



Valdosta-Lowndes Metropolitan Planning Organization Freight Movement Study Report Series

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Innovative Traffic Management at Congested Railroad Crossings

In 2009, the Valdosta-Lowndes Metropolitan Planning Organization completed a Freight Movement Study, looking at the general movement of freight in the region. A series of reports followed up the study to look into additional questions raised by the Study. Those reports found that rail freight and highway traffic conflicts are being addressed through transportation network improvement projects identified in the long range transportation plan, conflicts between truck freight and vehicular traffic can best be addressed through driver education efforts and the “emerging” industries within Lowndes County that are transportation related. This is the fourth report in this series, and it addresses traffic management at or near congested railroad crossings within Valdosta and Lowndes County.

The original Freight Movement Study made light of railroads forming the basis of the community. Valdosta was founded in 1860 when efforts to bring a railroad to Troupville, the previous county seat, failed. The residents of Troupville picked up and moved their town four miles southeast to the current site of Valdosta to be on the new Atlantic and Gulf Railroad (CSX line today). Ever since, the railroad, and transportation in general, has been a defining and driving force for economic prosperity in Lowndes County and South Georgia. In 1889, the Georgia Southern & Florida Railway arrived (current NS line) bringing access to Lowndes County from points to the north, and eventually south to Orlando. In 1899 the Atlantic, Valdosta and Western Railroad (now the NS line running to Jacksonville) was the third rail line to connect to Valdosta. The fourth and final line to come to Valdosta was the Georgia & Florida Railway, today known as both the Valdosta Railway and the Georgia & Florida Railway operated by CaterParrott

Railnet. This development of railroads contributed to the creation of small towns and communities within Lowndes County that served as stops along the railroads. These include Hahira, Remerton, Dasher, Lake Park, Naylor, Kinderlou, Mineola, Clyattville, Bemiss, Barretts, and Blanton were all stops along the various railroads. While some of these communities were absorbed into surrounding municipalities or no longer exist, this is a testament to the vital importance of the railroad to the history and economy of Lowndes County.

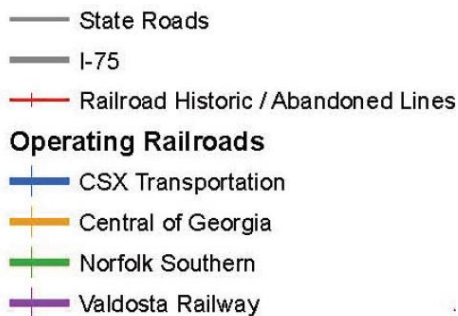
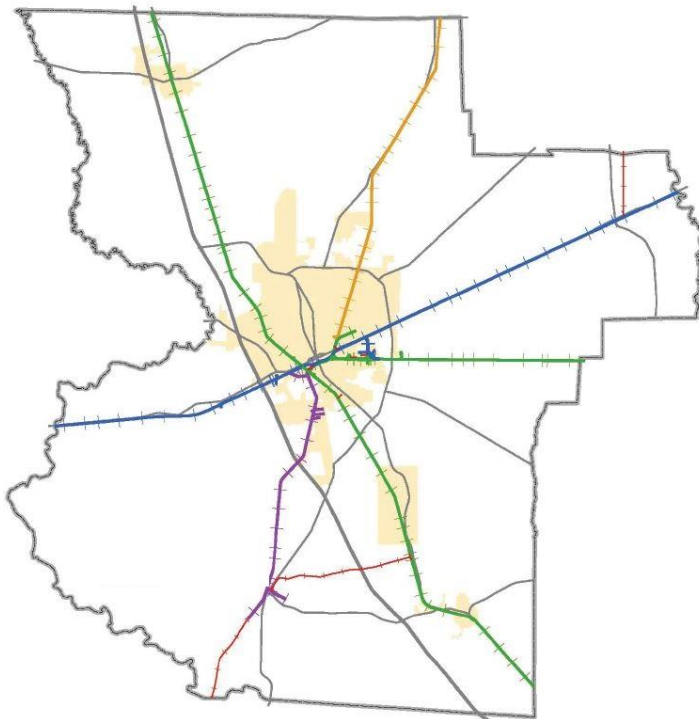
Today, there are four railroad lines in operation in the Valdosta community, two of which are Class 1 railroads. Norfolk Southern and CSX operate Class 1 lines through the Lowndes County. Two shortline railroads that run through Lowndes County and serve businesses are the Valdosta Railway and the Georgia-Florida Railway.

