

**ATTACHMENT “A”  
GENERAL GEC SERVICES – DISTRICT ONE  
FINANCIAL PROJECT I.D. 417546-1-12-02  
WORK ASSIGNMENT NO: 112**

**Rail Traffic Evaluation**

**1.0 DESCRIPTION OF SERVICES**

Jacobs Engineering Group Inc., as the General Engineering GEC (GEC) for the Florida Department of Transportation (FDOT), shall act as an extension of the Department’s Rail Section staff.

With the anticipated rerouting of freight rail traffic to the CSX “S” Line, communities in Polk County may experience longer, more frequent train traffic. Residents and business owners in this area have expressed concerns that the increased train traffic may result in potential impacts such as:

- Increased noise
- Reduced safety at highway-rail grade crossings
- Increased travel delay at highway-rail grade crossings
- Increased emergency service response times

In concert with the Florida Department of Transportation’s (Department) mission to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity, and preserves the quality of our environment and communities, the GEC will assist in the identification of measures to diminish the potential impacts of future increased freight rail traffic on the affected communities while limiting secondary impacts to surrounding communities.

The following definitions will be referenced in this scope:

Department Partners: Cities, Polk County, Transportation Planning Organization, Downtown Partnership, Community Redevelopment Agencies, and all other relevant agencies

Department Coordinating Committee: FDOT Central Office, District 1, District 5, and District 7

Project Stakeholders: General Public, Department Partners, and Department Coordinating Committee

Any measures identified as potential projects, improvements, or strategies at the conclusion of this effort will be recommended to and led by each local jurisdiction.

**2.0 SERVICES TO BE PERFORMED**

The GEC will assist the Department in subtask 2.1 by identifying potential impacts and public concerns regarding increased freight rail traffic in Polk County. The GEC, as directed by the Department, will develop and evaluate a short term program of mitigation strategies that take into account both traffic and multimodal transportation systems. In an effort to satisfy the purpose of this study, the consultant will provide the following services.

The GEC will assist the Department in subtask 2.2 by identifying options to relocate freight rail traffic, maintaining or improving freight rail access to the proposed CSXT Intermodal Logistics Center in Winter Haven, Florida, and minimizing secondary impacts to communities.

The GEC will assist the Department in subtask 2.3 by identifying options to connect Polk County with Orlando and Tampa via a commuter rail or bus system. The options to be explored will directly focus on Polk County needs and services and not through traffic from Orlando to/from Tampa.

Reference documents and collaboration with partners will include, but not be limited to, the documents and partners specifically referenced herein.

## **2.1 Existing and Future Conditions**

The existing and future conditions assessments will evaluate current conditions and forecast future conditions related to railway traffic in the study corridor. Forecasts will include future conditions with and without increased rail traffic, for comparison purposes. These three conditions will be identified as the existing condition, the future baseline condition and the future build condition. The future baseline condition will forecast future growth without an increase of train traffic, and the future build condition will forecast future growth with and without a possible shift in freight traffic movement between freight lines. These assessments will focus on timing and extent of train movements, railway grade crossings and externalities related to safety, traffic congestion, multimodal transportation congestion, quality and level of service, and emergency response times. Information assembled will guide and inform the development of strategies to mitigate impacts.

**Activities:** The GEC will collect existing and future conditions data such as current and future transportation (traffic, pedestrian, bicycle and transit) volumes at grade crossings, current and future freight rail movements, planned rail corridor improvements and planned transportation improvements. The Department will assist the GEC in obtaining information as needed from other Department offices or CSXT. The GEC with support from the Department Coordinating Committee will coordinate these project efforts with those being carried out by FDOT District Five.

**Deliverables:** The GEC will identify possible analysis and forecasting methodologies with project stakeholders at the project kick-off meeting. Based on this discussion, the GEC will prepare a technical memorandum for distribution to project

stakeholders for comment, review and approval. Following analysis and evaluation, the GEC will also prepare a technical memorandum describing the opportunities and constraints of existing and future conditions. The GEC will present the draft findings and recommendations to the Department and others at up to five meetings for review and comment on the results.

**Mitigation Strategies:** Based on the potential and perceived impacts, the GEC will develop a menu of mitigation strategies and options for presentation to the Department. These mitigation strategies would then be evaluated for their ability to address local concerns. The following outline will frame the focus of each mitigation strategy.

