe, Accountable, Flexible, Efficient Transportation Act: A Legacy for User (SAFETEA-LU). Evaluations of safety improvements made under this program indicate it has helped prevent over 10,500 fatalities and 51,000 non-fatal injuries. During the 1970's, there were 12,000 collisions between trains and motor vehicles annually in the United States. By 2009, the number of train/vehicle collisions was reduced by 84 percent to 1,896. There is no denying the positive impact that highway-rail grade separations have had on the advancement of safety in transportation.

3.0 Methodology

3.1 Preliminary Review

As part of the GIS analysis provided in this study, each county within District One was examined and ranked based upon rail miles. This effort involved a quantitative assessment of each county's rail miles inventory. Each county is ranked in rail miles and rail percentages below (Table 3-1):

Table 3-1. District One Highway-Rail Miles/Percentages

Ranking	County	Rail Miles	Rail Percentage
1	Polk	310	46.2%
2	Highlands	73	10.9%
3	Manatee	49	7.3%
4	Lee	43	6.4%
5	Hendry	37	5.5%
6	Glades	35	5.2%
7	De Soto	29	4.3%
8	Charlotte	27	4.0%
8	Okeechobee	27	4.0%
9	Hardee	20	3.0%
10	Sarasota	19	2.8%
11	Collier	2	0.3%
	Total	**671**	**100.0%**

Polk County comprises almost half of all active rail miles (i.e. 46.2%) within District One, with Highlands coming in a distant second at 10.9% of total rail miles. A predominant amount of these rail miles are used to move freight, not passengers.

3.2 GIS Data Analysis

GIS analysis of relevant geospatial data generated a list of high priority locations for highway-rail grade separation. The geospatial data used in this study was obtained and downloaded from the Florida Geographic Data Library Database. This data, comprised of eight (8) main criteria, was used to produce Rail Grade Separation Priority Scores, or (RGSPS) for each crossing within District One. The criteria are provided below.

- ***Strategic Intermodal System (SIS):*** *Intermodal network of transportation facilities that seamlessly flow from one mode to the next with the goal of providing the highest degree of mobility for people and goods traveling throughout the state. Rail crossing locations were determined to be on or off SIS route.*
- ***AADT:*** *Annual Average Daily Traffic on cross road adjacent to rail crossing location.*
- ***Truck AADT:*** *Annual Average Daily Truck Traffic on cross road adjacent to rail crossing location.*
- ***Vehicle Crashes:*** *Total automobile crashes over a 5 year span that is located within 300 feet of a rail crossing.*
- ***Land Use Designation:*** *Land use designation consisting of Agriculture, Industrial, Commercial, Residential and Other.*
- ***Vehicle Speed:*** *Average vehicle speed limit within a 0.25 mile of the crossing location.*
- ***Train Speed:*** *Average train speed passing through the rail crossing location.*
- ***Train Traffic:*** *Average Daily Train Traffic passing through the rail crossing location.*

Each factor was weighted by level of significance to the overall RGSPS. Table 3-2 displays the criterion and scoring range for each.

Table 3-2. District One Rail Grade Separation GIS Methodology Matrix

District 1 Rail Grade Separation GIS Matrix						
Rail Crossing Located on SIS Road						
SIS	**Yes**	**No**				
Points	**10**	**0**				
Number of Crashes (Over 5 Year Span) within 300 feet from Xing						
Crash Number	>50	20-50	11-19	5-10	2-4	1
Points	**25**	**20**	**15**	**10**	**5**	**0**
AADT on Cross Road						
AADT	> 50,000	30,001 - 50,000	20,001 - 30,000	10,001 - 20,000	5,001 -10,000	<= 5,000
Points	**25**	**20**	**15**	**10**	**5**	**0**
Truck AADT on Cross Road						
	> 5,000	1,001 - 5,000	501 - 1,000	101 - 500	<= 100	
Points	**20**	**15**	**10**	**5**	**0**	
Land Use (Less Impacts = More Favorable)						
Type	Agriculture	Industrial	Commerical	Residential	Other	
Points	**10**	**6**	**4**	**2**	**1**	
Automobile Max Speed						
Mph	50-70	49-30	< 30			
Points	**15**	**10**	**5**			
Train Max Speed						
Mph	60-79	40-59	20-39	< 20		
Points	**15**	**10**	**5**	**0**		
Train Traffic						
Trains Per Day	21-30	11-20	6-10	1-5	< 1	
Points	**20**	**15**	**10**	**5**	**0**	

3.3 Site Visits

Upon identification and confirmation of the ten (10) high priority locations, site visits were conducted for each crossing location to determine if any further issues should be considered when ranking the final (10) high priority locations. The operations of these rail locations were observed, along with any pertinent details that are not depicted geospatially. These field observations allowed for a greater understanding of the deficiencies throughout each rail crossing (See Figures 3-1 through 3-10 below).

