



District One Rail Traffic Evaluation Study

# Florida Department of Transportation District One

## **RAIL TRAFFIC EVALUATION STUDY**

Grade Crossing Evaluation Technical Memorandum

**November 2009**



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**Florida Department of Transportation  
District One**

**Rail Traffic Evaluation Study**

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# **1. Introduction**

## **1.1 Document Purpose**

The following technical memorandum examines the effect of increased freight rail traffic on at-grade crossings in Polk County. The traffic study incorporates a traditional comparative level of service (LOS) assessment for the existing (2008) and projected (2030) future condition, combined with a social component that examines quality of life issues associated with each identified grade crossing. The study provides recommended measures for improving LOS at grade crossings that are projected to experience a decline in LOS in 2030 or are noted to be significant for other reasons related to safety or general mobility. Specifically, the purpose of this study is 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 impacts
- Provide recommended courses of action to minimize the effects of deficiencies.

## **1.2 Study Overview**

The purpose of the FDOT District One Rail Traffic Evaluation study is to identify potential projects, improvements or strategies to address community concerns related to rail services in Polk County. The study focuses on identification of opportunities in three key areas: 1) impact mitigation strategies, 2) freight service options, and 3) passenger alternatives. The subject of this report is the first analysis area.

Under the second analysis, area freight service options will be evaluated. The full range of potential routings in the study area for freight services will be explored.

The third analysis area will involve the exploration of the increasing mobility options for commuters and residents in Polk County. Rail and bus solutions will be investigated. The evaluation will determine if a need exists for passenger rail or improved bus service for inter-city and/or commuter travel.

A significant stakeholder public outreach effort will be conducted throughout the study process. This public engagement effort will involve an on-going exchange of information between the project team and the public to identify solutions that are likely to carry public support.

## **1.3 Study Context**

The planning context in which a study is performed, in this case a study year of 2030, requires that a series of assumptions be agreed upon at the onset. The environment we plan in is ever changing and is in many cases influenced by other decisions and undertakings. For this reason, FDOT and the Study Team was charged with performing this technical analysis given a number of conditions and assumptions regarding other transportation initiatives being considered within the region as a whole.

Specific assumptions utilized by the study team for the technical analysis contained herein included:

- Construction and operation of the CSX Integrated Logistics Center (ILC) in Winter Haven;
- The shifting of freight traffic from CSX’s “A” Line to the “S” Line as reported by CSX;
- The construction and operation of SunRail, formerly known as the Central Florida Commuter Rail Project; and
- Miscellaneous transportation improvements programmed in the Polk County TPO planning model

The results of the technical analysis found in this report as well as the associated reports made part of this study represents the findings of the Study Team given the context described above and the technical assumptions described within each of the reports.

Another important consideration in this study is that the potential freight relocation and the implementation of passenger rail within the CSX right of way must consider the fact that CSX is not a public entity and that outcomes of this study are subject to reaching agreement with CSX, as with any private property owner. CSX has been an active stakeholder throughout the study and remains a cooperative partner. CSX has indicated that any freight rail relocation and/or a proposal to implement passenger rail within their right of way will result in many challenges and is subject to their corporate principals being maintained. These principals include:

- Ensuring safety;
- Maintaining and growing freight rail capacity;
- Addressing liability issues; and
- Providing for compensation.

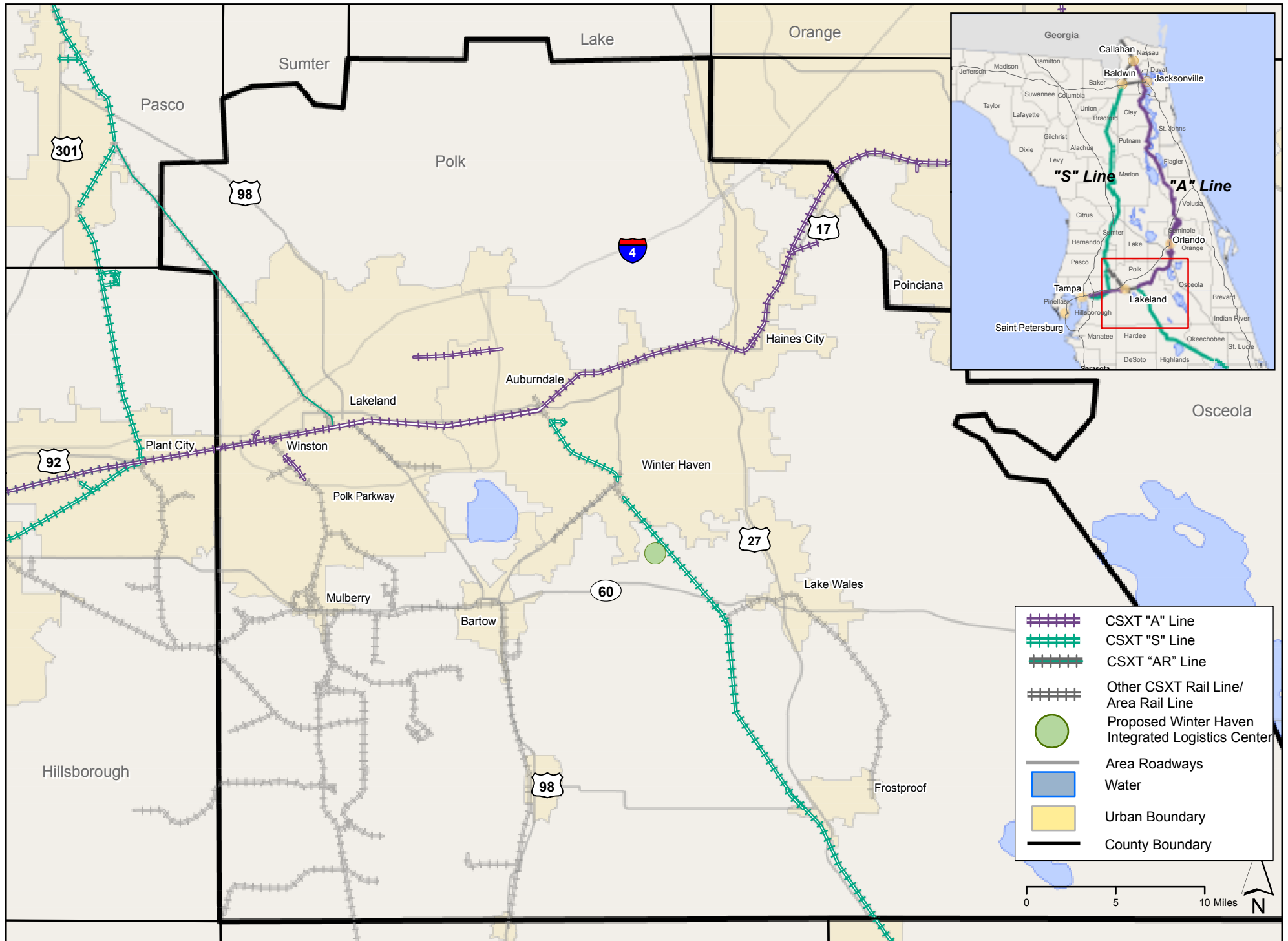
## **2. Existing Conditions**

### **2.1 Freight Network and Grade Crossing Overview**

The grade crossing analysis examines the interaction of existing freight rail service and surface transportation over Polk County’s roadway network, as depicted on Figure 1. Two rail lines owned and operated by CSX Transportation cross Polk County and carry the bulk of freight rail service:

- S Line – Crosses Polk County from the northwest traveling southeast to Lakeland, where it turns east and runs concurrently with the “A” Line to Auburndale, where it turns southeast and continues on through Winter Haven and Frostproof.
  - Because the S Line splits east and west at the Vitis Junction in Pasco County, the eastern segment of the S Line through Polk County is identified as the “AR Line” for ease of reference.
  - The new Intermodal Logistics Center (ILC) will be located in Winter Haven on the S Line





# Figure 1

Figure 2-1: CSXT "A" and "S" Lines Location Map  
 Rail Traffic Evaluation  
 September 2008



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- A Line – Traverses most of central Polk County and the Cities of Lakeland, Auburndale and Haines City. The A Line continues east of Auburndale to the Orange County line and west of Lakeland to the Hillsborough County border.
  - The portion of the A Line between Lakeland and Auburndale is shared with the S Line; however, for ease of reference in this study, the segment between Lakeland and Auburndale will be identified as the A Line.

Upon completion of the ILC, freight trains traveling to facility will use the S Line through Pasco County, southeast into Polk County on the AR section of the S Line, east through Lakeland on the A Line, and finally turn south at Auburndale onto the S Line and stop at the ILC. Freight trains heading from the ILC to the Port of Tampa or Port of Manatee will retrace the route described above, but instead of turning northwest to continue on the AR Line to Pasco County, trains headed to the Port of Tampa will continue on the A Line through Lakeland, heading due west to the border of Hillsborough County.

Roadways crossing these rail lines range from private access drives to major Local/State arterials. Limited access roads such as I-4 and the Polk Parkway provided for grade separated crossings as do several arterials, but the majority of minor arterials, secondary streets, and private access drives cross the railroad tracks at grade. In total, there are 74 such grade crossings along the AR, A, and S Lines and segments in the study area (refer to Table 1). Grade crossings along the freight route described above are expected to experience an increase in frequency of trains as freight service continues to expand throughout the region. The crossings along this route are therefore the focus of this study.

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**Table 1**  
**Rail Crossing General Characteristics**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Train Speed	Daily LOS Standard
1	AR	622855S	1st Street NW	Urban Collector	County	2U N	60	D
2	AR	622856Y	Oak Ave NW	Urban Collector	County	2U N	60	D
3	AR	622857F	Deeson Rd	Urban Collector	County	2U	60	D
5	AR	622858M	UnNamed Road Crossing	Private	Private	Driveway	60	NA
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	Private	Driveway	60	NA
7	AR	622860N	Youngs Ridge Rd	Local Residential	County	2U N	60	D
8	AR	622861V	Strickland Rd	Local Residential	County	2U N	60	D
9	AR	622862C	Private Road	Private	Private		60	
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	County	2U	60	E
11	AR	622864R	Sleepy Hill Rd	Urban Collector	County	2U	60	D
12	AR	622866E	CR 582 Knights Station	Urban Collector	County	2U	60	D
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial		6F	NA	C
14	AR	927709-6	Fairbainks Street	Urban Collector	County	2U	60	D
15	AR	624286V	10th St	Urban Collector	County	2U	60	D
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial		4D	NA	E
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	State	4D	NA	E
18	A	624289R	New York Avenue S	Urban Collector	City of Lakeland	2U	25	D
19	A	624164R	Missouri Ave N	Urban Collector	City of Lakeland	2U	25	D
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	State	4D	25	E
21	A	624162C	Tennessee Avenue	Urban Collector	City of Lakeland	2U	25	D
22	A	624161V	Kentucky Avenue	Urban Collector	City of Lakeland	2U	25	D
23	A	624160N	Massachusetts Avenue	Urban Collector	State	4U	25	D
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	State	4D	NA	E
25	A	624158M	Ingraham Avenue	Urban Collector	City of Lakeland	4U	60	D
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	State	4D	NA	E
27	A	624156Y	Gary Road (train over)	Urban Collector	State	2U	NA	E
28	A	624155S	Interlachen Pkway	Urban Collector		2U	60	D
29	A	624154K	Canal Ave	Urban Collector	County	2U	60	D
30	A	624153D	Fairway Ave	Urban Collector	County	2U N	60	D
31	A	624152W	N. Eastside Drive	Urban Collector	County	2U N	60	D
32	A	624151P	Combee Road (SR 659)	Minor Arterial	State	2U	60	E
33	A	624150H	Fish Hatchery Road	Urban Collector	County	2U	60	D
34	A	624149N	Reynolds Road	Urban Collector	County	2U	60	D
35	A	623085B	Old Dixie Highway	Urban Collector	County	2U N	60	D
36	A	623084U	Payne Street	Local Residential	County	2U N	60	D
37	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	NA	D
38	A	623083M	Neptune Road (Private)	Private	Private	Driveway	60	
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	State	2U	60	D
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	County	2U	40	D
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	County	2U	20	D
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	County	2U	20	D
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	County	2U	60	D
44	S	625396J	Spirit Lake Road	Urban Collector	County	4D	60	D
45	S	625397R	Coleman Road	Urban Collector	County	2U	60	D
46	S	625398X	24th Street	Local Residential	City of Winter Haven	2U	60	D
47	S	625399E	21st Street	Urban Collector	City of Winter Haven	2U	60	D
48	S	625400W	15th Street	Urban Collector	City of Winter Haven	2U	60	D
49	S	625401D	Lake Shipp Drive	Urban Collector	City of Winter Haven	2U	60	D
50	S	625402K	Orrin Ave	Local Commercial	City of Winter Haven	2U	30	D
51	S	625403S	Private Central Fla Gas Drive	Private	Private	Driveway	30	
52	S	625404Y	7th Street SW	Urban Collector	County	2U	30	D
53	S	625405F	Avenue R Southwest	Local Commercial	City of Winter Haven	2U	30	D
54	S	623041B	Private Road	Private	Private	Driveway	30	
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	State	6D	NA	D

**Table 1**  
**Rail Crossing General Characteristics**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Train Speed	Daily LOS Standard
56	S	625409H	American Superior Blvd	Urban Collector	County	2U	60	D
57	S	625410C	Croton Road	Local Residential	County	2U N	60	D
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed			
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	County	2U	60	D
60	S	625414E	Macon Road	Local Residential	County	2U N	60	D
61	S	625415L	Eagle Lake Loop Road	Urban Collector	County	2U	60	D
62	S	625417A	Pollard Road	Local Residential	County	2U N	60	D
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	County	2U	60	D
64	S	625419N	SR 60	Principal Arterial	State	4D	60	C
65	S	625420H	Old Ice House Road	Local Commercial	County	2U	60	D
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	County	2U N	60	D
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	County	2U	60	C
68	NA	NA	intentionally left blank	NA				
69	A	624304R	County Line Road	Urban Collector	County	4D	60	D
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	NA	D
71	A	624303J	Clark Road	Local Commercial	County	2U	60	D
72	A	624302C	Browning Road	Local Commercial	County	2U N	60	D
73	A	624300N	SR 572 Airport Road	Minor Arterial	State	2U	60	D
74	A	624299W	Gay Road	Urban Collector	County	2U N	60	D
75	A	624268P	Wabash Road Avenue	Urban Collector	County	2U	60	E

Notes: Information obtained from Polk County Roadway Network Database.

## **2.2 Other Studies and Considerations**

The study area has been undergoing notable growth as a result of economic and residential growth within Polk County along with secondary impacts from growth and development occurring in Tampa and Orlando, which are the major cities located west and east of Polk County. As a consequence, the study area of this project is currently experiencing a series of mobility studies performed by both state and local agencies.

### **2.2.1 Local Studies**

Several local studies are ongoing or being initiated within the overall project area. These include but are not limited to:

- The Gateway Selected Area Study – The Polk County Long Range Planning Section is responsible for this study, which is a comprehensive land use visioning study for the area surrounding the ILC within central Polk County. The study area extends from Alturas-Babcock Cutoff Road on the south, 80 Foot Road to the west, CR 540/Thompson Nursery Road to the north and US 27 to the east. The Gateway Selected Area Study was initiated subsequent to the District One Rail Traffic Evaluation Study; as a result, the results of the Rail Traffic Evaluation Study, for which this traffic analysis is part, will likely provide input to the Gateway Selected Area Study.
- Various Development of Regional Impact Studies (DRI) including the Clear Springs Mine DRI and Evansville DRI – The results of DRI studies provide growth data to the Polk County Transportation Planning Organization (TPO). The TPO, in turn, uses this data to derive growth factors used to model future growth. These factors were incorporated in the traffic models used to assess future grade crossing issues in this study.
- Polk Transportation Planning Organization Long Range Transportation Plan Update – The five year, long range transportation plan update is currently underway. The results of this traffic study, particularly findings that identify failing grade crossings and safety issues, may be incorporated in the Long Range Transportation Plan Update.

### **2.2.2 Regional Studies**

Similar to the local Gateway Selected Area Study, the regional Central Polk Parkway study is underway, and the results of the traffic analysis for the District One Rail Traffic Study may provide input data for the Polk Parkway study. The Central Polk Parkway study involves a proposed new limited/controlled access roadway facility connecting SR 60 to either the Polk Parkway and/or I-4. This proposed facility would augment the inter-regional roadway connectivity of the proposed ILC.

## **3. Methodology**

The grade crossing evaluation developed for this study adopted a two-pronged approach to the assessment of traffic impacts resulting from train traffic. The technical component involved a traditional level of service (LOS) analysis of surface mobility comparing the present conditions to future conditions, both with and without increases in freight traffic to ascertain the real change

attributable to increased freight service. The second component involved an assessment of the environment surrounding the crossing and the quality of the crossing itself, to provide context for the LOS analysis and to assist in developing a comprehensive approach to mobility improvements in the study area. The following sections describe the steps taken to develop this analysis.

### **3.1 Data Collection**

A comprehensive rail inventory was prepared of all crossings on the CSX A and S Lines, including the AR segment of the S Line, within Polk County. A complete inventory of rail and road crossings was compiled into an access database. This complete set of data is provided within Appendix 1- Rail Crossing Inventory/Database.

The geographic data was augmented by other site-specific functional information provided by a number of sources including:

- Traffic Data Collection from the following sources – City of Lakeland, City of Winter Haven, Polk County, FDOT and other available data sources including new counts.
- Field review of locations.
- Diagnostic inventory, ad-hoc reports, reports from FDOT and data from the Central Florida Commuter Rail website.
- Crash Data at crossing locations provided by Polk County.
- Local area transportation data from Polk Transportation Planning Organization (Polk TPO), City of Lakeland, City of Winter Haven, Polk County and the FDOT.
- Traffic signal information from City of Lakeland, city of Winter Haven, Polk County and FDOT.
- Surveys to Emergency Responders, Transit Agencies and School Boards.

Data resources are provided in Appendix 2- Data Resources.

### **3.2 Evaluation Parameters**

The data sources listed above provided a range of evaluation parameters that were used to describe the character and functionality of the grade crossings. The narrative descriptors for each parameter were represented with a numerical score, typically ranging from zero to five. A score of zero indicates the best overall scenario, with scores increasing in value as conditions degrade or other considerations increase, such as the number of community facilities in the vicinity of a grade crossing. As the overall quality of a grade crossing is the result of multiple factors, the numerical scores for each parameter were summed for each grade crossing.

It is important to note that the evaluation parameters provide a snapshot of the built environment in the vicinity of the grade crossing. Categories for which future plans exist factor anticipated improvements into the score, but such projection is limited by the horizon of the contributing plans and improvements explicitly described in those plans. For example, a local park plan may describe the future siting of a park near a grade crossing. Although this facility may not yet be funded, its inclusion in the plan warrants consideration in the evaluation of the grade crossing. Additionally, because long-range plans are largely conceptual in nature, the grade crossing is



credited as if the planned improvement exists today. As such, grade crossings receive only one total parameter score that takes into account planned improvements. Evaluation parameters are described in detail in the sections below.

### **3.2.1 Current Crossing Conditions**

The condition of the railroad crossings were evaluated based on a review of several data sources, including:

- FDOT Diagnostics Field Review Sheet for Rail-Highway Grade Crossings
- Current FDOT Five Year Work Program
- FDOT District 1 “Ad-Hoc” List

The FDOT Diagnostics Field Review and “Ad-Hoc” lists are field inventories of rail crossing conditions (Diagnostics Field Review) or a summarized report of railroad crossings that are identified as possibly needing some future type of corrective action or measure (“Ad-Hoc” List). Both the Ad-Hoc and work program lists include surface and signal projects.

Diagnostics Field Review data includes track owner, latitude longitude, rail branch or line, rail milepost location, status of crossing (opened, closed, etc.), maximum allowable train speed, number of tracks at crossing, warning devices, interconnection of warning devices, crossing angle with road, road speed limit, number of roadway lanes in each direction and average annual daily traffic (AADT). The crossing condition measures such as excellent, good, fair, poor are qualitative assessments performed by field personnel and entered into the Diagnostic Field Review sheet. The descriptors refer to traversing the crossing – excellent indicates very little roughness with a vehicle crossing over the tracks, poor indicates a high degree of ride roughness for a vehicle passing over the tracks.

