Technical Memorandum

To: William Wilson, County Manager
Brian Upson, Paragon Consulting

From: Metro Analytics

Date: June 2, 2020

Re: Spalding County Freight Cluster Plan -Truck Origin and Destination Analysis

Introduction

The purpose of this technical memorandum is to document the origins and destinations of truck trips to and from the eastern portion of Spalding County as part of the Spalding County Freight Cluster Plan. The purpose of the Plan is to provide detailed insight into the county's current and future freight activity in order to address transportation planning, traffic operations, and related planning. This analysis is associated with the Inventory and Assessment task of the Plan Scope of Services.

Methodology for Origin-Destination Analysis

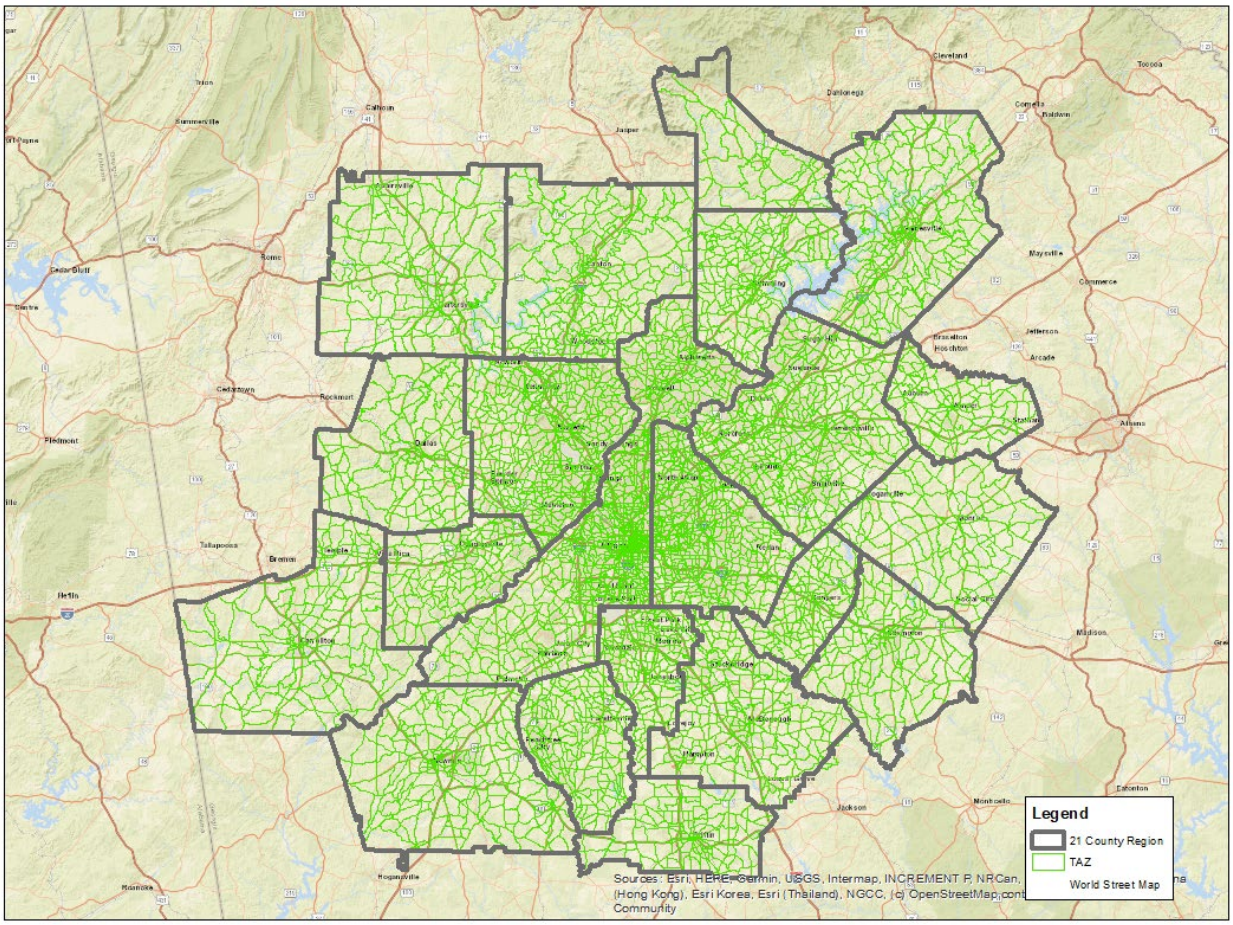
Data Source

To estimate the truck trips, the Atlanta Regional Commission's (ARC) Activity Based Model (ABM) was utilized. ABM is ARC's Regional Travel Demand Model associated with the current Regional Transportation Plan (RTP) and has been developed to forecast travel under new socioeconomic environments and for meeting emerging planning challenges. It forecasts typical weekday travel undertaken by residents of the ARC region. The ABM modeling boundary consists of 21-county region and consists of 6,031 Traffic Analysis Zones (TAZ), including 5,922 internal zones and 109 external zones. The modeling boundary is shown in **Figure 1**.

The ABM has a Regional Plan Forecast available for the year 2020 which was appropriate for the current analysis. It includes the truck trips developed as a part of trip generation and distribution process of the model. The truck trips include commercial, medium, and heavy trucks by following five time periods used in the ABM.

- Early A.M. (3:00 AM to 5:59 AM)
- A.M. peak (6:00 AM to 9:59 AM)
- Midday (10:00 AM to 2:59 PM)
- P.M. peak (3:00 PM to 6:59 PM)
- Evening (7:00 PM to 2:59 AM)