Figure 3-1: Site Visit: SR-659/Combee Road - Polk County

Field Observations – Ranked #1 - Crossing ID 624151-P	
• Single Track	• Heavy Truck Route
• 4 Lanes through crossing	• Crossing Material: Concrete Panel
• 2 Mast Arms/2 Closing Gates	• CSX Rail Line – 79 MPH Max Speed
• Adjacent to Walgreens	• Industrial with Minimal Residential Land Use

Figure 3-2: Site Visit: US-41/301 / SR-55/683 – Manatee County

Field Observations – Ranked #2 - Crossing ID 624712-B	
• Single Track	• Heavy Truck Route
• 6 Lanes through crossing	• No Bike Lanes
• 3 Mast Arms/4 Closing Gates	• CSX Rail Line – 20 MPH
• Adjacent to Middle School	• Crossing equipment in good condition

Figure 3-3: Site Visit: US-441 / Parrot Ave – Okeechobee County

Field Observations – Ranked #3 - Crossing ID 628062-L	
• Double Tracks	• Medium Truck Route
• 4 Lanes through crossing	• Excess speeding through crossing
• 2 Mast Arms/4 Closing Gates	• Industrial Land Use
• Witnessed two (2) bicyclists commuting the wrong way in bike lane	• CSX Trains located on tracks

Figure 3-4: Site Visit: US-92/600 (Fish Hatchery Road) - Polk County

Field Observations – Ranked #4 - Crossing ID 624138-B	
• Single Track	• Heavy Truck Route
• 4 Lanes through crossing	• Crossing Material: Concrete Panel
• 2 Mast Arms/2 Closing Gates	• CSX Rail Line – 20 Mph Max Speed
• Project Location identified in 2009 Rail Evaluation Study and 2014 Polk Rail Study as possible alternative to rerouting rail traffic from downtown Lakeland	• Industrial with Minimal Residential Land Use

Figure 3-5: Site Visit: SR-60/Nichols Rd – Polk County

Field Observations – Ranked #5 - Crossing ID 624525-T	
• Single Track	• Medium Truck Route
• 4 Lanes through crossing	• Crossing Material: MBM Tub w/Concrete Approach Slabs
• 2 Mast Arms/2 Closing Gates	• CSX Rail Yard – 10 MPH; Diagonal Rail Line
• Significantly more trucks heading east then west	• Industrial Land Use

Figure 3-6: Site Visit: US-301/N Washington Boulevard – Sarasota County

Field Observations – Ranked # 6 - Crossing ID 624667-J	
• Single Track	• Heavy Truck Route
• 6 Lanes through crossing	• Excess speeding through crossing
• 2 Large Mast Arms/ 4Closing Gates	• Industrial Land Use
• Crossing equipment in good shape	• No Trains located on tracks

Figure 3-7: Site Visit: US-27/SR-80/SR25 – Hendry County

Field Observations – Ranked # 7 - Crossing ID 627695-X	
• Single Track	• Heavy Truck Route
• 4 Lanes through crossing	• Excess speeding through crossing
• 2 Mast Arms/2 Closing Gates	• Agricultural Land Use
• Crossing located just over bridge	• No trains located on tracks

Figure 3-8: Site Visit: US-98/SR-700 – Okeechobee County

Field Observations – Ranked #8 - Crossing ID 628054-U	
• Single Track	• Heavy Truck Route
• 4 Lanes through crossing	• Excess speeding through crossing
• 2 Mast Arms/Closing Gates	• Industrial/Agricultural Land Use
• Adjacent to Walpole, Inc.	• Crossing equipment in good condition