The current FDOT Five Year Work Program was reviewed to determine if any crossings were scheduled for repair or upgrade.

Using the information from the various reports listed above, qualitative rankings were developed to assess rail crossings in need of potential improvements. This ranking criterion is as follows:

- Crossing is in excellent condition per FDOT records – 0 impact points.
- Crossing is in good condition per FDOT records – 1 impact point.
- Crossing meets is in fair condition per FDOT records – 2 impact points.
- Crossing is in poor condition per FDOT records – 3 impact points.
- Crossing not evaluated per FDOT – 4 impact points.

Any crossing in the inventory within the FDOT 5 year work program received 2 extra points in addition to the impact points awarded for the condition as described in the FDOT records. Grade crossings on Ad-Hoc List received 1 extra point in addition to the condition score. The additional penalty points indicate that the grade crossing’s issues were significant enough to receive priority treatment, evidenced by inclusion in the work program and Ad-Hoc lists. The additional points are reflective of the existing condition of the grade crossing, which is poor enough to warrant

priority improvement, not the planned future condition of the grade crossing, as would occur as a result of the improvements scheduled through the work program or Ad-Hoc list.

Table 2 provides a summary of the current crossing conditions.

### 3.2.2 Functional Classification of Roadway

This parameter described the significance of the crossed roadway in terms of its classification as an arterial, collector or local roadway. This criterion also considered if the roadway was a part of the local, State or Federal roadway system. Information pertaining to classification was obtained from FDOT and Polk County GIS resources found on each agency's website. These websites are:

- <http://polktpo.com/downloads/149-Roadway-Network-Database>
- <http://www.dot.state.fl.us/planning/statistics/gis/road.shtm>

The ranking criterion is based on the following:

- Local Road – Non State/Non Federal System – 0 points
- Local Road – State or Federal System – 1 point
- Collector – Non State/Non Federal System – 2 point
- Collector – State or Federal System – 3 points
- Arterial – Non State/Non Federal System – 4 points
- Arterial – State or Federal System – 5 points

In addition, for all grade crossings the following notation indicates the type of road crossed by the railroad:

<b>Table Notation</b>	<b>Roadway Type</b>
Driveway	Private Drive
2U or 2U N	2 Lane Undivided
4U	4 Lane Undivided
4D	4 Lane Divided
6D	6 Lane Divided
4F	4 Lane Freeway/Expressway
6F	6 Lane Freeway/Expressway

Table 3 provides a summary evaluation related to the roadway location and functional classification.

**Table 2**  
**Rail Crossing Condition**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Crossing Condition (1)	Crossing Condition Evaluation Points (2)
1	AR	622855S	1st Street NW	Urban Collector	County	2U N	excellent (on Ad-Hoc List Top 800 - rough transition)	1
2	AR	622856Y	Oak Ave NW	Urban Collector	County	2U N	excellent	0
3	AR	622857F	Deeson Rd	Urban Collector	County	2U	good (on Ad-Hoc List Top 800 - rough transition)	2
5	AR	622858M	UnNamed Road Crossing	Private	Private	Driveway	NA	3
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	Private	Driveway	excellent	0
7	AR	622860N	Youngs Ridge Rd	Local Residential	County	2U N	good	1
8	AR	622861V	Strickland Rd	Local Residential	County	2U N	poor	3
9	AR	622862C	Private Road	Private	Private		good	1
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	County	2U	excellent (on Ad-Hoc List Top 800 large hump or sag)	1
11	AR	622864R	Sleepy Hill Rd	Urban Collector	County	2U	good	1
12	AR	622866E	CR 582 Knights Station	Urban Collector	County	2U	Not Rated	4
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial		6F	NA - grade separated	0
14	AR	927709-6	Fairbanks Street	Urban Collector	County	2U	good	1
15	AR	624286V	10th St	Urban Collector	County	2U	good	1
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial		4D	NA - grade separated	0
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	State	4D	NA - grade separated	0
18	A	624289R	New York Avenue S	Urban Collector	City of Lakeland	2U	excellent	0
19	A	624164R	Missouri Ave N	Urban Collector	City of Lakeland	2U	excellent	0
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	State	4D	excellent (on Ad-Hoc List Top 800 - smooth transition)	1
21	A	624162C	Tennessee Avenue	Urban Collector	City of Lakeland	2U	excellent	0
22	A	624161V	Kentucky Avenue	Urban Collector	City of Lakeland	2U	excellent (in WP - 418278-1 Rail Safety Project FY 2009)	2
23	A	624160N	Massachusetts Avenue	Urban Collector	State	4U	excellent (in WP - 423345-1 Rail Safety Project FY 2013) (on Ad-Hoc List Top 800 smooth transition)	2
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	State	4D	NA - grade separated	0

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Crossing Condition (1)	Crossing Condition Evaluation Points (2)
25	A	624158M	Ingraham Avenue	Urban Collector	City of Lakeland	4U	excellent (in WP - 420819-1 Rail Safety Project FY 2009) (on Ad-Hoc List Top 800 smooth transition)	3
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	State	4D	NA - grade separated (in WP 423341-1 Rail Safety Project FY 2010)	2
27	A	624156Y	Gary Road (train over)	Urban Collector	State	2U	NA - grade separated	0
28	A	624155S	Interlachen Pkwy	Urban Collector		2U	Not Rated	4
29	A	624154K	Canal Ave	Urban Collector	County	2U	excellent	0
30	A	624153D	Fairway Ave	Urban Collector	County	2U N	excellent (on Ad-Hoc List Top 800 smooth transition)	1
31	A	624152W	N. Eastside Drive	Urban Collector	County	2U N	excellent (on Ad-Hoc List Top 800 smooth transition)	1
32	A	624151P	Combee Road (SR 659)	Minor Arterial	State	2U	good (on Ad-Hoc List Top 800 smooth transition)	2
33	A	624150H	Fish Hatchery Road	Urban Collector	County	2U	good (on Ad-Hoc List Top 800 rough transition)	2
34	A	624149N	Reynolds Road	Urban Collector	County	2U	excellent (on Ad-Hoc List Top 800 smooth transition)	1
35	A	623085B	Old Dixie Highway	Urban Collector	County	2U N	excellent (on Ad-Hoc List Top 800 smooth transition)	1
36	A	623084U	Payne Street	Local Residential	County	2U N	excellent	0
37	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	NA - grade separated	0
38	A	623083M	Neptune Road (Private)	Private	Private	Driveway	excellent	0
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	State	2U	excellent (on Ad-Hoc List Top 800 smooth transition)	1
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	County	2U	excellent	0
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	County	2U	excellent	1
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	County	2U	fair (On Ad-Hoc List Top 800 smooth transition)	3
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	County	2U	excellent (on Ad-Hoc List Top 800 smooth transition)	1

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Crossing Condition (1)	Crossing Condition Evaluation Points (2)
44	S	625396J	Spirit Lake Road	Urban Collector	County	4D	excellent (on Ad-Hoc List Top 800 smooth transition)	1
45	S	625397R	Coleman Road	Urban Collector	County	2U	excellent	0
46	S	625398X	24th Street	Local Residential	City of Winter Haven	2U	excellent	0
47	S	625399E	21st Street	Urban Collector	City of Winter Haven	2U	excellent	0
48	S	625400W	15th Street	Urban Collector	City of Winter Haven	2U	excellent (on Ad-Hoc List Top 800 large hump or sag)	1
49	S	625401D	Lake Shipp Drive	Urban Collector	City of Winter Haven	2U	excellent (on Ad-Hoc List Top 800 Hump/rough transition)	1
50	S	625402K	Orrin Ave	Local Commercial	City of Winter Haven	2U	excellent	0
51	S	625403S	Private Central Fla Gas Drive	Private	Private	Driveway	excellent	0
52	S	625404Y	7th Street SW	Urban Collector	County	2U	excellent (on Ad-Hoc Top 800 List smooth transition)	1
53	S	625405F	Avenue R Southwest	Local Commercial	City of Winter Haven	2U	excellent	0
54	S	623041B	Private Road	Private	Private	Driveway	Not Rated	3
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	State	6D	NA - grade separated	0
56	S	625409H	American Superior Blvd	Urban Collector	County	2U	excellent (on Ad-Hoc List Top 800 rough transition)	1
57	S	625410C	Croton Road	Local Residential	County	2U N	excellent	0
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed			
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	County	2U	good (on Ad-Hoc List Top 800 Large Hump or Sag)	2
60	S	625414E	Macon Road	Local Residential	County	2U N	excellent	0
61	S	625415L	Eagle Lake Loop Road	Urban Collector	County	2U	excellent (on Ad-Hoc List Top 800 smooth transition)	1
62	S	625417A	Pollard Road	Local Residential	County	2U N	excellent	0
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	County	2U	excellent	0
64	S	625419N	SR 60	Principal Arterial	State	4D	excellent (on Ad-Hoc List Top 800 "rough" smooth transition)	1
65	S	625420H	Old Ice House Road	Local Commercial	County	2U	fair (On Ad-Hoc List Top 800 rough transition)	3

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Crossing Condition (1)	Crossing Condition Evaluation Points (2)
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	County	2U N	excellent (on Ad-Hoc List Top 800 smooth transition)	1
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	County	2U	excellent	0
68	NA	NA	intentionally left blank	NA				
69	A	624304R	County Line Road	Urban Collector	County	4D	good	1
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	NA - grade separated	0
71	A	624303J	Clark Road	Local Commercial	County	2U	excellent	0
72	A	624302C	Browning Road	Local Commercial	County	2U N	excellent	0
73	A	624300N	SR 572 Airport Road	Minor Arterial	State	2U	good (in WP - 424259-1 Rail Safety Project FY 2009 and 423344-1 FY 2012) (On Ad-Hoc List Top 800 - smooth Transition)	4
74	A	624299W	Gay Road	Urban Collector	County	2U N	excellent (on Ad-Hoc Top 800 List smooth transition)	1
75	A	624268P	Wabash Road Avenue	Urban Collector	County	2U	good (in WP - 424258-1 Rail Safety Project FY 2009) (On Ad-Hoc List Top 800 - rough crossing)	4

(1) - Crossing Condition from FDOT Diagnostic Review Reports or FDOT AD-HOC Listing of Rail Crossings - Top 800 for Improvement District 1

- (2)
- Crossing is in excellent condition per FDOT records – 0 impact points.
  - Crossing is in good condition per FDOT records – 1 impact point.
  - Crossing meets is in fair condition per FDOT records – 2 impact points.
  - Crossing is in poor condition per FDOT records – 3 impact points.
  - Crossing not evaluated per FDOT – 4 impact points.
  - Crossing not evaluated and meets noted conditions below – 5 impact points.
- (Notes: Any crossing in the inventory within the FDOT 5 year work program will get 2 extra points on Ad-Hoc List will get 1 extra point)

**Table 3**  
**Rail Crossing Functional Classification**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Functional Classification Evaluation Points (1)
1	AR	622855S	1st Street NW	Urban Collector	County	2U N	2
2	AR	622856Y	Oak Ave NW	Urban Collector	County	2U N	2
3	AR	622857F	Deeson Rd	Urban Collector	County	2U	3
5	AR	622858M	UnNamed Road Crossing	Private	Private	Driveway	0
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	Private	Driveway	0
7	AR	622860N	Youngs Ridge Rd	Local Residential	County	2U N	0
8	AR	622861V	Strickland Rd	Local Residential	County	2U N	0
9	AR	622862C	Private Road	Private	Private		0
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	County	2U	3
11	AR	622864R	Sleepy Hill Rd	Urban Collector	County	2U	2
12	AR	622866E	CR 582 Knights Station	Urban Collector	County	2U	3
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial		6F	5
14	AR	927709-6	Fairbanks Street	Urban Collector	County	2U	2
15	AR	624286V	10th St	Urban Collector	County	2U	3
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial		4D	5
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	State	4D	3
18	A	624289R	New York Avenue S	Urban Collector	City of Lakeland	2U	3
19	A	624164R	Missouri Ave N	Urban Collector	City of Lakeland	2U	2
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	State	4D	5
21	A	624162C	Tennessee Avenue	Urban Collector	City of Lakeland	2U	2
22	A	624161V	Kentucky Avenue	Urban Collector	City of Lakeland	2U	2
23	A	624160N	Massachusetts Avenue	Urban Collector	State	4U	3
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	State	4D	3
25	A	624158M	Ingraham Avenue	Urban Collector	City of Lakeland	4U	3
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	State	4D	3

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Functional Classification Evaluation Points (1)
27	A	624156Y	Gary Road (train over)	Urban Collector	State	2U	3
28	A	624155S	Interlachen Pkway	Urban Collector		2U	3
29	A	624154K	Canal Ave	Urban Collector	County	2U	2
30	A	624153D	Fairway Ave	Urban Collector	County	2U N	2
31	A	624152W	N. Eastside Drive	Urban Collector	County	2U N	2
32	A	624151P	Combee Road (SR 659)	Minor Arterial	State	2U	5
33	A	624150H	Fish Hatchery Road	Urban Collector	County	2U	2
34	A	624149N	Reynolds Road	Urban Collector	County	2U	3
35	A	623085B	Old Dixie Highway	Urban Collector	County	2U N	2
36	A	623084U	Payne Street	Local Residential	County	2U N	0
37	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	5
38	A	623083M	Neptune Road (Private)	Private	Private	Driveway	0
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	State	2U	5
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	County	2U	3
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	County	2U	3
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	County	2U	3
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	County	2U	3
44	S	625396J	Spirit Lake Road	Urban Collector	County	4D	2
45	S	625397R	Coleman Road	Urban Collector	County	2U	2
46	S	625398X	24th Street	Local Residential	City of Winter Haven	2U	0
47	S	625399E	21st Street	Urban Collector	City of Winter Haven	2U	2
48	S	625400W	15th Street	Urban Collector	City of Winter Haven	2U	2
49	S	625401D	Lake Shipp Drive	Urban Collector	City of Winter Haven	2U	3
50	S	625402K	Orrin Ave	Local Commercial	City of Winter Haven	2U	0
51	S	625403S	Private Central Fla Gas Drive	Private	Private	Driveway	0



Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Functional Classification Evaluation Points (1)
52	S	625404Y	7th Street SW	Urban Collector	County	2U	2
53	S	625405F	Avenue R Southwest	Local Commercial	City of Winter Haven	2U	0
54	S	623041B	Private Road	Private	Private	Driveway	0
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	State	6D	5
56	S	625409H	American Superior Blvd	Urban Collector	County	2U	2
57	S	625410C	Croton Road	Local Residential	County	2U N	0
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed		
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	County	2U	3
60	S	625414E	Macon Road	Local Residential	County	2U N	0
61	S	625415L	Eagle Lake Loop Road	Urban Collector	County	2U	2
62	S	625417A	Pollard Road	Local Residential	County	2U N	0
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	County	2U	2
64	S	625419N	SR 60	Principal Arterial	State	4D	5
65	S	625420H	Old Ice House Road	Local Commercial	County	2U	0
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	County	2U N	2
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	County	2U	3
68	NA	NA	intentionally left blank	NA			
69	A	624304R	County Line Road	Urban Collector	County	4D	3
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	5
71	A	624303J	Clark Road	Local Commercial	County	2U	0
72	A	624302C	Browning Road	Local Commercial	County	2U N	0
73	A	624300N	SR 572 Airport Road	Minor Arterial	State	2U	3
74	A	624299W	Gay Road	Urban Collector	County	2U N	2
75	A	624268P	Wabash Road Avenue	Urban Collector	County	2U	3

- (1) Local Road – Non State/Non Federal System – 0 points  
Local Road – State or Federal System – 1 point  
Collector – Non State/Non Federal System – 2 point  
Collector – State or Federal System – 3 points  
Arterial – Non State/Non Federal System – 4 points  
Arterial – State or Federal System – 5 points

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### **3.2.3 Safety**

The safety parameter considers the history of safety incidents at or near each grade crossing, expressed in terms of the site's most recent four year crash history as provided by Polk County. Based on the crash record, each grade crossing location was evaluated using the FDOT's approach for spot locations. This analysis compares the actual crash rate to the critical crash rate. The actual crash rate is determined by site-specific historic crash data. Critical crash rates are determined by the use of standard factors typical to all facilities similar to the actual location. The ratio of the actual crash rate to the critical crash rate is the safety ratio for the grade crossing. Locations with a safety ratio above 1.0 may warrant some type of corrective measures. Crash data was evaluated for the period from 2005 to 2008 (4 years), as follows:

- No significant collision history i.e., computed safety ratios below 1.0 and no increases over 2 to 5 year history – 0 points
- Computed safety ratio below 1.0 and some increase in collisions over 2 to 5 year history – 1 point.
- Computed safety ratio below 1.0 and increase in collisions over 2 to 5 year history – 2 points.
- Computed safety ratio over 1.0 and no increase over 2 to 5 year history – 3 points.
- Computed safety ratio over 1.0 and minimal increase in collisions over 2 to 5 year and may include fatalities – 4 points.
- Computed safety ratio over 1.0 and increase in collisions over 2 to 5 year and may include fatalities – 5 points.

Table 4 provides the results of the safety analyses. As noted within Table 4, 17 crossing locations have safety ratios greater than 1.0.