**Rail Traffic Operations:** The GEC will work with CXT to determine if there are operational changes that could be made to avoid or minimize potential impacts.

**Rail Infrastructure:** The GEC will evaluate the potential for double tracking the current CSXT mainline through downtown Lakeland. The evaluation will investigate the feasibility of double tracking this section including the need for right of way acquisition.

**Roadway Operations:** Mitigation strategies focus on roadway operational changes that may include intersection and grade crossing geometrics, travel patterns, collision safety record, multi-laning and management systems.

**Safety Improvements:** Strategies focus on capital improvements that mitigate safety impacts which may include warning systems to alert train crew of automobile fouling crossing, grade separation, pedestrian bridges and/or underpasses, crossing consolidations or closings, traffic channelization (roadway medians), four quadrant gates, quiet zones, channelized pedestrian crossings, wide/raised medians, wayside horns and video surveillance/enforcement of crossing.

**Traffic Improvements:** Strategies focus on capital improvements that mitigate safety impacts which may include train prediction systems with variable message signs, crossing consolidation to focus traffic at new or existing grade separated crossings, passive or active roadway signage (way finding), LED light signage, preemption of traffic signals, and traffic signalization schemes to facilitate rapid elimination of queues formed at grade crossings after the crossing is clear.

**Multimodal Improvements:** Strategies focus on capital improvements that mitigate multimodal impacts which may include pedestrian under/over passes, pedestrian/bicycle/transit sight distance clearing, pedestrian and bicycle crossing widths to accommodate “platooning”, ADA compliance, public transit headway bottlenecks and constraints, bike/pedestrian trails at transit stations, bike/pedestrian gates and sidewalk at crossings and public transit routing.

**Activities:** The GEC will evaluate the feasibility and effectiveness of each mitigation strategy with the use of the following physical and operational performance criteria:

- Strategy’s ability to address multiple potential or perceived impacts
- Strategy’s benefits that would be provided by employing the mitigation option

Strategy's costs, organizational changes, or any secondary effects the mitigation option might incur

Additional study of the option for implementation if warranted

Identify implementation strategies

Deliverables: The GEC will produce a technical memorandum that outlines the identified potential and perceived impacts and related mitigation options. The technical memorandum will include a comparison matrix that outlines the benefits and challenges of implementation.

## **2.2 Identify Options for Corridor Relocation**

The GEC will examine opportunities to re-route freight rail traffic that meets the delivery needs of CSXT customers with an emphasis on providing access to the Winter Haven ILC. The GEC will begin the search for feasible alternatives to existing freight rail traffic operations by examining opportunities for relocation within the boundaries of Polk County. Options may include underutilized or abandoned rail rights-of-way, shared right-of-way with utility corridors, shared or adjacent right-of-way to existing or planned roadways and new corridors.

This effort will include the collection of existing conditions data such as current land use, traffic volumes at grade crossings, current freight rail movements, and planned freight rail movements and upgrades. The Department Coordinating Committee will assist the GEC to obtain information as needed from other Department offices or CSXT. Data collection will include meetings with Department staff and Department Partners including, but not limited to, the cities of Lakeland and Winter Haven, and Polk County Long Range Planning Department staffs.

Corridor Feasibility: The GEC will perform conceptual impact analysis for environmental, socio-economic and community transportation conditions using Geographic Information Systems (GIS) such as the Florida Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) data layers. The GEC will document potential challenges and conceptual cost estimates with each new corridor option in addition to identifying key areas for further study. Conceptual cost estimates will be based on average unit costs derived from recently constructed projects, local source costs and FDOT experience.

If no, or very limited, feasible options are available within Polk County, the GEC will explore options within an expanded study area, as determined in coordination with Department and stakeholder staff. If this occurs, the GEC will repeat the order of magnitude impact analysis for new alternatives.

Deliverables: The GEC will produce a technical memorandum that outlines the identified options for new corridors or operational changes for minimizing the impacts of freight rail traffic through Polk County. The technical memorandum will include documentation and maps of feasible alternatives and the challenges

associated with each. The GEC will also document interaction with, and comments received from, Department Coordinating Committee and Department Partners.