Figure 3-9: Site Visit: CR 542/Wabash Avenue – Polk County

Field Observations – Ranked #9 - Crossing ID 624298-P	
• Triple Tracks	• Minimal Truck Route
• 2 Lanes through crossing	• Crossing Material: Asphalt
• 2 Mast Arms/4 Closing Gates	• Industrial with Minimal Residential Land Use
• Adjacent to Publix Shipping Warehouse	• CSX Rail Line - 79 MPH

Figure 3-10: Site Visit: US-92/County Line Road - Polk County

Field Observations – Ranked #10 - Crossing ID 624304-R	
• Single Track	• Heavy Truck Route
• 5 Lanes through crossing	• Crossing Material: Concrete Panel
• 2 Mast Arms/2 Closing Gates	• Industrial Land Use
• Closing gate recently replaced due to vehicle crash	• CSX Rail Line - 79 MPH, City of Lakeland and Polk County have an upcoming roadway widening project that will require the crossing improvements

3.4 Short-Term Improvement Strategies

This effort is to determine if any interim safety-related improvements may be implemented until the ultimate grade separation improvement is constructed. These improvements may include, but are not limited to, improved signage and pavement markings, traffic controls, traffic signal timings, etc.

4.0 Results

4.1 District One Rail Crossing Locations

The approximately eight hundred twenty (820) active rail crossing locations within District One were given RGSPS numbers/rankings based on available GIS data within a defined distance of each rail crossing location. The input layers comprising the criteria are derived from the FDOT Roadway Characteristics Inventory (RCI) GIS database which contains state roads and other major county/city roads but no local roads. The RGSPS number/rankings scores within District One range from 86 (highest) to 1 (lowest).

4.2 Top 10 High Priority Rail Crossing Locations

Based on the GIS Scoring Matrix as shown in Table 4-1, the highest scores were selected to define a top ten (10) priority list for highway-rail grade separation within District One. Counties that contain these high priority crossings consisted of Hendry, Manatee, Okeechobee, Polk and Sarasota.

The following are profiles of the top ten (10) locations for highway-rail grade separation within District One. These locations are geospatially depicted in Figures 4-1 though 4-6 and described in more detail in Tables 4-2 and 4-3.

- Map ID 1: SR 659 and Combee Road – Polk County
  (Score: 81)
- Map ID 2: U.S. 41/U.S. 301 Adjacent to Oasis Middle School – Manatee County
  (Score: 81)
- Map ID 3: U.S. 441, South of Walpole, Inc. and NW 9th Street – Okeechobee County
  (**Score: 81)**
- Map ID 4: US 98, Adjacent to Fish Hatchery Road – Polk County
  (Score: 76)
- Map ID 5: SR 60 and Nichols Road – Polk County
  (Score: 76)
- Map ID 6: U.S. 301 and University Parkway – Sarasota County
  (Score: 76)
- Map ID 7: U.S. 27, Adjacent to Lewis Boulevard – Hendry County
  (Score: 76)
- Map ID 8: U.S. 98 and NW 9th Street – Okeechobee County
  (Score: 74)
- Map ID 9: CR 542 and Wabash Avenue – Polk County
  (Score: 71)
- Map ID 10: US 92 and County Line Road – Polk County
  (Score: 71)