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**Table 4**  
**Rail Crossing Safety Evaluation**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Safety Evaluation Points (1)
1	AR	622855S	1st Street NW	Urban Collector	County	2U N	0.500	0.248	2.018	2
2	AR	622856Y	Oak Ave NW	Urban Collector	County	2U N	0.000	0.248	0.000	0
3	AR	622857F	Deeson Rd	Urban Collector	County	2U	0.671	0.248	2.709	4
5	AR	622858M	UnNamed Road Crossing	Private	Private	Driveway	0.000	0.249	0.000	0
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	Private	Driveway	0.000	0.249	0.000	0
7	AR	622860N	Youngs Ridge Rd	Local Residential	County	2U N	0.000	0.249	0.000	0
8	AR	622861V	Strickland Rd	Local Residential	County	2U N	0.000	0.249	0.000	0
9	AR	622862C	Private Road	Private	Private		0.000	0.249	0.000	0
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	County	2U	0.156	0.247	0.629	1
11	AR	622864R	Sleepy Hill Rd	Urban Collector	County	2U	0.530	0.248	2.138	3
12	AR	622866E	CR 582 Knights Station	Urban Collector	County	2U	0.265	0.248	1.072	3
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial		6F	0.109	0.267	0.408	0
14	AR	927709-6	Fairbanks Street	Urban Collector	County	2U	0.000	0.248	0.000	0
15	AR	624286V	10th St	Urban Collector	County	2U	0.201	0.247	0.811	2
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial		4D	0.228	0.267	0.855	1
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	State	4D	0.086	0.267	0.323	0
18	A	624289R	New York Avenue S	Urban Collector	City of Lakeland	2U	0.000	0.248	0.000	0
19	A	624164R	Missouri Ave N	Urban Collector	City of Lakeland	2U	0.652	0.248	2.628	5
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	State	4D	0.160	0.459	0.349	0
21	A	624162C	Tennessee Avenue	Urban Collector	City of Lakeland	2U	0.000	0.248	0.000	0
22	A	624161V	Kentucky Avenue	Urban Collector	City of Lakeland	2U	0.000	0.249	0.000	0
23	A	624160N	Massachusetts Avenue	Urban Collector	State	4U	0.000	0.460	0.000	0
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	State	4D	0.049	0.267	0.182	0
25	A	624158M	Ingraham Avenue	Urban Collector	City of Lakeland	4U	0.081	0.460	0.176	0
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	State	4D	0.000	0.267	0.000	0
27	A	624156Y	Gary Road (train over)	Urban Collector	State	2U	0.000	0.248	0.000	0
28	A	624155S	Interlachen Pkway	Urban Collector		2U	0.198	0.248	0.801	0
29	A	624154K	Canal Ave	Urban Collector	County	2U	0.115	0.248	0.465	2
30	A	624153D	Fairway Ave	Urban Collector	County	2U N	0.000	0.248	0.000	0
31	A	624152W	N. Eastside Drive	Urban Collector	County	2U N	0.000	0.248	0.000	0
32	A	624151P	Combee Road (SR 659)	Minor Arterial	State	2U	0.537	0.247	2.172	5
33	A	624150H	Fish Hatchery Road	Urban Collector	County	2U	0.117	0.248	0.472	2
34	A	624149N	Reynolds Road	Urban Collector	County	2U	0.224	0.247	0.904	2

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Safety Evaluation Points (1)
35	A	623085B	Old Dixie Highway	Urban Collector	County	2U N	0.000	0.247	0.000	0
36	A	623084U	Payne Street	Local Residential	County	2U N	0.000	0.248	0.000	0
37	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	0.056	0.317	0.175	2
38	A	623083M	Neptune Road (Private)	Private	Private	Driveway	0.000	0.249	0.000	0
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	State	2U	0.150	0.247	0.605	0
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	County	2U	0.157	0.248	0.632	2
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	County	2U	0.000	0.248	0.000	0
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	County	2U	0.412	0.248	1.664	4
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	County	2U	0.282	0.247	1.138	3
44	S	625396J	Spirit Lake Road	Urban Collector	County	4D	0.430	0.296	1.451	5
45	S	625397R	Coleman Road	Urban Collector	County	2U	0.157	0.248	0.632	2
46	S	625398X	24th Street	Local Residential	City of Winter Haven	2U	0.000	0.248	0.000	0
47	S	625399E	21st Street	Urban Collector	City of Winter Haven	2U	0.000	0.248	0.000	0
48	S	625400W	15th Street	Urban Collector	City of Winter Haven	2U	0.000	0.248	0.000	0
49	S	625401D	Lake Shipp Drive	Urban Collector	City of Winter Haven	2U	0.417	0.247	1.687	5
50	S	625402K	Orrin Ave	Local Commercial	City of Winter Haven	2U	0.000	0.251	0.000	0
51	S	625403S	Private Central Fla Gas Drive	Private	Private	Driveway	0.000	0.248	0.000	0
52	S	625404Y	7th Street SW	Urban Collector	County	2U	0.179	0.248	0.724	2
53	S	625405F	Avenue R Southwest	Local Commercial	City of Winter Haven	2U	0.000	0.248	0.000	0
54	S	623041B	Private Road	Private	Private	Driveway	0.000	0.249	0.000	0
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	State	6D	0.179	0.317	0.565	1
56	S	625409H	American Superior Blvd	Urban Collector	County	2U	0.000	0.248	0.000	0
57	S	625410C	Croton Road	Local Residential	County	2U N	0.000	0.249	0.000	0
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed					
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	County	2U	0.815	0.248	3.293	5
60	S	625414E	Macon Road	Local Residential	County	2U N	0.000	0.251	0.000	0
61	S	625415L	Eagle Lake Loop Road	Urban Collector	County	2U	0.000	0.247	0.000	0
62	S	625417A	Pollard Road	Local Residential	County	2U N	0.000	0.251	0.000	0
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	County	2U	0.652	0.248	2.628	5
64	S	625419N	SR 60	Principal Arterial	State	4D	1.041	0.267	3.896	2
65	S	625420H	Old Ice House Road	Local Commercial	County	2U	0.000	0.255	0.000	0
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	County	2U N	0.000	0.142	0.000	0

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Safety Evaluation Points (1)
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	County	2U	1.305	0.142	9.211	2
68	NA	NA	intentionally left blank	NA						
69	A	624304R	County Line Road	Urban Collector	County	4D	0.447	0.267	1.673	5
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	0.000	0.267	0.000	0
71	A	624303J	Clark Road	Local Commercial	County	2U	0.000	0.248	0.000	0
72	A	624302C	Browning Road	Local Commercial	County	2U N	0.000	0.250	0.000	0
73	A	624300N	SR 572 Airport Road	Minor Arterial	State	2U	0.227	0.247	0.917	2
74	A	624299W	Gay Road	Urban Collector	County	2U N	1.152	0.248	4.643	3
75	A	624268P	Wabash Road Avenue	Urban Collector	County	2U	0.407	0.247	1.643	5

- (1) No significant collision history i.e., computed safety ratios below 1.0 and no increases over 2 to 5 year history – 0 points  
 Computed safety ratio below 1.0 and some increase in collisions over 2 to 5 year history – 1 point.  
 Computed safety ratio below 1.0 and increase in collisions over 2 to 5 year history – 2 points.  
 Computed safety ratio over 1.0 and no increase over 2 to 5 year history – 3 points.  
 Computed safety ratio over 1.0 and minor increase in collisions over 2 to 5 year w/fatalities – 4 points.

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### 3.2.4 System Interconnection

A review was performed for each crossing location to determine what impact each crossing has or will have on system interconnectivity. Specifically, each crossing was evaluated to determine if it met one of the following criteria:

- Not on existing or proposed transit, school, bike or pedestrian route; and local road with upstream or downstream crossings within ½ mile. 0 points. Add 1 point if there are NO crossings up or down stream within ½ mile.
- On existing or proposed transit, school, bike or pedestrian route; and local road with upstream or downstream crossings within ½ mile. 1 point. Add 1 point if NO Crossings within ½ mile.
- Not on existing or proposed transportation transit, school, bike or pedestrian route; and collector with upstream and downstream crossing within ½ mile. 2 points. Add 1 point if NO crossings within ½ mile
- On existing or proposed transportation transit, school, bike or pedestrian route; and collector with upstream and downstream crossings within ½ mile. 3 points. Add 1 point if NO crossings within ½ mile.
- Not on existing or proposed transportation transit, school, bike or pedestrian route; and arterial with upstream or downstream crossings within ½ mile. 4 points. Add 1 point if NO crossings within ½ mile.
- On existing or proposed transportation transit, school, bike or pedestrian route; and arterial with upstream or downstream crossings within ½ mile. 5 points. Add 1 point if NO crossings within ½ mile.

Table 5 provides a summary of this evaluation.

### 3.2.5 Socio-Economic Impacts

The fifth evaluation considers the location of the crossing relative to various social and economic land uses, such as churches, schools, community centers, medical facilities, emergency services (fire, police, hospitals and related uses), libraries and other similar land uses were considered. The criterion used to evaluate each crossing is:

- Not in community, town or city. No cultural, activity or emergency services in proximity (1/4 mile) of crossing. 0 points.
- Not in a community, town or city. Cultural, activity or emergency services in proximity (1/4 mile) of crossing. 1 point.
- In a community, town or city with no cultural, activity or emergency services in proximity (1/4 mile) of crossing. 2 points.
- In a community, town or city with cultural, activity but no emergency services in proximity (1/4 mile) of crossing. 3 points.

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**Table 5**  
**Rail Crossing System Interconnection**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	System Interconnection Evaluation Points (1)
1	AR	622855S	1st Street NW	Urban Collector	County	2U N	1
2	AR	622856Y	Oak Ave NW	Urban Collector	County	2U N	1
3	AR	622857F	Deeson Rd	Urban Collector	County	2U	3
5	AR	622858M	UnNamed Road Crossing	Private	Private	Driveway	0
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	Private	Driveway	0
7	AR	622860N	Youngs Ridge Rd	Local Residential	County	2U N	0
8	AR	622861V	Strickland Rd	Local Residential	County	2U N	0
9	AR	622862C	Private Road	Private	Private		0
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	County	2U	3
11	AR	622864R	Sleepy Hill Rd	Urban Collector	County	2U	1
12	AR	622866E	CR 582 Knights Station	Urban Collector	County	2U	4
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial		6F	0
14	AR	927709-6	Fairbanks Street	Urban Collector	County	2U	1
15	AR	624286V	10th St	Urban Collector	County	2U	4
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	State	4D	0
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	State	4D	0
18	A	624289R	New York Avenue S	Urban Collector	City of Lakeland	2U	1
19	A	624164R	Missouri Ave N	Urban Collector	City of Lakeland	2U	1
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	State	4D	5
21	A	624162C	Tennessee Avenue	Urban Collector	City of Lakeland	2U	1
22	A	624161V	Kentucky Avenue	Urban Collector	City of Lakeland	2U	1
23	A	624160N	Massachusetts Avenue	Urban Collector	State	4U	5
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	State	4D	0
25	A	624158M	Ingraham Avenue	Urban Collector	City of Lakeland	4U	3

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	System Interconnection Evaluation Points (1)
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	State	4D	0
27	A	624156Y	Gary Road (train over)	Urban Collector	State	2U	0
28	A	624155S	Interlachen Pkway	Urban Collector	County	2U	3
29	A	624154K	Canal Ave	Urban Collector	County	2U	0
30	A	624153D	Fairway Ave	Urban Collector	County	2U N	1
31	A	624152W	N. Eastside Drive	Urban Collector	County	2U N	1
32	A	624151P	Combee Road (SR 659)	Minor Arterial	State	2U	5
33	A	624150H	Fish Hatchery Road	Urban Collector	County	2U	1
34	A	624149N	Reynolds Road	Urban Collector	County	2U	3
35	A	623085B	Old Dixie Highway	Urban Collector	County	2U N	2
36	A	623084U	Payne Street	Local Residential	County	2U N	2
37	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	0
38	A	623083M	Neptune Road (Private)	Private	Private	Driveway	0
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	State	2U	5
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	County	2U	1
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	County	2U	1
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	County	2U	3
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	County	2U	3
44	S	625396J	Spirit Lake Road	Urban Collector	County	4D	3
45	S	625397R	Coleman Road	Urban Collector	County	2U	3
46	S	625398X	24th Street	Local Residential	City of Winter Haven	2U	0
47	S	625399E	21st Street	Urban Collector	City of Winter Haven	2U	3
48	S	625400W	15th Street	Urban Collector	City of Winter Haven	2U	3
49	S	625401D	Lake Shipp Drive	Urban Collector	City of Winter Haven	2U	3
50	S	625402K	Orrin Ave	Local Commercial	City of Winter Haven	2U	0
51	S	625403S	Private Central Fla Gas Drive	Private	Private	Driveway	0

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	System Interconnection Evaluation Points (1)
52	S	625404Y	7th Street SW	Urban Collector	County	2U	1
53	S	625405F	Avenue R Southwest	Local Commercial	City of Winter Haven	2U	1
54	S	623041B	Private Road	Private	Private	Driveway	0
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	State	6D	0
56	S	625409H	American Superior Blvd	Urban Collector	County	2U	0
57	S	625410C	Croton Road	Local Residential	County	2U N	1
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed		
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	County	2U	1
60	S	625414E	Macon Road	Local Residential	County	2U N	0
61	S	625415L	Eagle Lake Loop Road	Urban Collector	County	2U	1
62	S	625417A	Pollard Road	Local Residential	County	2U N	0
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	County	2U	2
64	S	625419N	SR 60	Principal Arterial	State	4D	6
65	S	625420H	Old Ice House Road	Local Commercial	County	2U	1
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	County	2U N	2
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	County	2U	4
68	NA	NA	intentionally left blank	NA			6
69	A	624304R	County Line Road	Urban Collector	County	4D	0
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	1
71	A	624303J	Clark Road	Local Commercial	County	2U	1

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	System Interconnection Evaluation Points (1)
72	A	624302C	Browning Road	Local Commercial	County	2U N	5
73	A	624300N	SR 572 Airport Road	Minor Arterial	State	2U	1
74	A	624299W	Gay Road	Urban Collector	County	2U N	4
75	A	624268P	Wabash Road Avenue	Urban Collector	County	2U	3

- (1) Not on existing or proposed transportation (improvement), transit, school, bike or pedestrian route; and local road with upstream or downstream crossings within 1/2 mile. 0 points. Add 1 point if there are No crossings up or down stream within 1/2 mile.
- On existing or proposed transportation (improvement), transit, school, bike, or pedestrian route; and local road with upstream or downstream crossings within 1/2 mile. 1 points. Add 1 point if there are crossings within 1/2 mile.
- Not on existing or proposed transportation (improvement, transit, school bike or pedestrian route; and collector with upstream and downstream crossings within 1/2 mile. 2 points. Add 1 point if No crossings within 1/2 mile.
- On existing or proposed transportation (improvement), transit, school, bike, or pedestrian route; and collector with upstream and downstream crossings within 1/2 mile. 2 points. Add 1 point if No crossings within 1/2 mile.
- Not on existing or proposed transportation (improvement, transit, school bike or pedestrian route; and arterial with upstream and downstream crossings within 1/2 mile. 3 points. Add 1 point if No crossings within 1/2 mile.
- On existing or proposed transportation (improvement), transit, school, bike, or pedestrian route; and arterial with upstream and downstream crossings within 1/2 mile. 3 points. Add 1 point if No crossings within 1/2 mile.

- In a community, town or city with no cultural, activity but emergency services in proximity (1/4 mile). 4 points.
- In a community, town or city with cultural, activity or emergency services in proximity (1/4 mile). 5 points.

Table 6 provides a summary of findings.

### **3.2.6 Other Considerations**

In addition to the evaluation above, a simple survey was emailed to various police, fire and transit providers, asking the following questions:

1. Is there any special protocol or procedures your department uses in routing emergency vehicles taking into account possible conflicts with railroad crossings? If there are any special protocols please list them.
2. Have services by your department ever been impacted by any delay caused by a rail crossing? If so please explain briefly.
3. Is there anything that you feel could be done to minimize time delays experienced at rail crossings for your service response times?
4. It is our understanding that the overall County is working towards better communications related to coordination with other departments and municipalities for 911 services, although only in the planning stages would your department be interested in a dynamic routing coordination system that would include the ability to provide real-time information on trains within your jurisdiction and Polk County?
5. Any other insights, suggestions or information is appreciated, please indicate any thoughts below.

Responses were received from City of Lakeland Police and Fire Departments, Bartow Fire Department and Polk County Transit Services. Responses are provided in Appendix 3. While the results of the survey were not incorporated as scored criteria, the information provided helped to further contextualize the grade crossings and ensure that the parameters described above were accurately assessed for each crossing.

Lakeland Police and Fire Departments responded that at the present time, they did not have special protocols established concerning rail traffic. They did use the over and under passes within the downtown area in routing emergency services. This response was also similar to the City of Bartow Fire Department. The City of Lakeland is in the process of upgrading their communication systems to a proprietary software system called Tiburon, which is a computer aided dispatch program that has records management capabilities for field personnel. Thus it will be important for any telecommunications systems that may be provided to monitor rail movements have the ability to interface with the computer aided dispatch component of the proposed Tiburon system.

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**Table 6**  
**Rail Crossing Social-Economic Evaluation**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Socio-Economic Evaluation Points (1)
1	AR	622855S	1st Street NW	Urban Collector	County	2U N	3
2	AR	622856Y	Oak Ave NW	Urban Collector	County	2U N	3
3	AR	622857F	Deeson Rd	Urban Collector	County	2U	3
5	AR	622858M	UnNamed Road Crossing	Private	Private	Driveway	2
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	Private	Driveway	2
7	AR	622860N	Youngs Ridge Rd	Local Residential	County	2U N	2
8	AR	622861V	Strickland Rd	Local Residential	County	2U N	2
9	AR	622862C	Private Road	Private	Private		3
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	County	2U	3
11	AR	622864R	Sleepy Hill Rd	Urban Collector	County	2U	2
12	AR	622866E	CR 582 Knights Station	Urban Collector	County	2U	3
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	State	6F	2
14	AR	927709-6	Fairbairns Street	Urban Collector	County	2U	2
15	AR	624286V	10th St	Urban Collector	County	2U	2
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	State	4D	3
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	State	4D	3
18	A	624289R	New York Avenue S	Urban Collector	City of Lakeland	2U	3
19	A	624164R	Missouri Ave N	Urban Collector	City of Lakeland	2U	3
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	State	4D	5
21	A	624162C	Tennessee Avenue	Urban Collector	City of Lakeland	2U	5
22	A	624161V	Kentucky Avenue	Urban Collector	City of Lakeland	2U	5

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Socio-Economic Evaluation Points (1)
23	A	624160N	Massachusetts Avenue	Urban Collector	State	4U	5
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	State	4D	5
25	A	624158M	Ingraham Avenue	Urban Collector	City of Lakeland	4U	3
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	State	4D	3
27	A	624156Y	Gary Road (train over)	Urban Collector	State	2U	3
28	A	624155S	Interlachen Pkwy	Urban Collector	County	2U	3
29	A	624154K	Canal Ave	Urban Collector	County	2U	3
30	A	624153D	Fairway Ave	Urban Collector	County	2U N	3
31	A	624152W	N. Eastside Drive	Urban Collector	County	2U N	5
32	A	624151P	Combee Road (SR 659)	Minor Arterial	State	2U	3
33	A	624150H	Fish Hatchery Road	Urban Collector	County	2U	3
34	A	624149N	Reynolds Road	Urban Collector	County	2U	3
35	A	623085B	Old Dixie Highway	Urban Collector	County	2U N	3
36	A	623084U	Payne Street	Local Residential	County	2U N	2
37	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	2
38	A	623083M	Neptune Road (Private)	Private	Private	Driveway	2
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	State	2U	2
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	County	2U	3
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	County	2U	3
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	County	2U	2
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	County	2U	2
44	S	625396J	Spirit Lake Road	Urban Collector	County	4D	2
45	S	625397R	Coleman Road	Urban Collector	County	2U	3

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Socio-Economic Evaluation Points (1)
46	S	625398X	24th Street	Local Residential	City of Winter Haven	2U	3
47	S	625399E	21st Street	Urban Collector	City of Winter Haven	2U	3
48	S	625400W	15th Street	Urban Collector	City of Winter Haven	2U	2
49	S	625401D	Lake Shipp Drive	Urban Collector	City of Winter Haven	2U	2
50	S	625402K	Orrin Ave	Local Commercial	City of Winter Haven	2U	3
51	S	625403S	Private Central Fla Gas Drive	Private	Private	Driveway	3
52	S	625404Y	7th Street SW	Urban Collector	County	2U	3
53	S	625405F	Avenue R Southwest	Local Commercial	City of Winter Haven	2U	3
54	S	623041B	Private Road	Private	Private	Driveway	3
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	State	6D	3
56	S	625409H	American Superior Blvd	Urban Collector	County	2U	3
57	S	625410C	Croton Road	Local Residential	County	2U N	3
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed		
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	County	2U	2
60	S	625414E	Macon Road	Local Residential	County	2U N	2
61	S	625415L	Eagle Lake Loop Road	Urban Collector	County	2U	3
62	S	625417A	Pollard Road	Local Residential	County	2U N	0
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	County	2U	0
64	S	625419N	SR 60	Principal Arterial	State	4D	0
65	S	625420H	Old Ice House Road	Local Commercial	County	2U	0

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Road)	Maintaining Agency (crossing)	Existing Laneage and Type	Socio-Economic Evaluation Points (1)
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	County	2U N	0
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	County	2U	0
68	NA	NA	intentionally left blank	NA			3
69	A	624304R	County Line Road	Urban Collector	County	4D	3
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	State	4F	3
71	A	624303J	Clark Road	Local Commercial	County	2U	2
72	A	624302C	Browning Road	Local Commercial	County	2U N	3
73	A	624300N	SR 572 Airport Road	Minor Arterial	State	2U	3
74	A	624299W	Gay Road	Urban Collector	County	2U N	5
75	A	624268P	Wabash Road Avenue	Urban Collector	County	2U	3

- (1) Not in community, town or city. No cultural, activity or emergency services in proximity (1/4 mile) of crossing. 0 points.
- Not in a community, town or city. Cultural, activity or emergency services in proximity (1/4 mile) of crossing. 1 point.
- In a community, town or city with no cultural, activity or emergency services in proximity (1/4 mile) of crossing. 2 points.
- In a community, town or city with cultural, activity but no emergency services in proximity (1/4 mile) of crossing. 3 points.
- In a community, town or city with no cultural, activity but emergency services in proximity (1/4 mile). 4 points.
- In a community, town or city with cultural, activity or emergency services in proximity (1/4 mile). 5 points.
- Cultural/Activity means - Libraries, historic sites, performing art centers/theaters, senior centers, government centers/services, parks, public recreation (pools, etc.), social security centers, government sponsored employment centers, etc.
- Emergency Services - Public Clinics, Health Department, Hospitals, Police, Fire or EMS

The transit providers indicated that they have technology currently available to consider rail traffic in scheduling but did not do so. Polk County transit indicated that they consider delays in service caused by rail traffic not as critical as vehicle traffic congestion.