### **2.3 Commuter Rail Corridor Options**

The GEC will begin by examining physical opportunities to provide a public transportation connection in Polk County to both the Central Florida Commuter Rail Transit and the Tampa Bay Area Regional Transportation Authority's Regional Transportation Master Plan. Options may include underutilized or abandoned rail rights-of-way, shared right-of-way with utility corridors, shared or adjacent right-of-way to existing or planned roadways, and new corridors. Based on information collected, the GEC will briefly document the existing and programmed improvements to freight rail service as a preface to any commuter rail or bus options examined.

Within this task work order, the GEC will examine and confirm previous studies and planned improvements to determine the existing plus committed conditions. This will include the collection of previous plans and studies such as, but not limited to, the High Speed Rail FEIS completed in May 2005, the Central Florida Commuter Rail Transit EA/FONSI completed in April 2007, the Department's Passenger Rail Vision Plan, and the Strategic Regional Transit Needs Assessment completed in May 2007.

The GEC will also collect and use readily available GIS information to avoid sensitive areas (where possible) and to provide access to areas of high projected population and employment growth. Additionally, consideration will be given to land use visions such as the Polk County Comprehensive Plan, One Bay Initiative, and MyRegion.org efforts in coordination with the Polk County Long Range Planning and Growth Management departments and the Transit Development Plans of the Polk Transit Authority.

Options that are demonstrated to be physically and operationally possible will then be tested for ridership projections and modified.

Travel Demand Models and Estimates: The GEC will analyze multiple service options to connect Polk County to the proposed Central Florida Commuter Rail system through the Central Florida Regional Planning Model (CFRPM) and to the most current Tampa Bay Area Regional Transportation Authority's (TBARTA) Regional Transportation Master Plan options through the West Central Florida Regional Planning Model (WCFRPM).

The most up to date CFRPM does not include the Polk County travel demand model. To better understand where trips external to the current CFRPM are coming to/from within Polk County, the GEC will coordinate with the update effort and create a travel demand model that works for the purpose of this project. This will include model calibration to existing conditions.

The GEC will use the most up to date version of the WCFRPM for the analysis of connections to Tampa. The GEC will perform up to ten (10) travel demand model runs on the two high opportunity corridors (one for each RPM), two background local bus networks, and two land use scenarios.

**Trip Flows:** To better understand where Polk County residents are traveling to outside of Polk County, the GEC will utilize the revised CFRPM and the WCFRPM to identify future transit (year 2030) demands or “trip flows.” The GEC will work with Polk County Long Range Planning staff to aggregate TAZs into “superzones” based on activity centers and/or county planning areas. Activity centers outside of Polk County will be determined by local comprehensive plans and/or long range transportation plans of neighboring counties.

The GEC will prepare a series of maps that show directional trip flows between the Polk County superzones and activity centers served by the Central Florida Commuter Rail project and a series of maps that show directional trip flows between the Polk County superzones and activity centers within Hillsborough County.

The results of this subtask will be used to help determine high opportunity corridor options. No more than two high opportunity corridor options will be chosen for each destination – two to Orlando and two to Tampa. This will help limit the regional travel demand model runs.

If commuter rail options are not shown to be viable, the GEC will work with Department partners to determine if enhanced busways or other non-rail options may be viable in lieu of commuter rail. Additional travel demand model runs are included.

**Bus Networks:** Local bus network connections are critical to the success of regional transportation options such as commuter rail. Two bus networks will be used to analyze the feasibility of commuter rail in Polk County. One bus network will be the 2030 cost affordable network in the Polk County LRTP. The GEC may extend routes on this network to link with potential commuter rail stations.

A second bus network will be created by the GEC that would further enhance ridership opportunities on the commuter rail high opportunity corridors. The GEC will use the trip flow analysis and work with the Polk Transit Authority staff to determine what realistic additions to local bus service should be added to the cost affordable network. The 2030 transit needs network will be taken into consideration, as it supports a commuter rail option in Polk County.

Adjustments to each of these local bus networks may be required to support each of the high opportunity commuter rail corridors, as they may differ.