According to information from the second report in this series entitled “Impact of Freight Rail in Valdosta and Lowndes County”, the Norfolk Southern line between the Cook County Line near Hahira and the Echols County Line near Lake Park has the most abundant presence in our community in terms of rail mileage. Approximately 65 miles of track within Lowndes County are owned by Norfolk Southern along their line from Tennessee to Florida. It is also one of the busiest rail lines in the community with approximately twenty-five (25) trains passing through daily. Coincidentally, vehicular traffic is heavy at many crossings with this particular rail corridor with 2015 AADTs ranging from 10,000 to over 18,000 vehicles daily.¹ Currently, there are two overpasses along the Norfolk Southern Route: at North Valdosta Road (US 41) and along West Hill Avenue (US 84). However, crossings at Gornto Road, Baytree Road, Lankford Drive River Street, and Madison Highway



Figure 1 - Traffic backup on Baytree Road during afternoon commute from Norfolk Southern Railroad Crossing

Map 1: Lowndes County Transportation Network



regularly become congested when a train passes through, and the road conditions are especially worse when trains occur during commutes.

The east-west oriented railroad operated by CSX also has its share of problematic crossings, particularly at South St. Augustine Rd near West Savannah Avenue. Traffic mitigation proposals, including an overpass, for this intersection are abundant and date back to at least 2005. Map 2 shows at-grade crossings along arterial and collector streets that exhibit high traffic counts and are located near signalized intersections.

What Traffic Mitigation Strategies Exist?

This report aims to discuss at-grade options for traffic relief in close proximity to railroad crossings. While overpasses are an attractive option for keeping vehicular traffic flowing over railroads, they are not always financially feasible. Given constrained resources and the vital need to improve connectivity throughout the community, at-grade ideas and solutions will be discussed in this report.

Section 8C.09 of the Manual of Uniform Traffic Control Devices (MUTCD) explains traffic control “at or near highway rail crossings.”² This terminology refers to rail crossings that are approximately 200 feet from a signalized intersection. While signalized intersections exist near railroad crossings, many are not this close to a crossing. When considering roads that carry AADTs of higher than 10,000 vehicles, the intersection between West Gordon Street and Lankford Drive/Melody Lane sits closest to a railroad at 250 feet from the crossing. Since this road contains only 2 travel lanes and a center turn lane, the road is highly susceptible to backups and extreme congestion from train delays. Other notable distances between signaled intersections and railroad crossings include the following:

- Norfolk Southern in Valdosta
 - 325 feet from South Oak Street/Dampier Street @ Madison Highway
 - 425 feet from West Gordon Street @ Baytree Road
 - 870 feet from River Street @ West Street

- Norfolk Southern in Hahira
 - 310 feet from Main Street (GA 122) @ Church Street (US 41)
- CSX through Valdosta
 - 1100 feet from St. Augustine Road @ Hill Avenue

The intersections listed above are the most notorious in the community for becoming congested in response to trains. The most researched solution to this problem is the pre-emption of traffic signals at intersections near at-grade rail crossings. In other words, traffic signals are taken off their routine timing and a process is triggered which prevents high traffic volumes from moving towards a blocked crossing. Preemption should be considered for signals 200 feet away from an at-grade crossing, though there is debate that this distance should be increased to 1,000 feet. This would be a safer, albeit more expensive, solution to traffic congestion

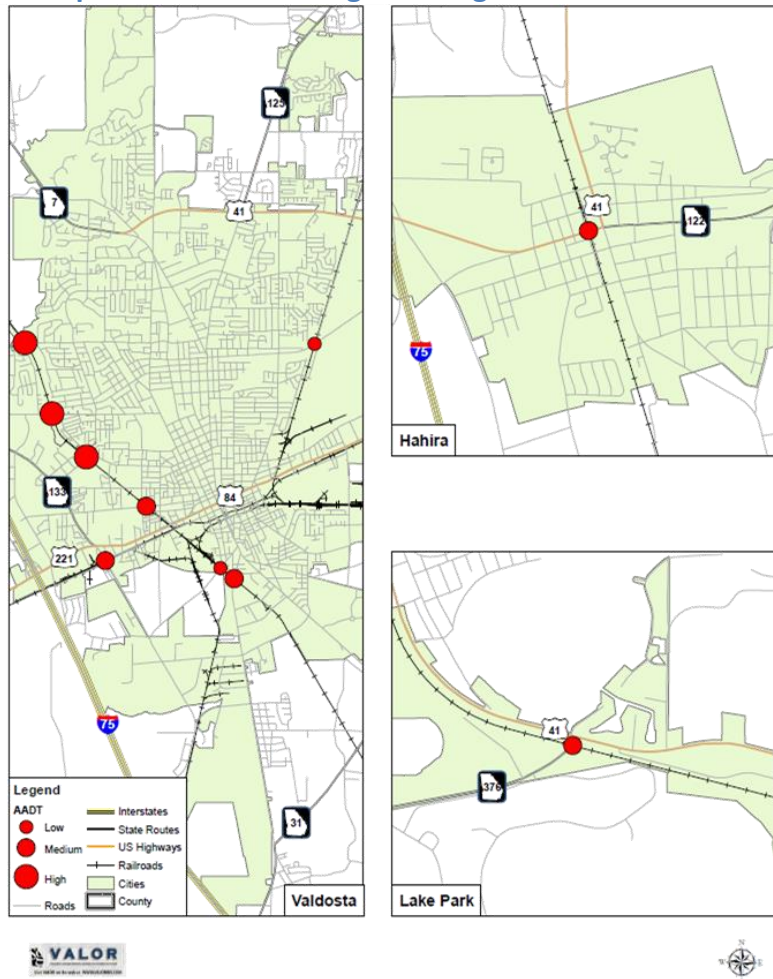
near these crossings.³ Preemption should take into account varying vehicle lengths, power failures, and existing traffic facilities, all in consultation with the railroad companies.⁴