### **3.3 Level of Service**

The evaluation parameters described above provide context for each grade crossing, and except where noted, the context is expected to remain constant over the term of the study. This is due in large part to the highly subjective and variable nature of physical development.

Level of service, however, is based on documented historic growth trends, and as a result, can be projected into the future to assess growth in roadway traffic. Historic trends and economic forecasts can also be applied to freight service to anticipate growth in freight traffic in the future. These two factors together provide the level of service analysis for Polk County grade crossings.

The analysis, described in detail below, was performed for the peak, non-peak and daily conditions for the years 2008 and 2030. Level of service in 2030 considers two scenarios: changes in level of service without increased freight train movement and changes in level of service with increased freight train movement. The difference is critical to understand the impact of additional freight train movement on future conditions, as it is a given that roadway traffic will increase in the future, regardless of the situation with freight service. It would not be an accurate assessment to compare the 2008 existing conditions to 2030 conditions with additional freight trains. Doing so would obscure the effect of additional roadway traffic on LOS.

The level of service analysis includes projected roadway traffic volumes, projected freight and passenger rail service (Amtrak), and anticipated future train length. Each of these elements is described in detail below.

#### **3.3.1 Existing and Future Year Traffic Forecasts**

The City of Lakeland, City of Winter Haven, Polk County and FDOT were the primary source of traffic counts obtained for the roadway traffic analysis. Traffic count dates ranged from 2003 to 2008. The majority of traffic counts were taken in 2007 and 2008. It should be noted that a level of service analysis was completed in April 2008 for the S-Line Grade Crossings. (The entire 2008 report is provided in Appendix 2 – Data Resources.)

All traffic information not collected in 2008 was projected to base year 2008 estimates based upon a review of the following data sources:

- Historical Growth Rates from FDOT Traffic Count Stations
- Polk TPO Roadway Network Database
- Polk TPO FSUTMS Model comparison (2009 E+C Network to 2030 Long Range Plan network)

Table 7 provides a summary of growth rates and the resulting traffic projections for 2008, 2010, and 2030 average annual daily traffic (AADT) volumes. Factors to determine peak hour and mid-

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**Table 7**  
**Rail Crossing Evaluation Growth Rates and Estimated 2008, 2010, and 2030 AADT**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Future Year Traffic Growth Rate(s)	Estimated 2008 AADT	Estimated 2010 AADT	Estimated 2030 AADT
1	AR	622855S	1st Street NW	Urban Collector	1.8	4,700	4,900	6,600
2	AR	622856Y	Oak Ave NW	Urban Collector	1.8	1,400	1,500	2,000
3	AR	622857F	Deeson Rd	Urban Collector	1.8	3,600	3,700	4,900
5	AR	622858M	UnNamed Road Crossing	Private	1.8	500	500	700
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	1.8	500	500	700
7	AR	622860N	Youngs Ridge Rd	Local Residential	1.8	500	500	700
8	AR	622861V	Strickland Rd	Local Residential	1.8	300	300	400
9	AR	622862C	Private Road	Private	1.8	500	500	700
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	3.3	15,600	16,600	26,600
11	AR	622864R	Sleepy Hill Rd	Urban Collector	1.8	3,000	3,100	4,200
12	AR	622866E	CR 582 Knights Station	Urban Collector	1.3	6,000	6,100	7,700
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	3.4	74,300	79,200	128,100
14	AR	927709-6	Fairbanks Street	Urban Collector	2.8	2,300	2,400	3,600
15	AR	624286V	10th St	Urban Collector	3.7	8,100	8,700	14,400
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	3.6	39,100	41,800	68,900
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	4.6	28,500	31,000	56,000
18	A	624289R	New York Avenue S	Urban Collector	1.9	2,400	2,500	3,400
19	A	624164R	Missouri Ave N	Urban Collector	1.0	1,200	1,200	1,500
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	3.2	30,200	32,100	50,900
21	A	624162C	Tennessee Avenue	Urban Collector	5.6	1,500	1,600	3,100
22	A	624161V	Kentucky Avenue	Urban Collector	1.7	800	800	1,100
23	A	624160N	Massachusetts Avenue	Urban Collector	1.0	9,400	9,600	11,400
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	1.0	32,400	33,100	39,500
25	A	624158M	Ingraham Avenue	Urban Collector	5.7	10,300	11,400	22,400
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	4.1	14,600	15,700	27,200
27	A	624156Y	Gary Road (train over)	Urban Collector	2.1	6,200	6,500	9,000
28	A	624155S	Interlachen Pkwy	Urban Collector	2.8	4,200	4,400	6,600
29	A	624154K	Canal Ave	Urban Collector	1.8	6,900	7,200	9,600
30	A	624153D	Fairway Ave	Urban Collector	1.8	1,200	1,200	1,700
31	A	624152W	N. Eastside Drive	Urban Collector	1.8	1,900	2,000	2,600
32	A	624151P	Combee Road (SR 659)	Minor Arterial	1.6	20,700	21,400	27,900
33	A	624150H	Fish Hatchery Road	Urban Collector	4.6	7,000	7,600	13,800
34	A	624149N	Reynolds Road	Urban Collector	3.2	10,800	11,500	18,200
35	A	623085B	Old Dixie Highway	Urban Collector	6.0	13,900	15,400	30,300
36	A	623084U	Payne Street	Local Residential	1.8	1,900	2,000	2,600
37	A	0	SR 570 Polk Parkway (train under)	Principal Arterial	8.1	15,200	17,500	40,400
38	A	623083M	Neptune Road (Private)	Private	0.0	500	500	500
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	2.6	16,100	16,900	25,100
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	4.6	5,200	5,700	10,300
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	4.6	5,200	5,700	10,300
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	6.9	6,100	6,900	14,700
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	1.9	14,200	14,700	20,000
44	S	625396J	Spirit Lake Road	Urban Collector	3.1	18,800	19,900	31,200

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Future Year Traffic Growth Rate(s)	Estimated 2008 AADT	Estimated 2010 AADT	Estimated 2030 AADT
45	S	625397R	Coleman Road	Urban Collector	1.8	5,100	5,300	7,100
46	S	625398X	24th Street	Local Residential	1.8	800	800	1,100
47	S	625399E	21st Street	Urban Collector	1.8	7,000	7,300	9,800
48	S	625400W	15th Street	Urban Collector	1.8	3,300	3,400	4,500
49	S	625401D	Lake Shipp Drive	Urban Collector	2.7	7,700	8,100	12,200
50	S	625402K	Orrin Ave	Local Commercial	1.8	100	100	100
51	S	625403S	Private Central Fla Gas Drive	Private	0.0	4,300	4,300	4,300
52	S	625404Y	7th Street SW	Urban Collector	13.8	4,400	5,600	17,600
53	S	625405F	Avenue R Southwest	Local Commercial	1.8	2,700	2,800	3,800
54	S	623041B	Private Road	Private	0.0	500	500	500
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	2.3	40,200	42,000	60,100
56	S	625409H	American Superior Blvd	Urban Collector	1.8	3,200	3,300	4,400
57	S	625410C	Croton Road	Local Residential	1.8	300	400	500
58	S	625411J	Croton Road Crossing Closed	Local Residential	1.8	Crossing Closed		
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	2.9	4,900	5,200	8,000
60	S	625414E	Macon Road	Local Residential	1.8	100	100	200
61	S	625415L	Eagle Lake Loop Road	Urban Collector	3.7	7,700	8,200	13,700
62	S	625417A	Pollard Road	Local Residential	1.8	100	100	100
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	3.5	1,200	1,300	2,200
64	S	625419N	SR 60	Principal Arterial	3.7	24,200	25,900	43,100
65	S	625420H	Old Ice House Road	Local Commercial	1.8	20	20	30
66	S	625421P	West Lake Wales-Alturas Road	Local Minor Collect	1.8	2,500	2,600	3,400
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Local Major Collect	2.6	2,500	2,600	3,800
68	0	0	intentionally left blank	0	0.0	0	0	0
69	A	624304R	County Line Road	Urban Collector	2.0	21,400	22,300	30,700
70	A	???????	SR 570 Polk Parkway (train under)	Principal Arterial	6.1	25,500	28,400	57,700
71	A	624303J	Clark Road	Local Commercial	1.8	3,100	3,200	4,300
72	A	624302C	Browning Road	Local Commercial	1.8	300	300	400
73	A	624300N	SR 572 Airport Road	Minor Arterial	7.0	14,800	16,700	36,000
74	A	624299W	Gay Road	Urban Collector	1.8	1,400	1,400	1,900
75	A	624268P	Wabash Road Avenue	Urban Collector	1.1	7,800	8,000	9,600

(1) 2008 Estimated AADT based on traffic counts (2003 through 2007) from FDOT, Polk County, City of Lakeland, Polk TPO and other available resources.

(2) Growth rate based on average value from historic traffic counts, Polk TPO Adopted FSUTMS Travel Demand (2009 and 2030), Polk County Roadway Network Database and other sources.

(3) Crossings denoted as (train under) or (train over) are provided for informational purposes only. Not excluded from overall study.



day peak conditions were determined by analysis of the permanent FDOT count stations in the project vicinity. Table 8 provides a summary of the factors used to determine peak hour and mid-day peak traffic conditions.

Future year traffic projections are shown in Table 9. Table 9 provides AADT, peak and mid-day peak hour traffic volumes for the years 2008, 2010, and 2030 using the factors derived in Table 8.

### **3.3.2 Existing and Future Year Rail Forecasts**

Existing rail traffic volumes are provided in Figure 2. Estimates for future rail traffic were developed using the National Freight Forecasting model system currently in use by the Federal Railroad Administration and maintained by the Bureau of Transportation Statistics. The model relies on estimates of rail movements based upon various economic factors for the entire nation, adjusted for regional and sub-regional differences in economic production. The model application was applied to the rail lines for Florida with a focus on the rail lines within Polk County.

Table 10 provides the daily forecasts of freight and passenger rail. Figure 3 illustrates these volumes. Passenger or Amtrak service is anticipated to remain constant with 2 passenger trains along the S and A lines respectively.

### **3.3.3 Existing and Future Train Lengths**

CSX provided data for the total number and length of trains crossing various locations throughout Polk County for the time period of January 2008 to September 2008. Much like a roadway, rail traffic volumes vary daily and are a combination of local and regional traffic. This base data was used to develop the existing rail traffic volumes displayed previously in Figure 2 and to develop “average” train lengths. Average train lengths are used to determine adjustments to roadway capacities resulting from the increased delay caused by the crossing time associated with train length.

The information provided by CSX is proprietary; however, it can be summarized to illustrate the estimated average length of trains associated with the daily forecasts much like annualizing traffic counts to the average annual daily traffic or AADT. Existing trains average about 4000 feet in length. Trains will grow in length before additional trains are added to the line. When economic growth is factored in, and based on data provided by USDOT, it is estimated that the average train length in 2030 will be 5800 feet. 5800 was used to calculate delay at grade crossings in 2030. The study team is aware that there are occasionally longer trains that will pass through at grade, but these longer trains do not represent the majority of trains. As a consequence the analysis of delay represents the typical condition, with the understanding that from time to time, delay will be longer due to a long train. The long trains (9,000 ft) are infrequent enough that their impact on mobility is temporary and of little consequence in the context of the typical scenario.

The results of the train length analysis was found to be consistent with the results of studies previously conducted for the rail corridor in Polk County. A more detailed discussion of the analysis of train length can be found in Appendix 3.

### **3.3.4 Level of Service Adjustments**

Levels of service threshold volumes were adjusted to reflect “down time” created by trains. The basic approach to determining levels of service with increase rail traffic was to reduce capacity of the crossing roadway proportionally to the time the road was closed due to a train crossing. Simply stated, adjusting accounts for the overall loss in roadway capacity resulting from the grade crossing. For example, an arterial roadway designed to carry 15,000 ADT cannot provide that capacity in reality if traffic movement is impeded by a grade crossing. Without adjustment, the LOS, which is based on measured capacity versus design capacity, would be misleadingly lower. Adjusting the actual capacity of the roadway to account for the grade crossing provides a more accurate measure of LOS.

Specific calculations related to capacity reductions for level of service threshold volumes are shown in Tables 11 and 12 for freight and Amtrak, respectively. Computed “down time” for roadways during train crossings were based on the permitted speed of the train as regulated by CSX at each crossing plus gate down time (30 seconds) plus clearance intervals of 2 seconds. It is important to note that train speeds are maximum permitted speeds and may not reflect the actual traveling speed of trains through a particular crossing.

Adjusted capacities are provided in Table 13. The methodology for this approach is provided in Appendix 3.

**Table 8**  
**Rail Crossing Evaluation Growth Rates**  
**and Estimated K, D Values for Peak**  
**Hour Traffic\***

Rail Traffic Evaluation

Peak Period		K value	D value
Peak Hour		0.0966	0.553
Mid-Day Peak		0.063	0.519

\* K&D values were taken from FDOT traffic count data for 2007 based on permanent station data.

K – Design hour value for roadway design hour is normally 30<sup>th</sup> highest hour of traffic for the year or in planning 100<sup>th</sup> highest hour for planning analyses

D – Directional factor percentage of greater volume of traffic flow for the highest hour in one direction

Information from FDOT Count Stations:

0023, 0073, 0109, 0142, 0156, 0160, 1007, 3005, 3041, 3125, 5071, 5109, 5116, 5138, 5165, 5172, 5173 and 5187

**Table 9**  
**Rail Crossing Evaluation Growth Rates and Estimated 2008, 2010, and 2030 AADT**  
 Rail Traffic Evaluation

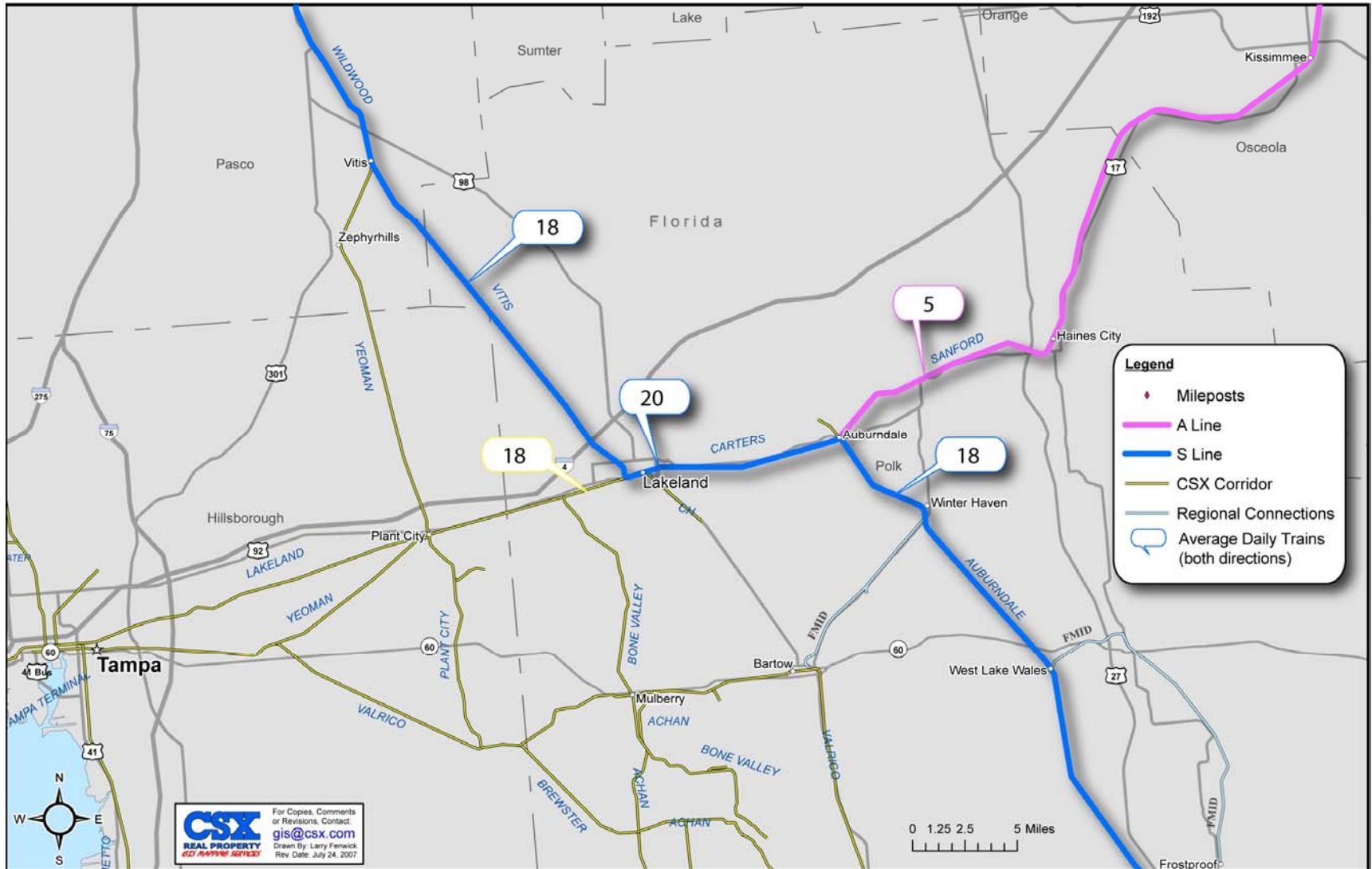
Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Estimated 2008 AADT	Estimated 2008 Peak Hour Volume	Estimated 2008 Mid-Day Peak Hour Volume	Estimated 2010 AADT	Estimated 2010 Peak Hour Volume	Estimated 2010 Mid-Day Peak Hour Volume	Estimated 2030 AADT	Estimated 2030 Peak Hour Volume	Estimated 2030 Mid-Day Peak Hour Volume
1	AR	622855S	1st Street NW	Urban Collector	4,700	251	154	4,900	262	160	6,600	353	216
2	AR	622856Y	Oak Ave NW	Urban Collector	1,400	75	46	1,500	80	49	2,000	107	65
3	AR	622857F	Deeson Rd	Urban Collector	3,600	192	118	3,700	198	121	4,900	262	160
5	AR	622858M	UnNamed Road Crossing	Private	500	27	16	500	27	16	700	37	23
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	500	27	16	500	27	16	700	37	23
7	AR	622860N	Youngs Ridge Rd	Local Residential	500	27	16	500	27	16	700	37	23
8	AR	622861V	Strickland Rd	Local Residential	300	16	10	300	16	10	400	21	13
9	AR	622862C	Private Road	Private	500	27	16	500	27	16	700	37	23
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	15,600	833	511	16,600	887	543	26,600	1,421	871
11	AR	622864R	Sleepy Hill Rd	Urban Collector	3,000	160	98	3,100	166	101	4,200	224	137
12	AR	622866E	CR 582 Knights Station	Urban Collector	6,000	321	196	6,100	326	200	7,700	411	252
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	74,300	3,969	2,432	79,200	4,231	2,592	128,100	6,843	4,193
14	AR	927709-6	Fairbainks Street	Urban Collector	2,300	123	75	2,400	128	79	3,600	192	118
15	AR	624286V	10th St	Urban Collector	8,100	433	265	8,700	465	285	14,400	769	471
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	39,100	2,089	1,280	41,800	2,233	1,368	68,900	3,681	2,255
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	28,500	1,522	933	31,000	1,656	1,015	56,000	2,992	1,833
18	A	624289R	New York Avenue S	Urban Collector	2,400	128	79	2,500	134	82	3,400	182	111
19	A	624164R	Missouri Ave N	Urban Collector	1,200	64	39	1,200	64	39	1,500	80	49
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	30,200	1,613	988	32,100	1,715	1,051	50,900	2,719	1,666
21	A	624162C	Tennessee Avenue	Urban Collector	1,500	80	49	1,600	85	52	3,100	166	101
22	A	624161V	Kentucky Avenue	Urban Collector	800	43	26	800	43	26	1,100	59	36
23	A	624160N	Massachusetts Avenue	Urban Collector	9,400	502	308	9,600	513	314	11,400	609	373
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	32,400	1,731	1,060	33,100	1,768	1,083	39,500	2,110	1,293
25	A	624158M	Ingraham Avenue	Urban Collector	10,300	550	337	11,400	609	373	22,400	1,197	733
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	14,600	780	478	15,700	839	514	27,200	1,453	890
27	A	624156Y	Gary Road (train over)	Urban Collector	6,200	331	203	6,500	347	213	9,000	481	295
28	A	624155S	Interlachen Pkway	Urban Collector	4,200	224	137	4,400	235	144	6,600	353	216
29	A	624154K	Canal Ave	Urban Collector	6,900	369	226	7,200	385	236	9,600	513	314
30	A	624153D	Fairway Ave	Urban Collector	1,200	64	39	1,200	64	39	1,700	91	56