Figure 1: ARC's ABM Modeling Boundary and TAZ



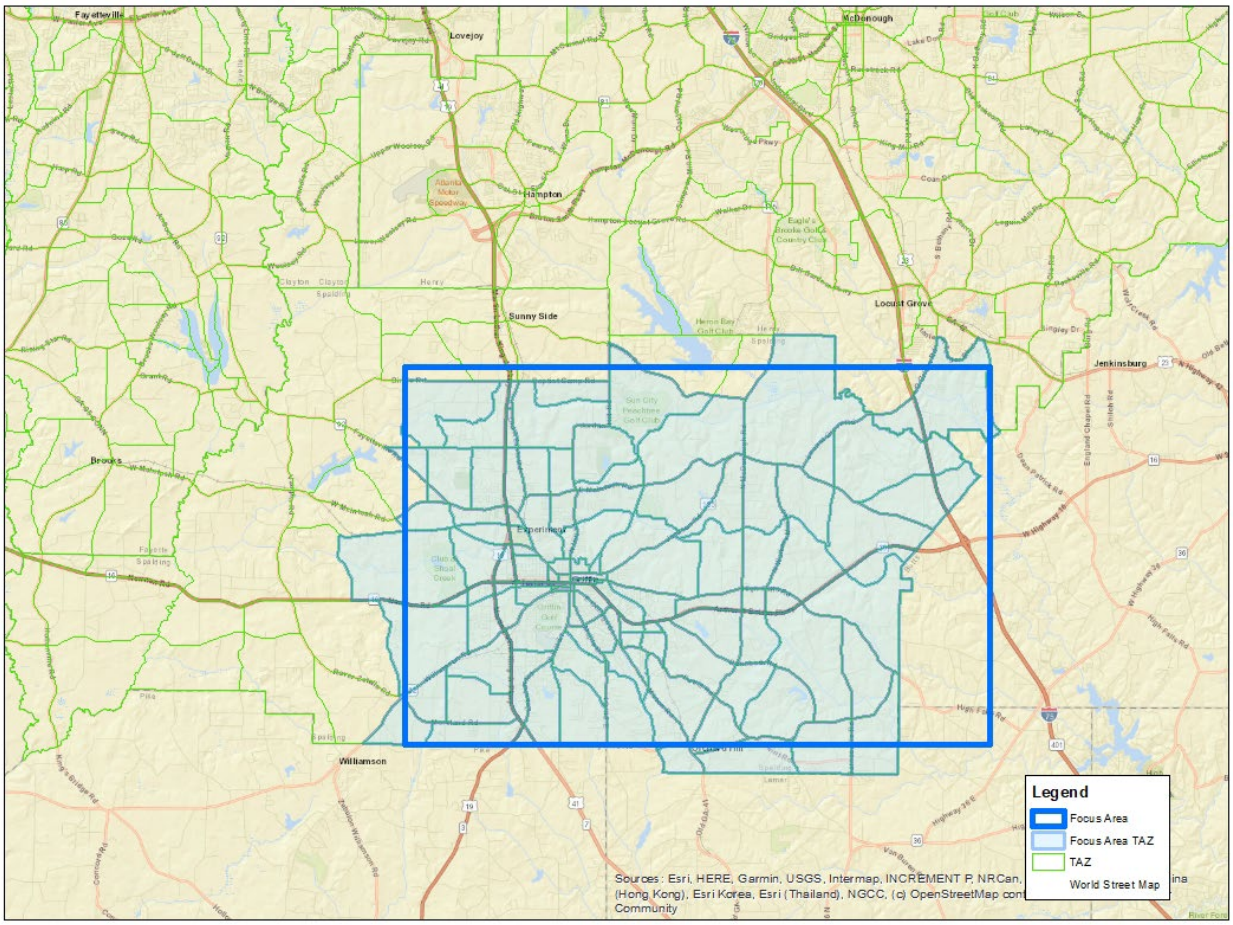
Study Area

The study area was defined by the focus area as shown in **Figure 2**. The ABM TAZs that could most closely represent the focus area, were selected and shown in the **Figure 2**. The total number of TAZs selected were 116.

Development of Origin-Destination Trips

For the current analysis, only medium and heavy trucks are considered. Additionally, daily trip tables were calculated and analyzed instead of trips by period. One of the reasons is that the trip tables by period were developed by first developing the daily truck trip tables and then applying suitable factors to develop the trip tables by period. Therefore, validation for trips by period was not performed to a high level of accuracy.

Figure 2: Study Area TAZ



The ABM combines the internal-internal (II), internal-external (IE), external- internal (EI) and external-external (EE) trips and then develops the TAZ to TAZ trip tables by period for each truck type, medium and heavy. The daily trips were calculated by summing up the trips for the five time periods. As mentioned earlier, there are 6,103 total TAZs including external TAZs in the trip tables. The trip tables were processed and trips by following two types were estimated:

- ***Trips by Origin*** – These are heavy and medium truck trips that start at any of the zones within the 21-county region and the externals, but end at TAZs in Spalding focus area. The total trips by each origin zone are combined and maps were developed and presented in the next section.