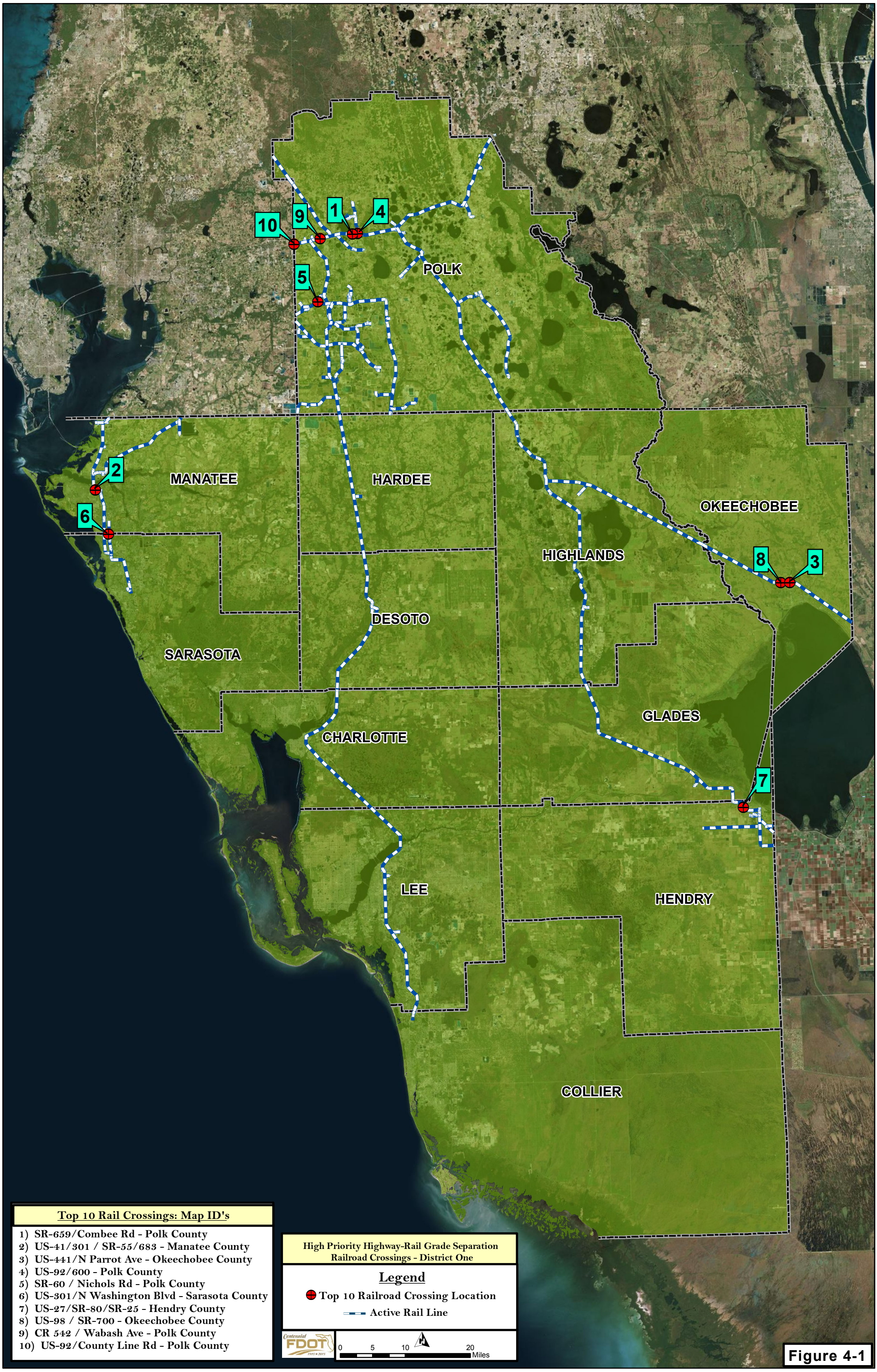
Table 4-1. Top 10 District One Highway-Rail Grade Separation - Raw Rail Crossing Numbers

MAP ID	CROSSING ID	CROSS STREET	RAIL ROAD OWNERSHIP	COUNTY NAME	SIS?	ROADWAY SPEED (MPH)	LAND USE DESIGNATION	AADT	TRUCK AADT	CRASHES	MAX TRAIN SPEED (MPH)	TRAIN COUNT
1	624151P	SR-659 / COMBEE RD	CSX	Polk	No	40	CENTRALLY ASSESSED	17900	1915	16	79	17
2	624712B	US-41/301 / SR-55/683	CSX	Manatee	No	45	PUBLIC/SEMI-PUBLIC	55000	2109	42	20	1
3	628062L	US-441 / N PARROTT AVE	CSX	Okeechobee	Yes	40	CENTRALLY ASSESSED	22000	1980	3	79	14
4	624138B	US-92 / SR-600	CSX	Polk	No	50	CENTRALLY ASSESSED	28500	1967	36	20	2
5	624525T	SR-60 / NICHOLS RD	CSX	Polk	Yes	55	CENTRALLY ASSESSED	18000	3006	20	35	7
6	624667J	US-301 / N WASHINGTON BLVD	SGLR	Sarasota	No	50	INDUSTRIAL	36500	2081	47	10	0
7	627695X	US-27 / SR-80 / SR-25	SCXF	Hendry	Yes	50	CENTRALLY ASSESSED	15200	3861	2	40	15
8	628054U	US-98 / SR-700	CSX	Okeechobee	No	45	RETAIL/OFFICE	10300	1421	4	79	14
9	624298P	CR 542 / WABASH AVE	CSX	Polk	No	55	CENTRALLY ASSESSED	10000	1100	15	79	23
10	624304R	US-92 / COUNTY LINE RD	CSX	Polk	No	35	CENTRALLY ASSESSED	21000	3549	6	79	15