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Estimated 2008 AADT	Estimated 2008 Peak Hour Volume	Estimated 2008 Mid-Day Peak Hour Volume	Estimated 2010 AADT	Estimated 2010 Peak Hour Volume	Estimated 2010 Mid-Day Peak Hour Volume	Estimated 2030 AADT	Estimated 2030 Peak Hour Volume	Estimated 2030 Mid-Day Peak Hour Volume
31	A	624152W	N. Eastside Drive	Urban Collector	1,900	101	62	2,000	107	65	2,600	139	85
32	A	624151P	Combee Road (SR 659)	Minor Arterial	20,700	1,106	677	21,400	1,143	700	27,900	1,490	913
33	A	624150H	Fish Hatchery Road	Urban Collector	7,000	374	229	7,600	406	249	13,800	737	452
34	A	624149N	Reynolds Road	Urban Collector	10,800	577	353	11,500	614	376	18,200	972	596
35	A	623085B	Old Dixie Highway	Urban Collector	13,900	743	455	15,400	823	504	30,300	1,619	992
36	A	623084U	Payne Street	Local Residential	1,900	101	62	2,000	107	65	2,600	139	85
37	A	0	SR 570 Polk Parkway (train under)	Principal Arterial	15,200	812	497	17,500	935	573	40,400	2,158	1,322
38	A	623083M	Neptune Road (Private)	Private	500	27	16	500	27	16	500	27	16
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	16,100	860	527	16,900	903	553	25,100	1,341	821
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	5,200	278	170	5,700	304	187	10,300	550	337
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	5,200	278	170	5,700	304	187	10,300	550	337
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	6,100	326	200	6,900	369	226	14,700	785	481
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	14,200	759	465	14,700	785	481	20,000	1,068	655
44	S	625396J	Spirit Lake Road	Urban Collector	18,800	1,004	615	19,900	1,063	651	31,200	1,667	1,021
45	S	625397R	Coleman Road	Urban Collector	5,100	272	167	5,300	283	173	7,100	379	232
46	S	625398X	24th Street	Local Residential	800	43	26	800	43	26	1,100	59	36
47	S	625399E	21st Street	Urban Collector	7,000	374	229	7,300	390	239	9,800	524	321
48	S	625400W	15th Street	Urban Collector	3,300	176	108	3,400	182	111	4,500	240	147
49	S	625401D	Lake Shipp Drive	Urban Collector	7,700	411	252	8,100	433	265	12,200	652	399
50	S	625402K	Orrin Ave	Local Commercial	100	5	3	100	5	3	100	5	3
51	S	625403S	Private Central Fla Gas Drive	Private	4,300	230	141	4,300	230	141	4,300	230	141
52	S	625404Y	7th Street SW	Urban Collector	4,400	235	144	5,600	299	183	17,600	940	576
53	S	625405F	Avenue R Southwest	Local Commercial	2,700	144	88	2,800	150	92	3,800	203	124
54	S	623041B	Private Road	Private	500	27	16	500	27	16	500	27	16
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	40,200	2,147	1,316	42,000	2,244	1,375	60,100	3,211	1,967
56	S	625409H	American Superior Blvd	Urban Collector	3,200	171	105	3,300	176	108	4,400	235	144
57	S	625410C	Croton Road	Local Residential	300	16	10	400	21	13	500	27	16
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed								
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	4,900	262	160	5,200	278	170	8,000	427	262
60	S	625414E	Macon Road	Local Residential	100	5	3	100	5	3	200	11	7
61	S	625415L	Eagle Lake Loop Road	Urban Collector	7,700	411	252	8,200	438	268	13,700	732	448
62	S	625417A	Pollard Road	Local Residential	100	5	3	100	5	3	100	5	3

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Estimated 2008 AADT	Estimated 2008 Peak Hour Volume	Estimated 2008 Mid-Day Peak Hour Volume	Estimated 2010 AADT	Estimated 2010 Peak Hour Volume	Estimated 2010 Mid-Day Peak Hour Volume	Estimated 2030 AADT	Estimated 2030 Peak Hour Volume	Estimated 2030 Mid-Day Peak Hour Volume
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	1,200	64	39	1,300	69	43	2,200	118	72
64	S	625419N	SR 60	Principal Arterial	24,200	1,293	792	25,900	1,384	848	43,100	2,302	1,411
65	S	625420H	Old Ice House Road	Local Commercial	20	1	1	20	1	1	30	2	1
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collecto	2,500	134	82	2,600	139	85	3,400	182	111
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collecto	2,500	134	82	2,600	139	85	3,800	203	124
68	0	0	intentionally left blank	0	0	0	0	0	0	0	0	0	0
69	A	624304R	County Line Road	Urban Collector	21,400	1,143	700	22,300	1,191	730	30,700	1,640	1,005
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	25,500	1,362	835	28,400	1,517	929	57,700	3,082	1,888
71	A	624303J	Clark Road	Local Commercial	3,100	166	101	3,200	171	105	4,300	230	141
72	A	624302C	Browning Road	Local Commercial	300	16	10	300	16	10	400	21	13
73	A	624300N	SR 572 Airport Road	Minor Arterial	14,800	791	484	16,700	892	547	36,000	1,923	1,178
74	A	624299W	Gay Road	Urban Collector	1,400	75	46	1,400	75	46	1,900	101	62
75	A	624268P	Wabash Road Avenue	Urban Collector	7,800	417	255	8,000	427	262	9,600	513	314

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# Figure 2: 2010 Projected Average Daily Train Movements





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**Table 10**  
**Existing and Future Year Train Forecasts**  
 Rail Traffic Evaluation

Approximate Track Location Number of Trains  Number of Amtrak Trains	2008	2010	2030
AR Line (northwest of Lakeland)			
Trains	10	18	26
Amtrak	0	0	0
A Line (through Lakeland)			
Trains	16	20	27
Amtrak	2	2	2
A Line (east of Auburndale)			
Trains	9	5	5
Amtrak	4	4	4
A Line (west of Lakeland)			
Trains	14	18	25
Amtrak	2	2	2
S Line (south of Auburndale)			
Trains	14	18	25
Amtrak	2	2	2

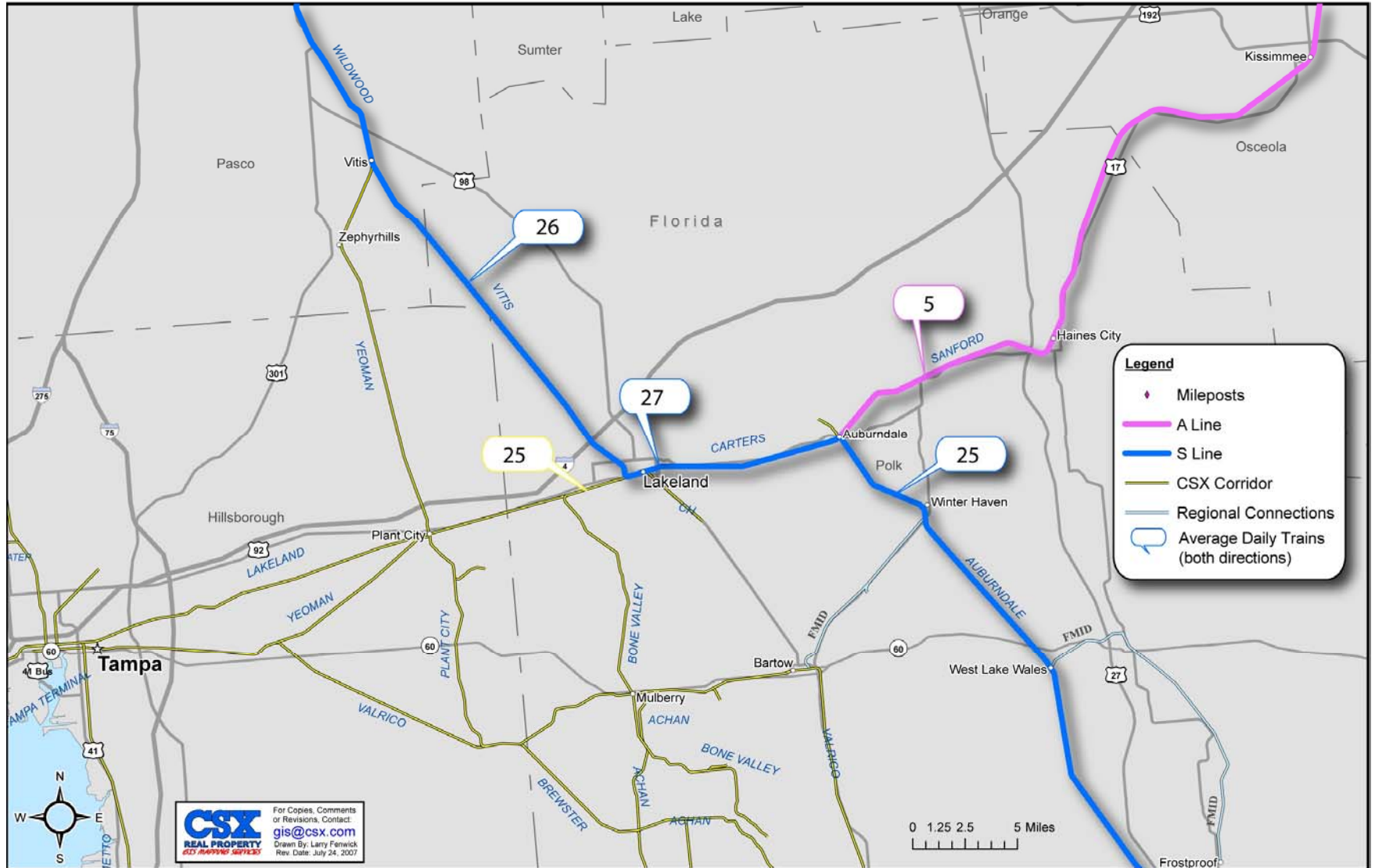
Amtrak - 4 trains per day with 2/2 split at  
 Auburndale (A & S Lines)

Trains - 4 train shift from A to S Line through Lakeland

Source: US DOT's Freight Analysis Framework

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# Figure 3: 2030 (Forecasted) Train Movements



### **3.3.5 Level of Service Analysis Scenarios**

The traffic analysis considered three scenarios:

- 2008 Existing Conditions
- 2030 No Build
- 2030 Build

The distinction between No Build and Build conditions is the basic assumption that rail traffic stays consistent with no growth in the No Build whereas the Build scenario includes the projected rail traffic and train length increase identified previously.

### **3.3.6 Level of Service Analysis**

Level of service analyses were conducted for daily, peak hour and mid-day peak periods based on the traffic volumes as presented in Table 9 and using the adjusted capacities from Tables 11 and 12. 2008 existing conditions are shown on Table 13. Table 14 reflects 2030 No Build conditions. As described above, this scenario uses projected traffic volumes for 2030 but assumes grade crossings will operate under existing rail traffic conditions in terms of rail traffic volume and train length. Table 15 presents 2030 Build conditions, which include projected 2030 roadway traffic volumes and 2030 projected rail traffic volumes and train lengths.

Table 16 compares conditions in 2008 to the 2030 No Build condition, which is an evaluation of the change in level of service based only on increases in roadway traffic, the result of economic and residential growth within Polk County and the larger region. Of the 74 grade crossings evaluated, 37 show decreases in LOS between 2008 and 2030 during at least one measured period (peak, mid-day, or daily LOS). Some declines were modest, such as the mid-day peak LOS on Polk Parkway, which declined from LOS A in 2008 to LOS B in 2030. Other declines were more dramatic. For example, the adjusted daily LOS for SR 60 is B in 2008, but declines to LOS F in 2030.

It is important to note that in terms of traffic analysis, only LOS declines that result in a LOS lower than the LOS Standard for a grade crossing are considered adverse impacts.

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**Table 11**  
**Capacity Reduction Calculations - Freight Trains**  
 Rail Traffic Evaluation

Study Location ID Number	Crossing Number	Rail Line	US DOT ID Number	Street Name	Daily										Peak Hour										Mid-Day																																				
					Train Length (ft) (a)	Train Length (ft) (b)	Train Speed (mph)	Time for Train to Pass the location (sec) (a)	Time for Train to Pass the location (sec) (b)	Gate Down Time (sec)	Clearance Time (sec)	Total Number of Trains	Number of Trains (a)	Number of Trains (b)	Total Train Delay Time (sec)	% Capacity Reduction	Train Length (ft) (a)	Train Length (ft) (b)	Speed of Train (mph)	Time for Train to Pass the location (sec) (a)	Time for Train to Pass the location (sec) (b)	Gate Down Time (sec)	Clearance Time (sec)	Total Number of Trains	Number of Trains (a)	Number of Trains (b)	Total Train Delay Time (sec)	% Capacity Reduction	Train Length (ft) (a)	Train Length (ft) (b)	Speed of Train (mph)	Time for Train to Pass the location (sec) (a)	Time for Train to Pass the location (sec) (b)	Gate Down Time (sec)	Clearance Time (sec)	Total Number of Trains	Number of Trains (a)	Number of Trains (b)	Total Train Delay Time (sec)	% Capacity Reduction																					
1	187	AR	622855S	1st Street NW	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
2	188	AR	622856V	Oak Ave NW	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
3	189	AR	622857F	Deeson Rd	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
5	???	AR	622858M	UnNamed Road Crossing	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
6	191	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
7	192	AR	622860N	Youngs Ridge Rd	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
8	193	AR	622861V	Strickland Rd	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
9	194	AR	622862C	Private Road	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
10	195	AR	622863J	CR 542A Galloway Rd	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
11	196	AR	622864R	Sleepy Hill Rd	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
12	197	AR	622866E	CR 582 Knights Station	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
13	198	AR	622867L	I-4/SR 400 (train over)	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0.00%		
14	199	AR	927709-6	Fairbanks Street	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
15	200	AR	624286V	10th St	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%	5,800	6,625	60	66	76	30	2	26	17	9	2638	3.05%									
16	201	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0.00%	
17	202	A	624290K	SR 563 Sikes Road Blvd (train over)	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%	
18	203	A	624289R	New York Avenue S	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%									
19	204	A	624164R	Missouri Ave N	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%									
20	205	A	624163J	SR 35 North Florida Ave	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%									
21	206	A	624162C	Tennessee Avenue	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%									
22	207	A	624161V	Kentucky Avenue	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%									
23	208	A	624160N	Massachusetts Avenue	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%	5,800	6,625	25	158	181	30	2	27	18	9	5337	6.18%									
24	209	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%		
25	210	A	624158M	Ingraham Avenue	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%									
26	211	A	624157F	US 98 Lake Parker Ave (train over)	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%	
27	212	A	624156V	Gary Road (train over)	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%
28	213	A	624155S	Interlachen Pkwy	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%									
29	214	A	624154K	Canal Ave	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.17%									
30	215	A	624153D	Fairway Ave	5,800	6,625	60	66	76	30	2	27	18	9	2736	3.																																													

Study Location ID Number	Crossing Number	Rail Line	US DOT ID Number	Street Name	Daily											Peak Hour											Mid-Day													
					Train Length (ft) (a)	Train Length (ft) (b)	Train Speed (mph)	Time for Train to Pass the location (sec) (a)	Time for Train to Pass the location (sec) (b)	Gate Down Time (sec)	Clearance Time (sec)	Total Number of Trains	Number of Trains (a)	Number of Trains (b)	Total Train Delay Time (sec)	% Capacity Reduction	Train Length (ft) (a)	Train Length (ft) (b)	Speed of Train (mph)	Time for Train to Pass the location (sec) (a)	Time for Train to Pass the location (sec) (b)	Gate Down Time (sec)	Clearance Time (sec)	Total Number of Trains	Number of Trains (a)	Number of Trains (b)	Total Train Delay Time (sec)	% Capacity Reduction	Train Length (ft) (a)	Train Length (ft) (b)	Speed of Train (mph)	Time for Train to Pass the location (sec) (a)	Time for Train to Pass the location (sec) (b)	Gate Down Time (sec)	Clearance Time (sec)	Total Number of Trains	Number of Trains (a)	Number of Trains (b)	Total Train Delay Time (sec)	% Capacity Reduction
69	353	A	624304R	County Line Road	5,800	6,625	60	66	76	30	2	25	17	8	2530	2.93%	5,800	6,625	60	66	76	30	2	5	3	2	510	14.17%	5,800	6,625	60	66	76	30	2	3	2	1	304	8.44%
70	354	A	NA	SR 570 Polk Parkway (train under)	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0.00%
71	356	A	624303J	Clark Road	5,800	6,625	60	66	76	30	2	25	17	8	2530	2.93%	5,800	6,625	60	66	76	30	2	5	3	2	510	14.17%	5,800	6,625	60	66	76	30	2	3	2	1	304	8.44%
72	357	A	624302C	Browning Road	5,800	6,625	60	66	76	30	2	25	17	8	2530	2.93%	5,800	6,625	60	66	76	30	2	5	3	2	510	14.17%	5,800	6,625	60	66	76	30	2	3	2	1	304	8.44%
73	358	A	624300N	SR 572 Airport Road	5,800	6,625	60	66	76	30	2	25	17	8	2530	2.93%	5,800	6,625	60	66	76	30	2	5	3	2	510	14.17%	5,800	6,625	60	66	76	30	2	3	2	1	304	8.44%
74	359	A	624299W	Gay Road	5,800	6,625	60	66	76	30	2	25	17	8	2530	2.93%	5,800	6,625	60	66	76	30	2	5	3	2	510	14.17%	5,800	6,625	60	66	76	30	2	3	2	1	304	8.44%
75	360	A	624268P	Wabash Road Avenue	5,800	6,625	60	66	76	30	2	25	17	8	2530	2.93%	5,800	6,625	60	66	76	30	2	5	3	2	510	14.17%	5,800	6,625	60	66	76	30	2	3	2	1	304	8.44%