Appropriate road markings and signage should also be considered to maximize safety at railroad crossings and their immediate vicinity. Oftentimes, it is better to display markings that may positively affect safety and traffic flow, especially when close to a railroad crossing. Signs and markings installed in visible places that tell drivers to not block an intersection any time should especially be considered.¹



Figure 3a: MUTCD R10-7 "Do Not Block Intersection" Sign
 Figure 3b: MUTCD R3-1a Activated Blank-Out Sign

Map 2: Railroad Crossings near Signalized Intersections



While there are currently no LED blank-out signs in the Valdosta city limits at traffic signals near railroad crossings, it may be necessary to consider them to foster a safe atmosphere for vehicular traffic and to prevent traffic back-ups during train events. Activated blank-out signs that start operating when a train is approaching a crossing and resume normal operation when the train leaves are ideal, especially on the arterial and collector streets impacted on a regular basis.⁵

What Does This Mean for Transportation?

Railroads are an enormous part of Valdosta and Lowndes County's local economy, but the challenge is to determine the best way for the railroad network and the local transportation network to coexist. The second report in the VLMPO Freight Movement series introduced the extent of how railroads impact the local community, and the 2040 Transportation Vision Plan adopted in September 2015 lists several projects aimed at reducing train-vehicle conflict points. If railroads were outright eliminated from Valdosta's transportation

network, this would have an adverse negative impact on the system of roads that traverse Lowndes County.

To develop projects and transportation plans, the VLMPO continues to analyze data related to railroads and other modes of transportation to improve the transportation infrastructure, economic development and quality of life in this community.

Sources: ¹GDOT Traffic Counts; ²MUTCD 2009 Edition, ³"Coordinated Pre-Preemption of Traffic Signals to Enhance Railroad Grade Crossing Safety in Urban Areas and Estimation of Train Impacts to Arterial Travel Time Delay" – Center for Urban Transportation Research, January 2014; ⁴"Preemption of Traffic Signals near Railroad Crossings" - Texas Transportation Institute, September 2000 – Institute of Transportation Engineers, 2006; ⁵"Guidance on Traffic Control Devices at Highway-Rail Intersections" - FHA November 2002 report;; maps provided by VALORGIS

VLMPO Freight Movement Study Overview

Transportation is not just about the movement of people from one point to another, it is also about the movement of goods and services from one point to another. Increasing imports and the shipment of goods across the nation are impacting freight movements on a massive scale, requiring more transport of imports and exports to their final markets. The weight of total freight movement is expected to nearly double in the next 30 years according to the Georgia Statewide Freight Plan.

In South Georgia, freight movement is a significant concern. Valdosta, originally founded as a railroad town, has been a hub for freight transportation since 1860. Today, South Georgia is quickly becoming a regional warehousing and logistics hub for the Southeast United States. Manufacturers and warehouse owners continue to locate in South Georgia because of the easy access to major transportation corridors located in the region. Key transportation corridors in the region include: Interstate 75, Interstate 10, both Norfolk Southern and CSX Railroads, US 84, the Ports of Georgia in Savannah and Brunswick, and ports in Florida.

The VLMPO Freight Movement Study assesses freight movement in all of Lowndes County and its surrounding region to determine how the movement of goods impacts the local transportation network.

In order to provide public input on the perception of freight movement in Lowndes County, a survey of businesses was conducted as part of the Freight Movement Study. The VLMPO partnered with the Valdosta-Lowndes Chamber of Commerce to distribute the survey to the Chambers' 1,500 members.

The report goes on to examine the existing freight movement in South Georgia and consider future economic development and land use plans to build a profile of goods movement in the region. Although some areas of concern are highlighted in the Freight Movement Study, it has been primarily used to supplement an updated 2040 Transportation Vision Plan for Lowndes County.

The full 2009 Freight Movement Study can be found online at www.sgrc.us, click on Data and Resources.