Table 4-2. Top 10 District One Highway-Rail Grade Separation - Raw RGSPS

MAP ID	CROSSING ID	CROSS STREET	RAIL ROAD OWNERSHIP	COUNTY NAME	SIS SCORE	ROADWAY SPEED (MPH) SCORE	LAND USE DESIGNATION SCORE	AADT SCORE	TRUCK AADT SCORE	CRASHES SCORE	MAX TRAIN SPEED (MPH) SCORE	TRAIN COUNT SCORE	RGSPS SCORE
1	624151P	SR-659 / COMBEE RD	CSX	Polk	0	10	1	10	15	15	15	15	81
2	624712B	US-41/301 / SR-55/683	CSX	Manatee	0	10	1	25	15	20	5	5	81
3	628062L	US-441 / N PARROTT AVE	CSX	Okeechobee	5	10	1	15	15	5	15	15	81
4	624138B	US-92 / SR-600	CSX	Polk	0	15	1	15	15	20	5	5	76
5	624525T	SR-60 / NICHOLS RD	CSX	Polk	5	15	1	10	15	15	5	10	76
6	624667J	US-301 / N WASHINGTON BLVD	SGLR	Sarasota	0	15	6	20	15	20	0	0	76
7	627695X	US-27 / SR-80 / SR-25	SCXF	Hendry	5	15	1	10	15	5	10	15	76
8	628054U	US-98 / SR-700	CSX	Okeechobee	0	10	4	10	15	5	15	15	74
9	624298P	CR 542 / WABASH AVE	CSX	Polk	0	0	1	5	15	15	15	20	71
10	624304R	US-92 / COUNTY LINE RD	CSX	Polk	0	0	1	15	15	10	15	15	71

Figure 4-1. High Priority Highway-Rail Grade Separation Railroad Crossings – District One



Top 10 Rail Crossings: Map ID's

1) SR-659/Combee Rd - Polk County
2) US-41/301 / SR-55/683 - Manatee County
3) US-441/N Parrot Ave - Okeechobee County
4) US-92/600 - Polk County
5) SR-60 / Nichols Rd - Polk County
6) US-301/N Washington Blvd - Sarasota County
7) US-27/SR-80/SR-25 - Hendry County
8) US-98 / SR-700 - Okeechobee County
9) CR 542 / Wabash Ave - Polk County
10) US-92/County Line Rd - Polk County

High Priority Highway-Rail Grade Separation Railroad Crossings - District One

Legend

Top 10 Railroad Crossing Location

Active Rail Line

Centennial FDOT 1915 to 2015

0 5 10 20 Miles

Figure 4-1

Figure 4-2. High Priority Highway-Rail Grade Separation Railroad Crossings – Hendry County

CHARLOTTE

GLADES

LEE

HENDRY

PALM BEACH

BROWARD

LaBelle

Clewiston

7

80

29

25

27

US 27/SR 80

RIVER RD/CR 78 N

FLAGHOLE RD

N PINE CONE

KERI ROAD/CR 832

CHURCH RD

CR 833/JOSIE BILLIE

CR 835

CR 846

High Priority Highway-Rail Grade Separation Railroad Crossings - Hendry County

Legend

- Active Railroad Crossing
- Top 10 Railroad Crossing Location
- Active Rail Line
- Abandoned Rail Line
- County Boundary
- SIS Roadways
- Industrial Land Use
- Water Body
- Nature Preserve
- Urban Area