**Table 12**  
**Capacity Reduction Calculations - Amtrak Trains**  
 Rail Traffic Evaluation

Study Location ID Number	Crossing Number	Rail Line	US DOT ID Number	Street Name	Daily								Peak Hour								Mid-day							
					Train Length (ft)	Train Speed (mph)	Time for Train to Pass the location (sec)	Gate Down Time (sec)	Clearance Time (sec)	Number of Trains	Total Train Delay Time (sec)	% Capacity Reduction	Length of Train	Speed of Train (mph)	Time for Train to Pass the location (sec)	Gate Down Time (sec)	Clearance Time (sec)	Number of Trains	Total Train Delay Time (sec)	% Capacity Reduction	Length of Train	Speed of Train (mph)	Time for Train to Pass the location (sec)	Gate Down Time (sec)	Clearance Time (sec)	Number of Trains	Total Train Delay Time (sec)	% Capacity Reduction
1	187	AR	622855S	1st Street NW	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
2	188	AR	622856Y	Oak Ave NW	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
3	189	AR	622857F	Deeson Rd	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
5	???	AR	622858M	UnNamed Road Crossing	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
6	191	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
7	192	AR	622860N	Youngs Ridge Rd	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
8	193	AR	622861V	Strickland Rd	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
9	194	AR	622862C	Private Road	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
10	195	AR	622863J	CR 542A Galloway Rd	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
11	196	AR	622864R	Sleepy Hill Rd	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
12	197	AR	622866E	CR 582 Knights Station	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
13	198	AR	622867L	I-4/SR 400 (train over)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
14	199	AR	927709-6	Fairbanks Street	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
15	200	AR	624286V	10th St	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
16	201	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
17	202	A	624290K	SR 563 Sikes Road Blvd (train over)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
18	203	A	624289R	New York Avenue S	1,300	25	36	30	2	8	544	0.63%	1,300	25	36	30	2	2	136	3.78%	1,300	25	36	30	2	3	204	5.67%
19	204	A	624164R	Missouri Ave N	1,300	25	36	30	2	8	544	0.63%	1,300	25	36	30	2	2	136	3.78%	1,300	25	36	30	2	3	204	5.67%
20	205	A	624163J	SR 35 North Florida Ave	1,300	25	36	30	2	8	544	0.63%	1,300	25	36	30	2	2	136	3.78%	1,300	25	36	30	2	3	204	5.67%
21	206	A	624162C	Tennessee Avenue	1,300	25	36	30	2	8	544	0.63%	1,300	25	36	30	2	2	136	3.78%	1,300	25	36	30	2	3	204	5.67%
22	207	A	624161V	Kentucky Avenue	1,300	25	36	30	2	8	544	0.63%	1,300	25	36	30	2	2	136	3.78%	1,300	25	36	30	2	3	204	5.67%
23	208	A	624160N	Massachusetts Avenue	1,300	25	36	30	2	8	544	0.63%	1,300	25	36	30	2	2	136	3.78%	1,300	25	36	30	2	3	204	5.67%
24	209	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
25	210	A	624158M	Ingraham Avenue	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
26	211	A	624157F	US 98 Lake Parker Ave (train over)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
27	212	A	624156Y	Gary Road (train over)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
28	213	A	624155S	Interlachen Pkway	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
29	214	A	624154K	Canal Ave	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
30	215	A	624153D	Fairway Ave	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
31	216	A	624152W	N. Eastside Drive	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
32	217	A	624151P	Combee Road (SR 659)	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
33	218	A	624150H	Fish Hatchery Road	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
34	219	A	624149N	Reynolds Road	1,300	75	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
35	220	A	623085B	Old Dixie Highway	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
36	221	A	623084U	Payne Street	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
37	222	A	0	SR 570 Polk Parkway (train under)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0.00%	
38	223	A	623083M	Neptune Road (Private)	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
39	224	A	623082F	Recker Highway (SR 655)	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
40	325	A/S	623076C	CR 655A McKean Street (South Crossing)	1,300	60	15	30	2	8	376	0.44%	1,300	40	23	30	2	2	110	3.06%	1,300	40	23	30	2	3	165	4.58%
41	326	S	623081Y	CR 655A McKean Street (North Crossing)	1,300	20	45	30	2	8	616	0.71%	1,300	20	45	30	2	2	154	4.28%	1,300	20	45	30	2	3	231	6.42%
42	327	S	625391A	CR 544A West Derby Avenue	1,300	20	45	30	2	8	616	0.71%	1,300	20	45	30	2	2	154	4.28%	1,300	20	45	30	2	3	231	6.42%
43	328	S	625395C	CR 542 Avenue G Northwest	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
44	329	S	625396J	Spirit Lake Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
45	330	S	625397R	Coleman Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
46	331	S	625398X	24th Street	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
47	332	S	625399E	21st Street	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
48	333	S	625400W	15th Street	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
49	334	S	625401D	Lake Shipp Drive	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%
50	335	S	625402K	Orrin Ave	1,300	30	30	30	2	8	496	0.57%	1,300	30	30	30	2	2	124	3.44%	1,300	30	30	30	2	3	186	5.17%

Study Location ID Number	Crossing Number	Rail Line	US DOT ID Number	Street Name	Daily								Peak Hour								Mid-day											
					Train Length (ft)	Train Speed (mph)	Time for Train to Pass the location (sec)	Gate Down Time (sec)	Clearance Time (sec)	Number of Trains	Total Train Delay Time (sec)	% Capacity Reduction	Length of Train	Speed of Train (mph)	Time for Train to Pass the location (sec)	Gate Down Time (sec)	Clearance Time (sec)	Number of Trains	Total Train Delay Time (sec)	% Capacity Reduction	Length of Train	Speed of Train (mph)	Time for Train to Pass the location (sec)	Gate Down Time (sec)	Clearance Time (sec)	Number of Trains	Total Train Delay Time (sec)	% Capacity Reduction				
51	336	S	625403S	Private Central Fla Gas Drive	1,300	30	30	30	2	8	496	0.57%	1,300	30	30	30	2	2	124	3.44%	1,300	30	30	30	2	3	186	5.17%				
52	337	S	625404Y	7th Street SW	1,300	30	30	30	2	8	496	0.57%	1,300	30	30	30	2	2	124	3.44%	1,300	30	30	30	2	3	186	5.17%				
53	338	S	625405F	Avenue R Southwest	1,300	30	30	30	2	8	496	0.57%	1,300	30	30	30	2	2	124	3.44%	1,300	30	30	30	2	3	186	5.17%				
54	339	S	623041B	Private Road	1,300	30	30	30	2	8	496	0.57%	1,300	30	30	30	2	2	124	3.44%	1,300	30	30	30	2	3	186	5.17%				
55	340	S	625406M	US 17 SR 555 3rd Street (train under)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%				
56	341	S	625409H	American Superior Blvd	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
57	342	S	625410C	Croton Road	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
58	343	S	625411J	Croton Road Crossing Closed	Crossing Closed																											
59	344	S	625413X	CR 540A Eloise Loop Road	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
60	345	S	625414E	Macon Road	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
61	346	S	625415L	Eagle Lake Loop Road	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
62	347	S	625417A	Pollard Road	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
63	348	S	625418G	Old Bartow-Lk Wales Rd	1,300	65	14	30	2	8	368	0.43%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
64	349	S	625419N	SR 60	1,300	65	14	30	2	8	368	0.43%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
65	350	S	625420H	Old Ice House Road	1,300	65	14	30	2	8	368	0.43%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
66	351	S	625421P	West Lake Wales-Alturas Road	1,300	65	14	30	2	8	368	0.43%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
67	352	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	1,300	79	12	30	2	8	352	0.41%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
68	0	0	0	intentionally left blank	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%				
69	353	A	624304R	County Line Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
70	354	A	NA	SR 570 Polk Parkway (train under)	0	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0.00%	0	0	0	0	0	0	0	0	0.00%				
71	356	A	624303J	Clark Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
72	357	A	624302C	Browning Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
73	358	A	624300N	SR 572 Airport Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
74	359	A	624299W	Gay Road	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				
75	360	A	624268P	Wabash Road Avenue	1,300	70	13	30	2	8	360	0.42%	1,300	60	15	30	2	2	94	2.61%	1,300	60	15	30	2	3	141	3.92%				

**Table 13**  
**2008 Level of Service Analysis for Rail Crossings**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Daily Capacity Volume	Daily LOS Standard	Estimated 2008 AADT	2008 Daily LOS	Adjusted Daily Capacity Volume	Adjusted Daily LOS	Peak Hour Directional Capacity	Estimated 2008 Peak Hour Volume	2008 Peak Hour LOS	Adjusted Peak Hour Capacity Volume	Adjusted Peak Hour LOS	2008 Mid-day Peak Volume	2008 Mid-day Peak LOS	Adjusted Mid-day Capacity Volume	Adjusted Mid-day Peak LOS
1	AR	622855S	1st Street NW	Urban Collector	14,600	D	4,700	C	14,429	C	760	251	C	717	C	154	C	739	C
2	AR	622856Y	Oak Ave NW	Urban Collector	14,600	D	1,400	C	14,429	C	760	75	C	717	C	46	C	739	C
3	AR	622857F	Deeson Rd	Urban Collector	14,600	D	3,600	C	14,429	C	760	192	C	717	C	118	C	739	C
5	AR	622858M	UnNamed Road Crossing	Private	0		500		0		0	27		0		16		0	
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	0		500		0		0	27		0		16		0	
7	AR	622860N	Youngs Ridge Rd	Local Residential	11,680	D	500	C	11,543	C	608	27	C	573	C	16	C	591	C
8	AR	622861V	Strickland Rd	Local Residential	11,680	D	300	C	11,543	C	608	16	C	573	C	10	C	591	C
9	AR	622862C	Private Road	Private	0		500		0		0	27		0		16		0	
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	15,600	E	15,600	F	15,418	F	810	833	F	764	F	511	D	788	D
11	AR	622864R	Sleepy Hill Rd	Urban Collector	14,600	D	3,000	C	14,429	C	760	160	C	717	C	98	C	739	C
12	AR	622866E	CR 582 Knights Station	Urban Collector	15,500	D	6,000	C	15,319	C	820	321	C	773	C	196	B	798	B
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	81,700	C	74,300	C	81,700	C	4,180	3,969	D	4,180	D	2,432	B	4,180	B
14	AR	927709-6	Fairbainks Street	Urban Collector	14,600	D	2,300	C	14,429	C	760	123	C	717	C	75	C	739	C
15	AR	624286V	10th St	Urban Collector	14,600	D	8,100	C	14,429	C	760	433	C	717	D	265	C	739	C
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	35,700	E	39,100	F	35,700	F	1,860	2,089	F	1,860	F	1,280	B	1,860	B
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	34,500	E	28,500	D	34,500	D	1,800	1,522	D	1,800	D	933	C	1,800	C
18	A	624289R	New York Avenue S	Urban Collector	14,600	D	2,400	C	13,975	C	760	128	C	606	C	79	C	632	C
19	A	624164R	Missouri Ave N	Urban Collector	14,600	D	1,200	C	13,975	C	760	64	C	606	C	39	C	632	C
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	34,500	E	30,200	D	33,023	E	1,800	1,613	E	1,436	F	988	C	1,497	C
21	A	624162C	Tennessee Avenue	Urban Collector	14,600	D	1,500	C	13,975	C	760	80	C	606	C	49	C	632	C
22	A	624161V	Kentucky Avenue	Urban Collector	14,600	D	800	C	13,975	C	760	43	C	606	C	26	C	632	C
23	A	624160N	Massachusetts Avenue	Urban Collector	29,545	D	9,400	C	28,280	C	1,539	502	C	1,227	C	308	C	1,280	C
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	35,700	E	32,400	C	35,700	C	1,860	1,731	D	1,860	D	1,060	B	1,860	B
25	A	624158M	Ingraham Avenue	Urban Collector	29,545	D	10,300	C	28,871	C	1,539	550	C	1,369	C	337	C	1,391	C
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	34,500	E	14,600	C	34,500	C	1,800	780	C	1,800	C	478	C	1,800	C
27	A	624156Y	Gary Road (train over)	Urban Collector	16,900	E	6,200	C	16,900	C	890	331	C	890	C	203	B	890	B
28	A	624155S	Interlachen Pkway	Urban Collector	14,600	D	4,200	C	14,541	C	760	224	C	676	C	137	C	687	C
29	A	624154K	Canal Ave	Urban Collector	14,600	D	6,900	C	14,267	C	760	369	C	676	C	226	C	687	C
30	A	624153D	Fairway Ave	Urban Collector	14,600	D	1,200	C	14,267	C	760	64	C	676	C	39	C	687	C
31	A	624152W	N. Eastside Drive	Urban Collector	14,600	D	1,900	C	14,267	C	760	101	C	676	C	62	C	687	C
32	A	624151P	Combee Road (SR 659)	Minor Arterial	23,500	E	20,700	E	22,964	E	1,120	1,106	F	996	F	677	D	1,012	D
33	A	624150H	Fish Hatchery Road	Urban Collector	14,600	D	7,000	C	14,267	C	760	374	C	676	C	229	C	687	C
34	A	624149N	Reynolds Road	Urban Collector	14,600	D	10,800	D	14,267	D	760	577	D	676	D	353	C	687	C
35	A	623085B	Old Dixie Highway	Urban Collector	14,600	D	13,900	E	14,267	F	760	743	F	676	F	455	D	687	D
36	A	623084U	Payne Street	Local Residential	11,680	D	1,900	C	11,414	C	608	101	C	541	C	62	C	549	C
37	A	0	SR 570 Polk Parkway (train under)	Principal Arterial	67,200	D	15,200	A	67,200	A	3,440	812	A	3,440	A	497	A	3,440	A
38	A	623083M	Neptune Road (Private)	Private	0		500		0		0	27		0		16		0	
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	19,600	D	16,100	D	19,153	D	950	860	D	845	E	527	C	858	C
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	14,600	D	5,200	C	14,215	C	760	278	C	651	C	170	C	698	C

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Daily Capacity Volume	Daily LOS Standard	Estimated 2008 AADT	2008 Daily LOS	Adjusted Daily Capacity Volume	Adjusted Daily LOS	Peak Hour Directional Capacity	Estimated 2008 Peak Hour Volume	2008 Peak Hour LOS	Adjusted Peak Hour Capacity Volume	Adjusted Peak Hour LOS	2008 Mid-day Peak Volume	2008 Mid-day Peak LOS	Adjusted Mid-day Capacity Volume	Adjusted Mid-day Peak LOS
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	14,600	D	5,200	C	13,928	C	760	278	C	576	C	170	C	663	C
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	14,600	D	6,100	C	13,928	C	760	326	C	576	D	200	C	663	C
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	14,600	D	14,200	E	14,299	E	760	759	E	676	F	465	D	710	D
44	S	625396J	Spirit Lake Road	Urban Collector	31,100	D	18,800	C	30,459	C	1,620	1,004	C	1,441	D	615	C	1,512	C
45	S	625397R	Coleman Road	Urban Collector	14,600	D	5,100	C	14,299	C	760	272	C	676	C	167	C	710	C
46	S	625398X	24th Street	Local Residential	11,680	D	800	C	11,439	C	608	43	C	541	C	26	C	568	C
47	S	625399E	21st Street	Urban Collector	14,600	D	7,000	C	14,299	C	760	374	C	676	C	229	C	710	C
48	S	625400W	15th Street	Urban Collector	14,600	D	3,300	C	14,299	C	760	176	C	676	C	108	C	710	C
49	S	625401D	Lake Shipp Drive	Urban Collector	14,600	D	7,700	C	14,299	C	760	411	C	676	D	252	C	710	C
50	S	625402K	Orrin Ave	Local Commercial	11,680	D	100	C	11,290	C	608	5	C	501	C	3	C	549	C
51	S	625403S	Private Central Fla Gas Drive	Private	0		4,300		0		0	230		0		141		0	
52	S	625404Y	7th Street SW	Urban Collector	14,600	D	4,400	C	14,112	C	760	235	C	626	C	144	C	686	C
53	S	625405F	Avenue R Southwest	Local Commercial	11,680	D	2,700	C	11,290	C	608	144	C	501	C	88	C	549	C
54	S	623041B	Private Road	Private	0		500		0		0	27		0		16		0	
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	53,500	D	40,200	B	53,500	B	2,790	2,147	B	2,790	B	1,316	B	2,790	B
56	S	625409H	American Superior Blvd	Urban Collector	14,600	D	3,200	C	14,541	C	760	171	C	676	C	105	C	710	C
57	S	625410C	Croton Road	Local Residential	11,680	D	300	C	11,440	C	608	16	C	541	C	10	C	568	C
58	S	625411J	Croton Road Crossing Closed	Local Residential															
Crossing Closed																			
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	14,600	D	4,900	C	14,300	C	760	262	C	676	C	160	C	710	C
60	S	625414E	Macon Road	Local Residential	14,600	D	100	C	14,300	C	760	5	C	676	C	3	C	710	C
61	S	625415L	Eagle Lake Loop Road	Urban Collector	14,600	D	7,700	C	14,300	C	760	411	C	676	C	252	C	710	C
62	S	625417A	Pollard Road	Local Residential	11,680	D	100	C	11,440	C	608	5	C	541	C	3	C	568	C
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	14,600	D	1,200	C	14,298	C	760	64	C	676	C	39	C	710	C
64	S	625419N	SR 60	Principal Arterial	32,800	C	24,200	B	32,120	B	1,730	1,293	B	1,539	C	792	B	1,615	B
65	S	625420H	Old Ice House Road	Local Commercial	11,680	D	20	C	11,438	C	608	1	C	541	C	1	C	568	C
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	13,600	D	2,500	C	13,318	C	720	134	C	640	C	82	C	672	C
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	8,600	C	2,500	A	8,423	B	410	134	B	365	B	82	A	383	A
68	0	0	intentionally left blank	0	0		0		0		0	0		0		0		0	
69	A	624304R	County Line Road	Urban Collector	31,100	D	21,400	D	30,459	D	1,620	1,143	D	1,441	D	700	C	1,512	C
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	67,200	D	25,500	B	67,200	B	3,440	1,362	B	3,440	B	835	A	3,440	A
71	A	624303J	Clark Road	Local Commercial	11,680	D	3,100	C	11,439	C	608	166	C	541	C	101	C	568	C
72	A	624302C	Browning Road	Local Commercial	11,680	D	300	C	11,439	C	608	16	C	541	C	10	C	568	C
73	A	624300N	SR 572 Airport Road	Minor Arterial	16,400	D	14,800	E	16,062	F	860	791	F	765	F	484	C	803	C
74	A	624299W	Gay Road	Urban Collector	14,600	D	1,400	C	14,299	C	760	75	C	676	C	46	C	710	C
75	A	624268P	Wabash Road Avenue	Urban Collector	15,500	E	7,800	D	15,180	D	810	417	D	720	D	255	C	756	C