- ***Trips by Destination*** – These are heavy and medium truck that start at TAZs in Spalding focus area, and end at any of the zones within the 21-county region and the externals. The total trips by each destination zone are combined and maps were developed and presented in the next section.

Summary of total trips by origin and tot total trips by destination, are shown in Table 1 and Table 2, respectively. As can be seen from the two tables, the origin/destination trips are well-balanced at the daily level.

Table 1: Total Daily Truck Trips to Spalding by Origin

Region	Heavy	Medium	Sum
Spalding study area (Internal)	14 (1%)	193 (11%)	207 (8%)
ARC region outside of study area	76 (7%)	429 (25%)	505 (18%)
External to ARC	997 (92%)	1,062 (63%)	2,059 (74%)
Total	**1,086**	**1,684**	**2,771**

Table 2: Total Daily Truck Trips from Spalding by Destination

Region	Heavy	Medium	Sum
Spalding study area	14 (1%)	193 (12%)	207 (8%)
ARC region outside of study area	76 (8%)	429 (26%)	504 (19%)
External to ARC	874 (91%)	1,011 (62%)	1,885 (73%)
Total	**963**	**1,633**	**2,596**

In addition to the tables above, the total trips to and from the Spalding County Focus Area were illustrated in the figures below. **Figure 3** shows the total daily truck trips originating from the study area, while **Figure 4** shows the daily trucks trips destined for the study area by each TAZ. **Figure 3** also identifies the daily truck trips originating from the study area and leaving the ARC's ABM Modeling Boundary for external destinations. Conversely **Figure 4** also identifies daily truck trips destined for the study area from outside the ARC's ABM Modeling Boundary from external origins.