Centennial FDOT 1915 • 2015

0 2.5 5 7.5

Miles

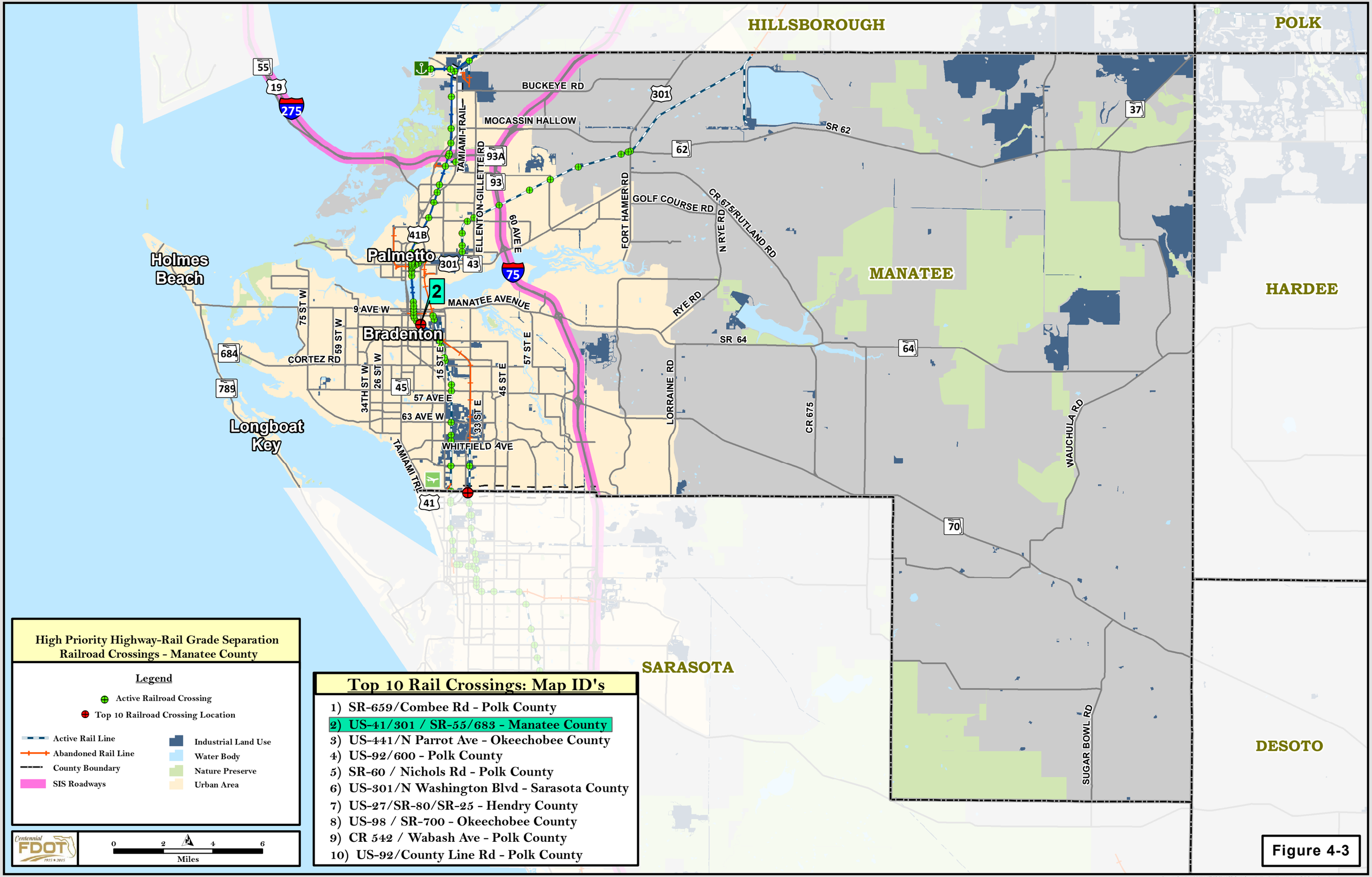
Top 10 Rail Crossings: Map ID's

1) SR-659/Combee Rd - Polk County
2) US-41/301 / SR-55/683 - Manatee County
3) US-441/N Parrot Ave - Okeechobee County
4) US-92/600 - Polk County
5) SR-60 / Nichols Rd - Polk County
6) US-301/N Washington Blvd - Sarasota County
7) US-27/SR-80/SR-25 - Hendry County
8) US-98 / SR-700 - Okeechobee County
9) CR 542 / Wabash Ave - Polk County
10) US-92/County Line Rd - Polk County

Figure 4-2

Document Path: \\ort-gis01\data1\FDOT_Dist-1_RR_Grade_Separation\Map_Docs\Hendry_Active_Rail_Grade_Separation_11x17.mxd