**Table 14**  
**2030 No Build Level of Service Analysis for Rail Crossings**  
 Rail Crossing Evaluation Study

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Daily Capacity Volume	Daily LOS Standard	Estimated 2030 AADT	2030 Daily LOS	2030 Adjusted Daily Capacity Volume	2030 Adjusted Daily LOS	Peak Hour Directional Capacity	Estimated 2030 Peak Hour Volume	2030 Peak Hour LOS	Adjusted Peak Hour Directional Capacity	Adjusted Peak Hour LOS	2030 Mid-day Hourly Volume	2030 Mid-day Hourly LOS	Adjusted 2030 Mid-day Directional Capacity	2030 Adjusted Mid-day LOS
1	AR	622855S	1st Street NW	Urban Collector	14,600	D	6,600	C	14,429	C	760	353	C	717	C	216	C	739	C
2	AR	622856Y	Oak Ave NW	Urban Collector	14,600	D	2,000	C	14,429	C	760	107	C	717	C	65	C	739	C
3	AR	622857F	Deeson Rd	Urban Collector	14,600	D	4,900	C	14,429	C	760	262	C	717	C	160	C	739	C
5	AR	622858M	UnNamed Road Crossing	Private	0		700		0		0	37		0		23		0	
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	0		700		0		0	37		0		23		0	
7	AR	622860N	Youngs Ridge Rd	Local Residential	11,680	D	700	C	11,543	C	608	37	C	573	C	23	C	591	C
8	AR	622861V	Strickland Rd	Local Residential	11,680	D	400	C	11,543	C	608	21	C	573	C	13	C	591	C
9	AR	622862C	Private Road	Private	0		700		0		0	37		0		23		0	
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	15,600	E	26,600	F	15,418	F	810	1,421	F	764	F	871	F	788	F
11	AR	622864R	Sleepy Hill Rd	Urban Collector	14,600	D	4,200	C	14,429	C	760	224	C	717	C	137	C	739	C
12	AR	622866E	CR 582 Knights Station	Urban Collector	15,500	D	7,700	C	15,319	C	820	411	C	773	C	252	C	798	C
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	81,700	C	128,100	F	81,700	F	4,180	6,843	F	4,180	F	4,193	D	4,180	D
14	AR	927709-6	Fairbanks Street	Urban Collector	14,600	D	3,600	C	14,429	C	760	192	C	717	C	118	C	739	C
15	AR	624286V	10th St	Urban Collector	14,600	D	14,400	D	14,429	D	760	769	E	717	F	471	C	739	D
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	35,700	E	68,900	F	35,700	F	1,860	3,681	F	1,860	F	2,255	F	1,860	F
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	34,500	E	56,000	F	34,500	F	1,800	2,992	F	1,800	F	1,833	F	1,800	F
18	A	624289R	New York Avenue S	Urban Collector	14,600	D	3,400	C	13,975	C	760	182	C	606	C	111	C	632	C
19	A	624164R	Missouri Ave N	Urban Collector	14,600	D	1,500	C	13,975	C	760	80	C	606	C	49	C	632	C
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	34,500	E	50,900	F	33,023	F	1,800	2,719	F	1,436	F	1,666	D	1,497	F
21	A	624162C	Tennessee Avenue	Urban Collector	14,600	D	3,100	C	13,975	C	760	166	C	606	C	101	C	632	C
22	A	624161V	Kentucky Avenue	Urban Collector	14,600	D	1,100	C	13,975	C	760	59	C	606	C	36	C	632	C
23	A	624160N	Massachusetts Avenue	Urban Collector	29,545	D	11,400	C	28,280	C	1,539	609	C	1,227	C	373	C	1,280	C
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	35,700	E	39,500	F	35,700	F	1,860	2,110	F	1,860	F	1,293	B	1,860	B
25	A	624158M	Ingraham Avenue	Urban Collector	29,545	D	22,400	D	28,871	D	1,539	1,197	D	1,369	D	733	C	1,391	C
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	34,500	E	27,200	D	34,500	D	1,800	1,453	D	1,800	D	890	C	1,800	C
27	A	624156Y	Gary Road (train over)	Urban Collector	16,900	E	9,000	C	16,900	C	890	481	C	890	C	295	C	890	C
28	A	624155S	Interlachen Pkway	Urban Collector	14,600	D	6,600	C	14,541	C	760	353	C	676	C	216	C	687	C
29	A	624154K	Canal Ave	Urban Collector	14,600	D	9,600	D	14,267	D	760	513	D	676	D	314	C	687	C
30	A	624153D	Fairway Ave	Urban Collector	14,600	D	1,700	C	14,267	C	760	91	C	676	C	56	C	687	C
31	A	624152W	N. Eastside Drive	Urban Collector	14,600	D	2,600	C	14,267	C	760	139	C	676	C	85	C	687	C
32	A	624151P	Combee Road (SR 659)	Minor Arterial	23,500	E	27,900	F	22,964	F	1,120	1,490	F	996	F	913	E	1,012	E
33	A	624150H	Fish Hatchery Road	Urban Collector	14,600	D	13,800	D	14,267	D	760	737	D	676	F	452	C	687	D
34	A	624149N	Reynolds Road	Urban Collector	14,600	D	18,200	F	14,267	F	760	972	F	676	F	596	D	687	D
35	A	623085B	Old Dixie Highway	Urban Collector	14,600	D	30,300	F	14,267	F	760	1,619	F	676	F	992	F	687	F
36	A	623084U	Payne Street	Local Residential	11,680	D	2,600	C	11,414	C	608	139	C	541	C	85	C	549	C
37	A	0	SR 570 Polk Parkway (train under)	Principal Arterial	67,200	D	40,400	C	67,200	C	3,440	2,158	C	3,440	C	1,322	B	3,440	B
38	A	623083M	Neptune Road (Private)	Private	0		500		0		0	27		0		16		0	
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	19,600	D	25,100	E	19,153	E	950	1,341	F	845	F	821	D	858	D
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	14,600	D	10,300	D	14,215	D	760	550	D	651	D	337	C	698	C
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	14,600	D	10,300	D	13,928	D	760	550	D	576	D	337	C	663	C
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	14,600	D	14,700	E	13,928	E	760	785	E	576	F	481	D	663	D
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	14,600	D	20,000	F	14,299	F	760	1,068	F	676	F	655	D	710	D
44	S	625396J	Spirit Lake Road	Urban Collector	31,100	D	31,200	E	30,459	E	1,620	1,667	E	1,441	F	1,021	C	1,512	C
45	S	625397R	Coleman Road	Urban Collector	14,600	D	7,100	C	14,299	C	760	379	C	676	C	232	C	710	C
46	S	625398X	24th Street	Local Residential	11,680	D	1,100	C	11,439	C	608	59	C	541	C	36	C	568	C

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Daily Capacity Volume	Daily LOS Standard	Estimated 2030 AADT	2030 Daily LOS	2030 Adjusted Daily Capacity Volume	2030 Adjusted Daily LOS	Peak Hour Directional Capacity	Estimated 2030 Peak Hour Volume	2030 Peak Hour LOS	Adjusted Peak Hour Directional Capacity	Adjusted Peak Hour LOS	2030 Mid-day Hourly Volume	2030 Mid-day Hourly LOS	Adjusted 2030 Mid-day Directional Capacity	2030 Adjusted Mid-day LOS
47	S	625399E	21st Street	Urban Collector	14,600	D	9,800	D	14,299	D	760	524	D	676	D	321	C	710	C
48	S	625400W	15th Street	Urban Collector	14,600	D	4,500	C	14,299	C	760	240	C	676	C	147	C	710	C
49	S	625401D	Lake Shipp Drive	Urban Collector	14,600	D	12,200	D	14,299	D	760	652	D	676	D	399	C	710	C
50	S	625402K	Orrin Ave	Local Commercial	11,680	D	100	C	11,290	C	608	5	C	501	C	3	C	549	C
51	S	625403S	Private Central Fla Gas Drive	Private	0		4,300		0		0	230		0		141		0	
52	S	625404Y	7th Street SW	Urban Collector	14,600	D	17,600	F	14,112	F	760	940	F	626	F	576	D	686	D
53	S	625405F	Avenue R Southwest	Local Commercial	11,680	D	3,800	C	11,290	C	608	203	C	501	C	124	C	549	C
54	S	623041B	Private Road	Private	0		500		0		0	27		0		16		0	
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	53,500	D	60,100	F	53,500	F	2,790	3,211	F	2,790	F	1,967	B	2,790	B
56	S	625409H	American Superior Blvd	Urban Collector	14,600	D	4,400	C	14,541	C	760	235	C	676	C	144	C	710	C
57	S	625410C	Croton Road	Local Residential	11,680	D	500	C	11,440	C	608	27	C	541	C	16	C	568	C
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed														
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	14,600	D	8,000	C	14,300	C	760	427	C	676	D	262	C	710	C
60	S	625414E	Macon Road	Local Residential	14,600	D	200	C	14,300	C	760	11	C	676	C	7	C	710	C
61	S	625415L	Eagle Lake Loop Road	Urban Collector	14,600	D	13,700	D	14,300	D	760	732	D	676	F	448	C	710	C
62	S	625417A	Pollard Road	Local Residential	11,680	D	100	C	11,440	C	608	5	C	541	C	3	C	568	C
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	14,600	D	2,200	C	14,298	C	760	118	C	676	C	72	C	710	C
64	S	625419N	SR 60	Principal Arterial	32,800	C	43,100	F	32,120	F	1,730	2,302	F	1,539	F	1,411	B	1,615	D
65	S	625420H	Old Ice House Road	Local Commercial	11,680	D	30	C	11,438	C	608	2	C	541	C	1	C	568	C
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	13,600	D	3,400	C	13,318	C	720	182	C	640	C	111	C	672	C
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	8,600	C	3,800	B	8,423	B	410	203	B	365	B	124	B	383	B
68	0	0	intentionally left blank	0	0		0		0		0	0		0		0		0	
69	A	624304R	County Line Road	Urban Collector	31,100	D	30,700	D	30,459	E	1,620	1,640	E	1,441	F	1,005	C	1,512	C
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	67,200	D	57,700	D	67,200	D	3,440	3,082	D	3,440	D	1,888	C	3,440	C
71	A	624303J	Clark Road	Local Commercial	11,680	D	4,300	C	11,439	C	608	230	C	541	C	141	C	568	C
72	A	624302C	Browning Road	Local Commercial	11,680	D	400	C	11,439	C	608	21	C	541	C	13	C	568	C
73	A	624300N	SR 572 Airport Road	Minor Arterial	16,400	D	36,000	F	16,062	F	860	1,923	F	765	F	1,178	F	803	F
74	A	624299W	Gay Road	Urban Collector	14,600	D	1,900	C	14,299	C	760	101	C	676	C	62	C	710	C
75	A	624268P	Wabash Road Avenue	Urban Collector	15,500	E	9,600	D	15,180	D	810	513	D	720	D	314	D	756	D

**Table 15**  
**2030 Build Level of Service Analysis (5800 ft. & 6625 ft. Trains)**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Daily Capacity Volume	Daily LOS Standard	Estimated 2030 AADT	2030 Daily LOS	2030 Adjusted Daily Capacity Volume	2030 Adjusted Daily LOS	Peak Hour Directional Capacity	Estimated 2030 Peak Hour Volume	2030 Peak Hour LOS	Adjusted Peak Hour Directional Capacity	Adjusted Peak Hour LOS	2030 Mid-day Hourly Volume	2030 Mid-day Hourly LOS	Adjusted 2030 Mid-day Directional Capacity	2030 Adjusted Mid-day LOS
1	AR	622855S	1st Street NW	Urban Collector	14,600	D	6,600	C	14,154	C	760	353	C	652	C	216	C	696	C
2	AR	622856Y	Oak Ave NW	Urban Collector	14,600	D	2,000	C	14,154	C	760	107	C	652	C	65	C	696	C
3	AR	622857F	Deeson Rd	Urban Collector	14,600	D	4,900	C	14,154	C	760	262	C	652	C	160	C	696	C
5	AR	622858M	UnNamed Road Crossing Pvt. Private Driveway (Tony Elrod) Ave	Private			700		0			37		0		23		0	
6	AR	622859U		Private			700		0			37		0		23		0	
7	AR	622860N	Youngs Ridge Rd	Local Residential	11,680	D	700	C	11,323	C	608	37	C	522	C	23	C	557	C
8	AR	622861V	Strickland Rd	Local Residential	11,680	D	400	C	11,323	C	608	21	C	522	C	13	C	557	C
9	AR	622862C	Private Road	Private			700		0			37		0		23		0	
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	15,600	E	26,600	F	15,124	F	810	1,421	F	695	F	871	F	742	F
11	AR	622864R	Sleepy Hill Rd	Urban Collector	14,600	D	4,200	C	14,154	C	760	224	C	652	C	137	C	696	C
12	AR	622866E	CR 582 Knights Station	Urban Collector	15,500	D	7,700	C	15,027	C	820	411	C	704	C	252	C	751	C
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	81,700	C	128,100	F	81,700	F	4,180	6,843	F	4,180	F	4,193	D	4,180	D
14	AR	927709-6	Fairbanks Street	Urban Collector	14,600	D	3,600	C	14,154	C	760	192	C	652	C	118	C	696	C
15	AR	624286V	10th St	Urban Collector	14,600	D	14,400	D	14,154	E	760	769	E	652	F	471	C	696	D
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	35700	E	68,900	F	35,700	F	1,860	3,681	F	1,860	F	2,255	F	1,860	F
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	34,500	E	56,000	F	34,500	F	1,800	2,992	F	1,800	F	1,833	F	1,800	F
18	A	624289R	New York Avenue S	Urban Collector	14,600	D	3,400	C	13,606	C	760	182	C	521	C	111	C	592	C
19	A	624164R	Missouri Ave N	Urban Collector	14,600	D	1,500	C	13,606	C	760	80	C	521	C	49	C	592	C
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	34,500	E	50,900	F	32,152	F	1,800	2,719	F	1,234	F	1,666	D	1,402	F
21	A	624162C	Tennessee Avenue	Urban Collector	14,600	D	3,100	C	13,606	C	760	166	C	521	C	101	C	592	C
22	A	624161V	Kentucky Avenue	Urban Collector	14,600	D	1,100	C	13,606	C	760	59	C	521	C	36	C	592	C
23	A	624160N	Massachusetts Avenue	Urban Collector	29,545	D	11,400	C	27,534	C	1,539	609	C	1,055	C	373	C	1,198	B
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	35,700	E	39,500	F	35,700	F	1,800	2,110	F	1,860	F	1,293	C	1,860	C
25	A	624158M	Ingraham Avenue	Urban Collector	29,545	D	22,400	D	28,489	D	1,539	1,197	D	1,281	D	733	C	1,349	C
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	34,500	E	27,200	D	34,500	D	1,800	1,453	D	1,800	D	890	C	1,800	C
27	A	624156Y	Gary Road (train over)	Urban Collector	16,900	E	9,000	C	16,900	C	890	481	C	890	C	295	C	890	C
28	A	624155S	Interlachen Pkway	Urban Collector	14,600	D	6,600	C	14,078	C	760	353	C	632	C	216	C	666	C
29	A	624154K	Canal Ave	Urban Collector	14,600	D	9,600	D	14,078	D	760	513	D	632	D	314	C	666	C
30	A	624153D	Fairway Ave	Urban Collector	14,600	D	1,700	C	14,078	C	760	91	C	632	C	56	C	666	C
31	A	624152W	N. Eastside Drive	Urban Collector	14,600	D	2,600	C	14,078	C	760	139	C	632	C	85	C	666	C
32	A	624151P	Combee Road (SR 659)	Minor Arterial	23,500	E	27,900	F	22,660	F	1,120	1,490	F	932	F	913	E	982	E
33	A	624150H	Fish Hatchery Road	Urban Collector	14,600	D	13,800	D	14,078	D	760	737	D	632	F	452	C	666	D
34	A	624149N	Reynolds Road	Urban Collector	14,600	D	18,200	F	14,078	F	760	972	F	632	F	596	D	666	D
35	A	623085B	Old Dixie Highway	Urban Collector	14,600	D	30,300	F	14,078	F	760	1,619	F	632	F	992	F	666	F
36	A	623084U	Payne Street	Local Residential	11,680	D	2,600	C	11,263	C	608	139	C	506	C	85	C	533	C
37	A	0	SR 570 Polk Parkway (train under)	Principal Arterial	67,200	D	40,400	C	67,200	C	3,440	2,158	C	3,440	C	1,322	B	3,440	B
38	A	623083M	Neptune Road (Private)	Private			500		0			27		0		16		0	
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	19,600	D	25,100	E	18,899	E	950	1,341	F	791	F	821	D	833	D
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	14,600	D	10,300	D	13,964	D	760	550	D	593	D	337	C	639	C
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	14,600	D	10,300	D	13,486	D	760	550	D	473	F	337	C	560	C
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	14,600	D	14,700	E	13,486	F	760	785	E	473	F	481	D	560	D
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	14,600	D	20,000	F	14,112	F	760	1,068	F	632	F	655	D	666	D
44	S	625396J	Spirit Lake Road	Urban Collector	31,100	D	31,200	E	30,060	E	1,620	1,667	E	1,348	F	1,021	C	1,420	D
45	S	625397R	Coleman Road	Urban Collector	14,600	D	7,100	C	14,112	C	760	379	C	632	C	232	C	666	C
46	S	625398X	24th Street	Local Residential	11,680	D	1,100	C	11,289	C	608	59	C	506	C	36	C	533	C
47	S	625399E	21st Street	Urban Collector	14,600	D	9,800	D	14,112	D	760	524	D	632	D	321	C	666	C
48	S	625400W	15th Street	Urban Collector	14,600	D	4,500	C	14,112	C	760	240	C	632	C	147	C	666	C
49	S	625401D	Lake Shipp Drive	Urban Collector	14,600	D	12,200	D	14,112	D	760	652	D	632	E	399	C	666	C
50	S	625402K	Orrin Ave	Local Commercial	11,680	D	100	C	11,038	C	608	5	C	442	C	3	C	490	C
51	S	625403S	Private Central Fla Gas Drive	Private			4,300		0			230		0		141		0	

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	Daily Capacity Volume	Daily LOS Standard	Estimated 2030 AADT	2030 Daily LOS	2030 Adjusted Daily Capacity Volume	2030 Adjusted Daily LOS	Peak Hour Directional Capacity	Estimated 2030 Peak Hour Volume	2030 Peak Hour LOS	Adjusted Peak Hour Directional Capacity	Adjusted Peak Hour LOS	2030 Mid-day Hourly Volume	2030 Mid-day Hourly LOS	Adjusted 2030 Mid-day Directional Capacity	2030 Adjusted Mid-day LOS	
52	S	625404Y	7th Street SW	Urban Collector	14,600	D	17,600	F	13,798	F	760	940	F	553	F	576	D	613	D	
53	S	625405F	Avenue R Southwest	Local Commercial	11,680	D	3,800	C	11,038	C	608	203	C	442	C	124	C	490	C	
54	S	623041B	Private Road	Private			500		0			27		0		16		0		
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	53,500	D	60,100	F	53,500	F	2,790	3,211	F	2,790	F	1,967	B	2,790	B	
56	S	625409H	American Superior Blvd	Urban Collector	14,600	D	4,400	C	14,113	C	760	235	C	632	C	144	C	666	C	
57	S	625410C	Croton Road	Local Residential	11,680	D	500	C	11,290	C	608	27	C	506	C	16	C	533	C	
58	S	625411J	Croton Road Crossing Closed	Local Residential							Crossing Closed									
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	14,600	D	8,000	C	14,113	C	760	427	C	632	D	262	C	666	C	
60	S	625414E	Macon Road	Local Residential	14,600	D	200	C	14,113	C	760	11	C	632	C	7	C	666	C	
61	S	625415L	Eagle Lake Loop Road	Urban Collector	14,600	D	13,700	D	14,113	D	760	732	D	632	F	448	C	666	D	
62	S	625417A	Pollard Road	Local Residential	11,680	D	100	C	11,290	C	608	5	C	506	C	3	C	533	C	
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	14,600	D	2,200	C	14,110	C	760	118	C	632	C	72	C	666	C	
64	S	625419N	SR 60	Principal Arterial	32,800	C	43,100	F	31,700	F	1,730	2,302	F	1,440	F	1,411	B	1,516	C	
65	S	625420H	Old Ice House Road	Local Commercial	11,680	D	30	C	11,288	C	608	2	C	506	C	1	C	533	C	
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	13,600	D	3,400	C	13,144	C	720	182	C	599	C	111	C	631	C	
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	8,600	C	3,800	B	8,313	B	410	203	B	341	B	124	B	359	B	
68	0	0	intentionally left blank	0			0		0			0		0		0		0		
69	A	624304R	County Line Road	Urban Collector	31,100	D	30,700	D	30,060	E	1,620	1,640	E	1,348	F	1,005	C	1,420	D	
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	67,200	D	57,700	D	67,200	D	3,440	3,082	D	3,440	D	1,888	C	3,440	C	
71	A	624303J	Clark Road	Local Commercial	11,680	D	4,300	C	11,289	C	608	230	C	506	C	141	C	533	C	
72	A	624302C	Browning Road	Local Commercial	11,680	D	400	C	11,289	C	608	21	C	506	C	13	C	533	C	
73	A	624300N	SR 572 Airport Road	Minor Arterial	16,400	D	36,000	F	15,851	F	860	1,923	F	716	F	1,178	F	754	F	
74	A	624299W	Gay Road	Urban Collector	14,600	D	1,900	C	14,112	C	760	101	C	632	C	62	C	666	C	
75	A	624268P	Wabash Road Avenue	Urban Collector	15,500	E	9,600	D	14,982	D	810	513	D	674	D	314	D	710	D	



**Table 16**  
**Summary of Crossings with Level of Service Impacts in 2030**  
 Rail Traffic Evaluation

Crossing Location	Period Impacted	Adopted LOS Standard	No Build LOS	Build LOS
CR 544A West Derby Avenue	Daily	D	E	F
10th Street	Daily	D	D	E
CR 655A Mckean Street	Peak	D	D	F
North Lake Shipp Drive	Peak	D	D	E

Table 17 summarizes the change in LOS between the Build and No Build condition in 2030. This analysis considered that the decline in LOS from 2008 to the No Build 2030 condition is the baseline. That is, LOS for grade crossings in 2030 would decline as described above regardless of whether additional trains ran on the existing freight lines. The comparison of the No Build and the Build scenario provides an indication of the actual impact to mobility resulting from an increase in freight rail service. Of the 37 grade crossings experienced a decline in LOS in the No Build, four would experience a decline in LOS below the adopted LOS standard due to additional freight service in 2030.

Measures to improve mobility and reduce the effect of increased delay at grade crossings are discussed in Section 5.

**Table 17**  
**Summary of Crossings with Level of Service Impacts in 2030**  
Rail Traffic Evaluation

<b>Crossing Location</b>	<b>Period Impacted</b>	<b>Adopted LOS Standard</b>	<b>No Build LOS</b>	<b>Build LOS</b>
CR 544A West Derby Avenue	Daily	D	E	F
10th Street	Daily	D	D	E
CR 655A McKean Street	Peak	D	D	F
North Lake Shipp Drive	Peak	D	D	E

## **4. Evaluation Summary**

Table 18 provides a summary of 6 evaluation criteria used to contextualize the rail crossings along with the results of the LOS analysis. A total of 18 grade crossings were identified as critical crossings as a result of high scores in one or a combination of three factors: safety, LOS impact, or overall significance. The following sections describe the three factors and identify relevant grade crossings.