**Alternative Land Use Scenario:** To determine if changing existing land use policies will better serve transit, the GEC will develop an alternative land use scenario that

focuses projected growth within station areas. The GEC will assign a percentage of population and employment growth between 2008 and 2030 from non-station areas to station areas. This land use scenario will be designed to show the effect of transit oriented development policies on commuter rail ridership and is not designed to replace comprehensive planning. This land use scenario will be used as an alternative to the 2030 forecast socioeconomic data used by the TPO.

The land use scenario methodology will be coordinated with the Polk County Long Range Planning Department and TPO.

The GEC will make use of all relevant previous planning studies and data related to existing and future conditions as well as findings of previous work efforts. Examples of previous studies include but are not limited to the Coast to Coast Rail System Feasibility Study, Central Florida Commuter Rail Project, the Rail Relocation Feasibility Study and the High Speed Rail Study.

Deliverables: The GEC will document analysis methodologies used within this study. The GEC will also produce a technical memorandum that outlines the identified options for connections to/from Polk County to adjacent systems. The technical memorandum will include documentation and maps of feasible alternatives and the potential challenges associated with each. The GEC will also document interaction with, and comments received from, Department partner agencies.

If it is determined that commuter rail or Bus Rapid Transit (BRT) are feasible, it will be incumbent upon the local jurisdictions to initiate further studies in cooperation with the Department.

#### **2.4 Stakeholder and Public Engagement**

Throughout this effort, the GEC will work with the Department to identify public concern and collect public input. To identify concern and collect input, the GEC will establish a public engagement schedule and facilitate public involvement meetings. The following steps may be taken by the GEC to facilitate the public engagement process:

- Identify Department Partners who may include representatives from the cities of Lakeland and Winter Haven, the Lakeland Downtown Partnership, Polk County Transportation Planning Organization, Polk County Long Range Planning Department, and CSXT

- Identify Project Stakeholders who may include the general public, Department Partners, and the Department Coordinating Committee

- Invite stakeholders to a project kick-off meeting to identify concerns, collect data, and discuss analysis methodology

- Meet with stakeholders to discuss identified constraints and identify viable mitigation strategies

- Meet with stakeholders to discuss project results and options

Activities: The GEC will compile comments collected at kick-off meeting with information from existing and future conditions analyses to develop each short term and long term strategy.

Deliverables: The GEC will facilitate up to one (1) project kick-off meeting with Project Stakeholders at the direction and schedule to be determined by the Department. The GEC will prepare for this Kick-off meeting by discussing project tasks and schedule with Department Partners and Coordinating Committee. The GEC will prepare and make up to ten (10) presentations for Department Partners, at the discretion of the Department.

The GEC may facilitate up to five (5) Project Stakeholder meetings and/or open houses to present the findings of the study. The GEC will support the advertisement and logistics for each public meeting at the discretion of the Department.

## **2.5 Coordination with Partners**

The GEC will coordinate all activities with the Department including the development of a task responsibility matrix, contact lists, and client and stakeholder contact protocol. The following steps may be taken to facilitate the coordination process:

- Identify Department Coordinating Committee who may include representatives from FDOT Central Office, District 1, District 5, and District 7

- The GEC Project and Task Managers will report to the Department Coordinating Committee via teleconference on a bi-weekly basis

- The GEC will draft a project status email for the Department Project Manager to send to elected officials, Department Partners, and Department Coordinating Committee on a bi-weekly basis

- The GEC team will report to Department Partners and the Department Project Manager via teleconference on a monthly basis

Deliverables: The GEC will document, track, and manage project/document revisions and comments including a summary of comments made by Project Stakeholders.

## **3.0 SERVICES TO BE PROVIDED BY THE DEPARTMENT**

The Department shall review and provide input on deliverables produced by the GEC. Services from the Department will include:

- Provide oversight and general supervision for the duration of this assignment
- Review and provide substantive comments on deliverables produced by the consultant
- Provide background data and project information, if available



Provide copies of project plans, maps and aerials, if available  
Inform the consultant of any changes to agency personnel involved in the project,  
including contact information  
Provide travel demand model support and traffic counts  
Support public relations outreach through the Public Information Office  
Provide coordination support with elected officials and CSXT

#### 4.0 **LENGTH OF SERVICES**

The beginning date of services shall be March 1, 2008, and shall extend through March 31, 2009.