Figure 4-3. High Priority Highway-Rail Grade Separation Railroad Crossings – Manatee County



High Priority Highway-Rail Grade Separation Railroad Crossings - Manatee County

Legend

- Active Railroad Crossing
- Top 10 Railroad Crossing Location
- Active Rail Line
- Abandoned Rail Line
- County Boundary
- SIS Roadways
- Industrial Land Use
- Water Body
- Nature Preserve
- Urban Area

0 2 4 6 Miles

Top 10 Rail Crossings: Map ID's

1) SR-659/Combee Rd - Polk County
2) US-41/301 / SR-55/683 - Manatee County
3) US-441/N Parrot Ave - Okeechobee County
4) US-92/600 - Polk County
5) SR-60 / Nichols Rd - Polk County
6) US-301/N Washington Blvd - Sarasota County
7) US-27/SR-80/SR-25 - Hendry County
8) US-98 / SR-700 - Okeechobee County
9) CR 542 / Wabash Ave - Polk County
10) US-92/County Line Rd - Polk County

Figure 4-3

Figure 4-4. High Priority Highway-Rail Grade Separation Railroad Crossings – Okeechobee County

POLK

OSCEOLA

INDIAN RIVER

OKEECHOBEE

HIGHLANDS

ST. LUCIE

MARTIN

91

15

441

NE 48 AVE

NW 240TH ST

NE 224 ST

CR 68/NW 160TH ST

NW 144TH DR

N.E. 144 ST

N.E. 120 ST

N.E. 128 AVE

700

8

3

70

710

Okeechobee

98

78

High Priority Highway-Rail Grade Separation Railroad Crossings - Okeechobee County

Legend

- Active Railroad Crossing
- Top 10 Railroad Crossing Location
- Active Rail Line
- Abandoned Rail Line
- County Boundary
- SIS Roadways
- Industrial Land Use
- Water Body
- Nature Preserve
- Urban Area

Centennial FDOT 1915 ★ 2015

0 3 6 9

Miles

Top 10 Rail Crossings: Map ID's

1) SR-659/Combee Rd - Polk County
2) US-41/301 / SR-55/683 - Manatee County
3) US-441/N Parrot Ave - Okeechobee County
4) US-92/600 - Polk County
5) SR-60 / Nichols Rd - Polk County
6) US-301/N Washington Blvd - Sarasota County
7) US-27/SR-80/SR-25 - Hendry County
8) US-98 / SR-700 - Okeechobee County
9) CR 542 / Wabash Ave - Polk County
10) US-92/County Line Rd - Polk County

Figure 4-4

Figure 4-5. High Priority Highway-Rail Grade Separation Railroad Crossings – Polk County

High Priority Highway-Rail Grade Separation Railroad Crossings - PolkCounty

Legend

- Active Railroad Crossing
- Top 10 Railroad Crossing Location
- Active Rail Line
- Abandoned Rail Line
- County Boundary
- SIS Roadways
- Industrial Land Use
- Water Body
- Nature Preserve
- Urban Area

Centennial FDOT 1915 • 2015

0 3.5 7 10.5 Miles

Top 10 Rail Crossings: Map ID's

1) SR-659/Combee Rd - Polk County
2) US-41/301 / SR-55/683 - Manatee County
3) US-441/N Parrot Ave - Okeechobee County
4) US-92/600 - Polk County
5) SR-60 / Nichols Rd - Polk County
6) US-301/N Washington Blvd - Sarasota County
7) US-27/SR-80/SR-25 - Hendry County
8) US-98 / SR-700 - Okeechobee County
9) CR 542 / Wabash Ave - Polk County
10) US-92/County Line Rd - Polk County

SUMTER
LAKE
ORANGE
PASCO
POLK
HILLSBOROUGH
OSCEOLA
MANATEE
HARDEE
HIGHLANDS
OKEECHOBEE

Lakeland
Auburndale
Lake Alfred
Winter Haven
Davenport
Dundee
Lake Wales
Bartow
Fort Meade
Frostproof