### **4.1 Safety**

Safety is the primary concern for FDOT. As a result, any grade crossing that received a score of 3 or greater in the safety category, regardless of LOS impact or total evaluation, was identified. Of the 74 grade crossings analyzed, 14 were identified as significant for reasons of safety. Of those 14 grade crossings, two, West Derby Avenue and North Lake Shipp Drive, are also expected to experience a decline in LOS under the 2030 Build Scenario (discussed in Section 4.2). Six of the crossings were also identified as crossings of significance as a result of a total evaluation score of 15 or greater. Overall Significance is explained in Section 4.3 below. It is worth noting that West Derby Avenue is identified as a crossing of overall significance in addition to its issues with safety and LOS.

### **4.2 LOS Impact**

The four crossings identified on Table 18 are also noted in Table 18. The four crossings would experience a decline in level of service in the 2030 Build scenario, which means that the decline in LOS takes into account the expected decline in LOS resulting from additional roadway traffic in 2030 and adds to that decline the impact of additional delay resulting from the increased freight rail service. Of the four crossings identified, one is also identified as a safety concern, and another is both a safety concern and an overall crossing of significance based on total parameter score. North Lake Shipp Drive is identified for LOS and safety issues. West Derby Avenue is identified for LOS, safety and overall significance.

### **4.3 Overall Significance**

The evaluation parameters described in Section 3.2 evaluated the context of the grade crossing to assess the value of the crossing's functionality in terms of its contribution to mobility in the immediate vicinity. The evaluation parameters addressed crossing condition, safety, functional classification of the crossed roadway, system interconnectivity, and socio-economic issues. Points were awarded as additional issues were identified for each grade crossing, resulting in a maximum possible score of 27. None of the grade crossings reflected issues resulting in the maximum score. The highest score, 20 points, was assessed to Combee Road.

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**Table 18**  
**Evaluation Summary**  
 Rail Traffic Evaluation

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	LOS Impact 2030	Crossing Condition Evaluation Points	Functional Classification Evaluation Points	Safety Evaluation Points	System Interconnection Evaluation Points	Socio-Economic Evaluation Points	Total Evaluation Points
1	AR	622855S	1st Street NW	Urban Collector	NO	1	2	2	1	3	9
2	AR	622856Y	Oak Ave NW	Urban Collector	NO	0	2	0	1	3	6
3	AR	622857F	Deeson Rd	Urban Collector	NO	2	3	4	3	3	15
5	AR	622858M	UnNamed Road Crossing	Private	NO	3	0	0	0	2	5
6	AR	622859U	Pvt. Private Driveway (Tony Elrod) Ave	Private	NO	0	0	0	0	2	2
7	AR	622860N	Youngs Ridge Rd	Local Residential	NO	1	0	0	0	2	3
8	AR	622861V	Strickland Rd	Local Residential	NO	3	0	0	0	2	5
9	AR	622862C	Private Road	Private	NO	1	0	0	0	3	4
10	AR	622863J	CR 542A Galloway Rd	Urban Collector	NO	1	3	1	3	3	11
11	AR	622864R	Sleepy Hill Rd	Urban Collector	NO	1	2	3	1	2	9
12	AR	622866E	CR 582 Knights Station	Urban Collector	NO	4	3	3	4	3	17
13	AR	622867L	I-4/SR 400 (train over)	Principal Arterial	NO	0	5	0	0	2	7
14	AR	927709-6	Fairbanks Street	Urban Collector	NO	1	2	0	1	2	6
15	AR	624286V	10th St	Urban Collector	YES	1	3	2	4	2	12
16	AR	624288J	US 92/SR 600A Memorial Blvd. (train over)	Principal Arterial	NO	0	5	1	0	3	9
17	A	624290K	SR 563 Sikes Road Blvd (train over)	Urban Collector	NO	0	3	0	0	3	6
18	A	624289R	New York Avenue S	Urban Collector	NO	0	3	0	1	3	7
19	A	624164R	Missouri Ave N	Urban Collector	NO	0	2	5	1	3	11
20	A	624163J	SR 35 North Florida Ave	Minor Arterial	NO	1	5	0	5	5	16
21	A	624162C	Tennessee Avenue	Urban Collector	NO	0	2	0	1	5	8
22	A	624161V	Kentucky Avenue	Urban Collector	NO	2	2	0	1	5	10
23	A	624160N	Massachusetts Avenue	Urban Collector	NO	2	3	0	5	5	15
24	A	922878C	SR 700 Bartow Road SR 548 Lakeland In-Town Bypass (train under)	Urban Collector	NO	0	3	0	0	5	8
25	A	624158M	Ingraham Avenue	Urban Collector	NO	3	3	0	3	3	12
26	A	624157F	US 98 Lake Parker Ave (train over)	Urban Collector	NO	2	3	0	0	3	8
27	A	624156Y	Gary Road (train over)	Urban Collector	NO	0	3	0	0	3	6
28	A	624155S	Interlachen Pkway	Urban Collector	NO	4	3	0	3	3	13
29	A	624154K	Canal Ave	Urban Collector	NO	0	2	2	0	3	7
30	A	624153D	Fairway Ave	Urban Collector	NO	1	2	0	1	3	7
31	A	624152W	N. Eastside Drive	Urban Collector	NO	1	2	0	1	5	9

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	LOS Impact 2030	Crossing Condition Evaluation Points	Functional Classification Evaluation Points	Safety Evaluation Points	System Interconnection Evaluation Points	Socio-Economic Evaluation Points	Total Evaluation Points	
32	A	624151P	Combee Road (SR 659)	Minor Arterial	NO	2	5	5	5	3	20	
33	A	624150H	Fish Hatchery Road	Urban Collector	NO	2	2	2	1	3	10	
34	A	624149N	Reynolds Road	Urban Collector	NO	1	3	2	3	3	12	
35	A	623085B	Old Dixie Highway	Urban Collector	NO	1	2	0	2	3	8	
36	A	623084U	Payne Street	Local Residential	NO	0	0	0	2	2	4	
37	A	0	SR 570 Polk Parkway (train under)	Principal Arterial	NO	0	5	2	0	2	9	
38	A	623083M	Neptune Road (Private)	Private	NO	0	0	0	0	2	2	
39	A	623082F	Recker Highway (SR 655)	Minor Arterial	NO	1	5	0	5	2	13	
40	A/S	623076C	CR 655A McKean Street (South Crossing)	Urban Collector	YES	0	3	2	1	3	9	
41	S	623081Y	CR 655A McKean Street (North Crossing)	Urban Collector	YES	1	3	0	1	3	8	
42	S	625391A	CR 544A West Derby Avenue	Urban Collector	YES	3	3	4	3	2	15	
43	S	625395C	CR 542 Avenue G Northwest	Urban Collector	NO	1	3	3	3	2	12	
44	S	625396J	Spirit Lake Road	Urban Collector	NO	1	2	5	3	2	13	
45	S	625397R	Coleman Road	Urban Collector	NO	0	2	2	3	3	10	
46	S	625398X	24th Street	Local Residential	NO	0	0	0	0	3	3	
47	S	625399E	21st Street	Urban Collector	NO	0	2	0	3	3	8	
48	S	625400W	15th Street	Urban Collector	NO	1	2	0	3	2	8	
49	S	625401D	North Lake Shipp Drive	Urban Collector	YES	1	3	5	3	2	14	
50	S	625402K	Orrin Ave	Local Commercial	NO	0	0	0	0	3	3	
51	S	625403S	Private Central Fla Gas Drive	Private	NO	0	0	0	0	3	3	
52	S	625404Y	7th Street SW	Urban Collector	NO	1	2	2	1	3	9	
53	S	625405F	Avenue R Southwest	Local Commercial	NO	0	0	0	1	3	4	
54	S	623041B	Private Road	Private	NO	3	0	0	0	3	6	
55	S	625406M	US 17 SR 555 3rd Street (train under)	Principal Arterial	NO	0	5	1	0	3	9	
56	S	625409H	American Superior Blvd	Urban Collector	NO	1	2	0	0	3	6	
57	S	625410C	Croton Road	Local Residential	NO	0	0	0	1	3	4	
58	S	625411J	Croton Road Crossing Closed	Local Residential	Crossing Closed							
59	S	625413X	CR 540A Eloise Loop Road	Urban Collector	NO	2	3	5	1	2	13	
60	S	625414E	Macon Road	Local Residential	NO	0	0	0	0	2	2	
61	S	625415L	Eagle Lake Loop Road	Urban Collector	NO	1	2	0	1	3	7	
62	S	625417A	Pollard Road	Local Residential	NO	0	0	0	0	0	0	
63	S	625418G	Old Bartow-Lk Wales Rd	Urban Collector	NO	0	2	5	2	0	9	
64	S	625419N	SR 60	Principal Arterial	NO	1	5	2	6	0	14	
65	S	625420H	Old Ice House Road	Local Commercial	NO	3	0	0	1	0	4	
66	S	625421P	West Lake Wales-Alturas Road	Rural Minor Collector	NO	1	2	0	2	0	5	
67	S	627558R	Alturas Babson Park Cutoff Road (CR 640)	Rural Major Collector	NO	0	3	2	4	0	9	
68	0	0	intentionally left blank	0	NO				6	3	9	
69	A	624304R	County Line Road	Urban Collector	NO	1	3	5	0	3	12	

Study Location ID Number	Rail Line	US DOT ID Number	Street Name	Grade Crossing: Functional Classification (Crossing Roadway)	LOS Impact 2030	Crossing Condition Evaluation Points	Functional Classification Evaluation Points	Safety Evaluation Points	System Interconnection Evaluation Points	Socio-Economic Evaluation Points	Total Evaluation Points
70	A	NA	SR 570 Polk Parkway (train under)	Principal Arterial	NO	0	5	0	1	3	9
71	A	624303J	Clark Road	Local Commercial	NO	0	0	0	1	2	3
72	A	624302C	Browning Road	Local Commercial	NO	0	0	0	5	3	8
73	A	624300N	SR 572 Airport Road	Minor Arterial	NO	4	3	2	1	3	13
74	A	624299W	Gay Road	Urban Collector	NO	1	2	3	4	5	15
75	A	624268P	Wabash Road Avenue	Urban Collector	NO	4	3	5	3	3	18

Street

Safety Issue

Street

Safety Issue and Significant Crossing

Street

Level of Service Issue 2030

Street

Safety Issue and LOS Issue

Street

Significant Grade Crossing

Street

Safety & LOS Issue; Significant Crossing

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Although safety is addressed separately above, the score for safety also counts towards the total significance score. Grade crossings with high safety scores were identified specifically because safety is an issue of significant concern that may not have stood out when the evaluation score for a grade crossing was tallied. That is, a grade crossing may have an overall low evaluation score but a high safety score. For example, Missouri Avenue North received a total evaluation score of 11, but received a 5 in safety.

Grade crossings with a total score of 15 or greater, representing more than 55% of the total possible score were identified as significant grade crossings. Eight of the 74 crossings evaluated received scores between 15 and 20. Six of these eight crossings also received safety scores greater than 3; consequently, only North Florida Ave (SR 35) and Massachusetts Avenue are significant crossings without safety issues. West Derby Avenue, on the other hand, has been identified as possessing all three significance scores (safety, LOS, and overall significance).

## 5. Potential Improvements

Grade crossings identified in Section 4 as having safety or LOS issues would likely benefit from mitigation. Grade crossings scoring 15 points or greater, regardless of their individual safety score, represent important links in the traffic circulation network and would benefit from prioritization in local and regional transportation plans. The sections below describe more specific actions and strategies that would provide for a more comprehensive and efficient transportation system.

### 5.1 Countywide

#### 5.1.1 Operational Changes

Operational changes were examined in order to minimize the impacts of existing freight rail traffic through local communities and Polk County. Potential operational changes include the implementation of quiet zones in downtown Lakeland and ways to increase fluidity of train movements within the county.

##### 5.1.1.1 Quiet Zones

The Federal Rail Administration (FRA) issued a Final Rule on the Use of Locomotive Horn at Highway-Rail Grade Crossings effective June 24, 2005.<sup>1</sup> The Final Rule requires that locomotive horns be sounded at all public grade crossings 15 to 20 seconds prior to entering a crossing. This federal mandate also provides the option for communities to mitigate the impacts of train horn noise by maintaining existing or establishing new quiet zones. These zones can only be implemented when federally-established safety criteria and crossing protection are met in order to compensate for the absence of train horns.

These zones typically reduce intermittent noise levels within communities and could be applicable to grade-crossings that run through Polk County, specifically in the downtown Lakeland area. According to preliminary research conducted by CSX, downtown Lakeland grade crossings would require upgrades to the crossing warning devices in order to meet the minimum

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<sup>1</sup> Federal Railroad Administration. *Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings*. <http://www.fra.dot.gov/us/printcontent/1318>

requirements of a quiet zone. The crossing warnings are motor vehicle traffic control devices that are activated by approaching trains. These devices provide for at least 20.0 seconds of warning. The Lakeland devices are activated by motion sensors regardless of the speed of trains. For example, a slower moving train would activate the existing devices for more than 20.0 seconds. FRA guidelines require constant warning devices in quiet zones that calculate train speed and provide 20.0 seconds of activation no matter how fast or slowly the train is operating.<sup>2</sup>

The implementation of quiet zones in applicable areas of Polk County should be evaluated further given the importance of this rail corridor to regional transportation plans and the relief that quiet zones may provide to local communities.

#### **5.1.1.2 Crew Change Points**

Currently, there are two trains that change crews immediately outside of downtown Lakeland. Typically, these trains travel at reduced speeds as they prepare to stop at their respective crew change points. As a result, these trains move through Lakeland at slower speeds or occasionally stop. The change points for these trains will shift from Lakeland to Winter Haven, once the proposed ILC is operational. This operational change is anticipated to reduce stoppages and slower train movements through downtown Lakeland.

#### **5.1.2 Development of an Inter-Local Rail Advisory Committee**

This committee would be similar to the current Community Traffic Safety Team (CTST). CSX and the FDOT's Rail Administrator should be included as members. This committee could be used to help relay and facilitate concerns for rail and vehicle safety within the County, resolve problem areas and review proposals that may impact various crossings throughout the County.

#### **5.1.3 Uniformity and Conformance of Agreements**

Based on discussions with local governments and FDOT, numerous crossing agreements are in existence, and most were developed prior to 1970. These agreements consist of:

- Surface and Signal Agreements
- Signal Agreements with no Surface Agreements
- Surface Agreements with no Signal Agreements
- Locations that have neither Surface or Signal Agreements

Under a uniformity and conformance system, all current crossings would be coordinated under one set of unified agreements between local government, Polk County, FDOT and CSX. Maintenance and operation work would be assigned to the appropriate agency or level of government, but the process for reviewing, operating, and maintaining the crossings would be uniform throughout the region. This recommendation would be of particular assistance in maintaining any improvements made to the crossings identified in Section 4.

#### **5.1.4 Consideration of Rail Crossings within Concurrency Management Systems**

The County and local jurisdictions should consider developing a sub-component of their concurrency management systems to track level of service for rail crossing locations. Impacts to crossings should be considered by new development as part of the development's traffic analysis, and mitigation of additional grade crossing delay resulting from additional road traffic attributable to the development should be included in the development's conditions of approval.

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<sup>2</sup> CSX Real Property Memo to Lakeland Task Force dated July 6, 2007.

### 5.1.5 Continued Development, Enhancement and Modification to Current Traffic Monitoring

Polk County and the City of Lakeland are in the process of installing traffic monitoring cameras at various locations throughout their respective jurisdictions. In addition, the City of Lakeland is implementing a Tiburon emergency response system, and the County Emergency Services Division is considering a similar system. In coordination with the FDOT, Polk County and the affected municipalities should begin discussions for a Countywide Traffic Management Center or TMC to monitor all modes of transportation from a central location or from local sub-stations, similar to the one currently used by Lakeland. This system would form the core network of an intelligent transportation system or ITS, which would react in real-time to traffic issues and grade crossing delays by adjusting signal timing and providing other communication to motorists so that alternate routes may be selected and additional delay avoided.

## 5.2 Safety and Crossing Condition Improvements

As noted in Table 18 several crossings have been identified that would be recommended for safety and crossing improvements. In most cases, safety enhancements should be considered for crossings with a safety ratio greater than 1. Safety measures could include advance warning devices, four-quadrant gating, physical improvements to the grade crossing and adjacent roadways to prevent speed reductions. These crossings are listed on Table 19:

**Table 19: Grade Crossings Recommended for Safety Improvement**

<b>Crossroad Name</b>	<b>Recommended Improvement</b>
Deeson Road	Smooth transitions and improve safety measures to reduce safety ratio
Sleepy Hill Road	General safety improvements to reduce safety ratio
Combee Road	Improve crossing transitions and safety improvements to reduce safety ratio.
Knights Station	Evaluate crossing for geometric improvement and safety improvements to reduce safety ratio.
Missouri Avenue	Safety improvements to reduce safety ratio or closure.
Avenue G	Smooth transitions and improve safety measures to reduce safety ratio. Closure is also an option.
Spirit Lake Road	Smooth transitions and improve safety measures to reduce safety ratio
North Lake Shipp Drive	Correct hump/rough transition and safety improvements to reduce safety ration. Closure or combination with 15 <sup>th</sup> Street Southwest is also an option.
Eagle Lake Loop Road (Thompson Nursery Road)	Overpass to connect to the ILC. This improvement is currently planned by Polk County.
CR 540A (Eloise Loop)	Correct hump/rough transition and safety improvements to reduce safety ratio.
SR 60	Grade separate.
Old Bartow -Lake Wales Road	Safety improvements to reduce safety ratio or closure.
Gay Road	Safety improvements to reduce safety ratio or closure.
Wabash Road	Safety improvements to reduce safety ratio

### 5.2.1 Level of Service Improvements

Several grade crossings are projected to experience a decline in LOS in 2030 No Build scenario; however, a notable impact to LOS, expressed as a level of service below the LOS standard for the road, related to freight traffic growth occurs in only four instances in the 2030 Build scenario.

Two of these instances of train-related LOS decline will be mitigated as a result of programmed improvements. FDOT intends to improve Recker Highway with an overpass by 2030. This will mitigate LOS impacts at the grade crossings on West Derby Avenue and McKean Street. The overpass is an initiative separate from, and unrelated to, the projected increase in CSX freight traffic. There remain two grade crossings that are anticipated to experience a decline in LOS in 2030 as a result of increased freight traffic for which no programmed mitigation currently exists. These grade crossings are located at 10<sup>th</sup> Street and North Lake Shipp Drive. Suggested mitigation measures for these grade crossings are summarized in Table 20:

**Table 20: Grade Crossings and Recommended Mitigation for the 2030 Build Scenario**

<b>Crossroad Name</b>	<b>Recommended Improvement</b>
West Derby Avenue	Improvements associated with Recker Highway, including grade separation, will mitigate LOS impacts.
McKean Street (north crossing)	
<b>Crossings Anticipated to Experience Decline in LOS Resulting from Increase in Freight Rail Traffic in 2030</b>	
North Lake Shipp Drive (Winter Haven)	Add capacity to system in crossing vicinity and improve physical condition of crossing as described in Section 5.2.
10 <sup>th</sup> Street (Lakeland)	Add capacity to system in crossing vicinity.

It is important to note that CSX’s policy is to offset any new grade crossing with the closure of three existing grade crossings; however, CSX does not have an official policy on the conversion of at-grade crossings to grade-separated crossings (overpass/underpass). As a result, locations recommended for closure, overpass or underpass should be thoroughly reviewed in cooperation with CSX. Additionally, in the instance of new development requiring a new grade crossing, FDOT, Polk County, and the local jurisdiction may consider the crossings recommended for closure as a means of meeting CSX’s policy. Consideration should also be given to the closure of existing low-volume crossings that are not significant to the transportation network, for example, Browning Road.