COMMONWEALTH AVE
KATHLEEN ROAD
PROVIDENCE RD
OLD POLK CITY RD
BERKLEY RD
POLK CITY RD
CYPRESS PARKWAY
MARIGOLD AVE
LK MARION RD
LK HATCHINEHA RD
SPIRIT LAKE ROAD
POLK PKWY
COUNTY LINE RD
W PIPKIN RD
EWELL ROAD
SHEPHERD RD
CR 540 A
EAST AVE
COX RD
CR 640
SCENIC HWY
FORT GREEN RD
E CO LINE RD/CR664

Figure 4-5

Figure 4-6. High Priority Highway-Rail Grade Separation Railroad Crossings – Sarasota County

Top 10 Rail Crossings: Map ID's

1) SR-659/Combee Rd - Polk County
2) US-41/301 / SR-55/683 - Manatee County
3) US-441/N Parrot Ave - Okeechobee County
4) US-92/600 - Polk County
5) SR-60 / Nichols Rd - Polk County
6) US-301/N Washington Blvd - Sarasota County
7) US-27/SR-80/SR-25 - Hendry County
8) US-98 / SR-700 - Okeechobee County
9) CR 542 / Wabash Ave - Polk County
10) US-92/County Line Rd - Polk County

High Priority Highway-Rail Grade Separation Railroad Crossings - Sarasota County

Legend

- Active Railroad Crossing
- Top 10 Railroad Crossing Location
- Active Rail Line
- Abandoned Rail Line
- County Boundary
- SIS Roadways
- Industrial Land Use
- Water Body
- Nature Preserve
- Urban Area

Centennial FDOT 1915 ▪ 2015

0 2 4 6
Miles

Longboat Key
Sarasota
North Port
Venice
MANATEE
SARASOTA
CHARLOTTE
DESOTO
6
DESOTO RD
N TAMIAMI TRL
17TH ST E
HONORE AVE
301
789
683
780
FRUITVILLE RD/SR 780
PALMER BLVD
MYAKKA RD
BAHIA VISTA ST
WEBBER ST
45
BEE RIDGE RD
BEE RIDGE RD EXIT
SWIFT RD
BENEVA RD
PROCTOR RD
CLARK RD
758
72
93
75
CASEY KEY RD
681
LAUREL RD
BORDER RD
41B
VENICE AVE E
JACARANDA BLVD
CENTER RD
N RIVER RD
41
SUMTER BLVD
TOLEDO BLADE BLVD
ATWATER DR
TAMIAMI TRL
HILLSBOROUGH BLVD
MANASOTA KEY RD
INDIANA AVE N
PINE ST
S RIVER RD
WILLMINGTON BLVD.

Figure 4-6

5.0 Conclusion

This study determined several rail crossing locations within District One that are in need of rehabilitation and modification. The majority of these high priority areas are located in Polk County. There are two significant reasons why:

1. Polk County possesses the largest concentration of rail miles and crossings than any other county within District One.
2. There is above average freight/truck movement throughout Polk County due to its numerous distribution centers.

After careful site reviews of each location and a thorough GIS analysis, the crossing locations that yielded the highest score of eighty-one (81) is located in Polk County, on SR 659 and Combee Road, Manatee County, on US-41/301 / SR-55/688, and Okeechobee County, on US-441/N Parrot Avenue. These locations obtained the highest score due to high truck volume and overall AADT through crossing. The additional four counties encompassing the remaining top ten (10) crossings all possesed significant freight/truck movement passing though each crossing location, with a Truck AADT of greater then 1000.

The need to provide effective, efficient transportation improvements will be critical due to increasing volume of traffic on the roadways. Highway-rail grade separation has been statistically linked to improve safety and mobility throughout several major U.S. corridors. Grade separation increases roadway safety by reducing vehicle-vehicle and vehicle-pedestrian conflicts. The main objective being to remove crossing traffic from the intersection and thus eliminating the possibility of collisions. Highway-grade separation should be considered for the recommended top 10 locations as well as any location receiving a RGSPS of 70 or higher within District One. Signal timing modifications should also be considered as a potential short improvement strategy.

In closing, the GIS methodology formulated for this study will be used to justify highway-rail grade separation with quantifiable evidence. There are clear indicators of operationally flawed rail crossing locations (i.e., crashes near or around crossing location, heavy truck movement through crossing location, strategic location of rail crossing). These variables and others were measured to determine the need for highway-rail grade separation. This GIS suitability model determines and displays these high priority crossing locations in a way that is undeniable in its validity.