Figure 3: Total Daily Trips Originating from Spalding County

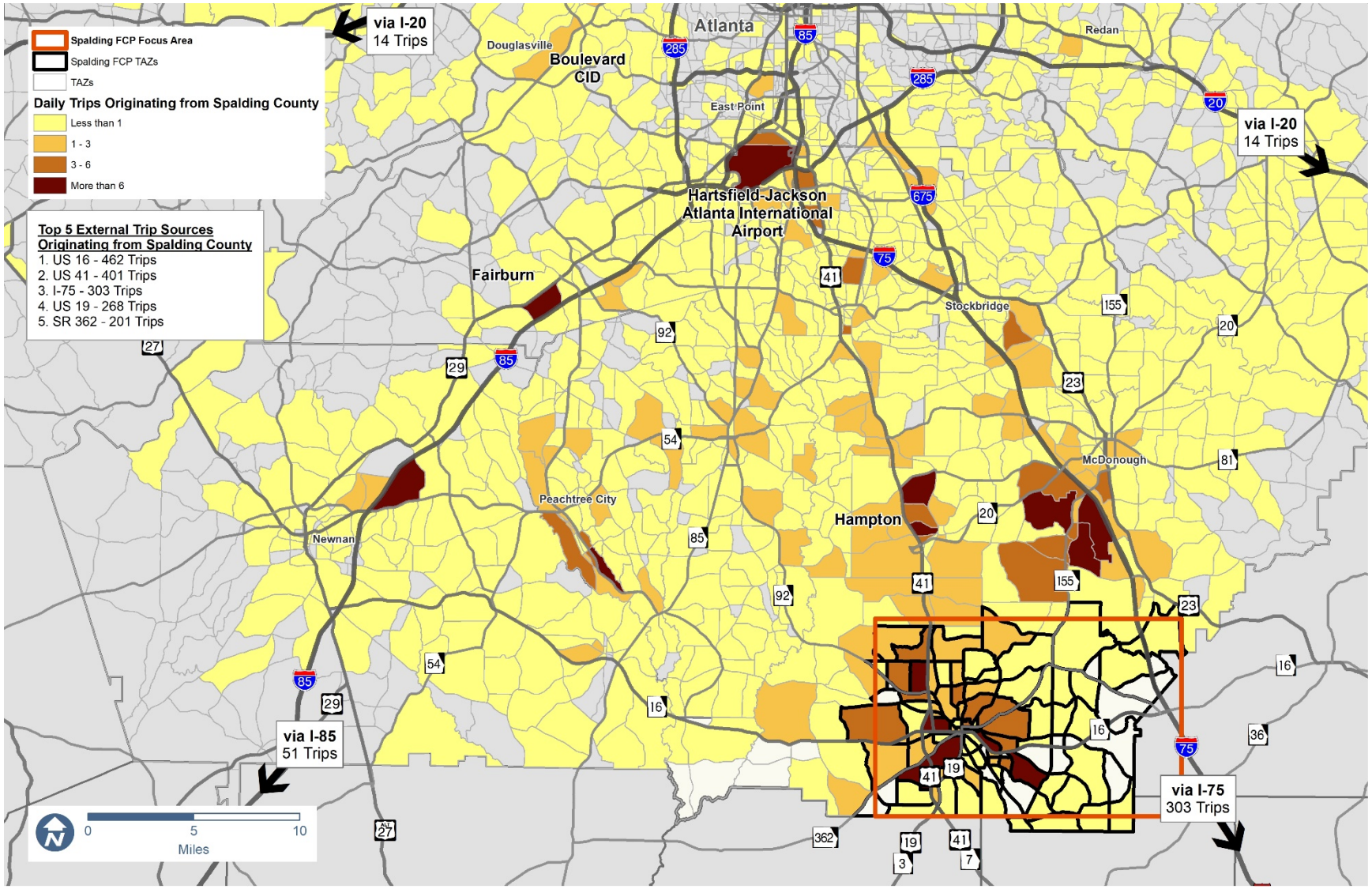
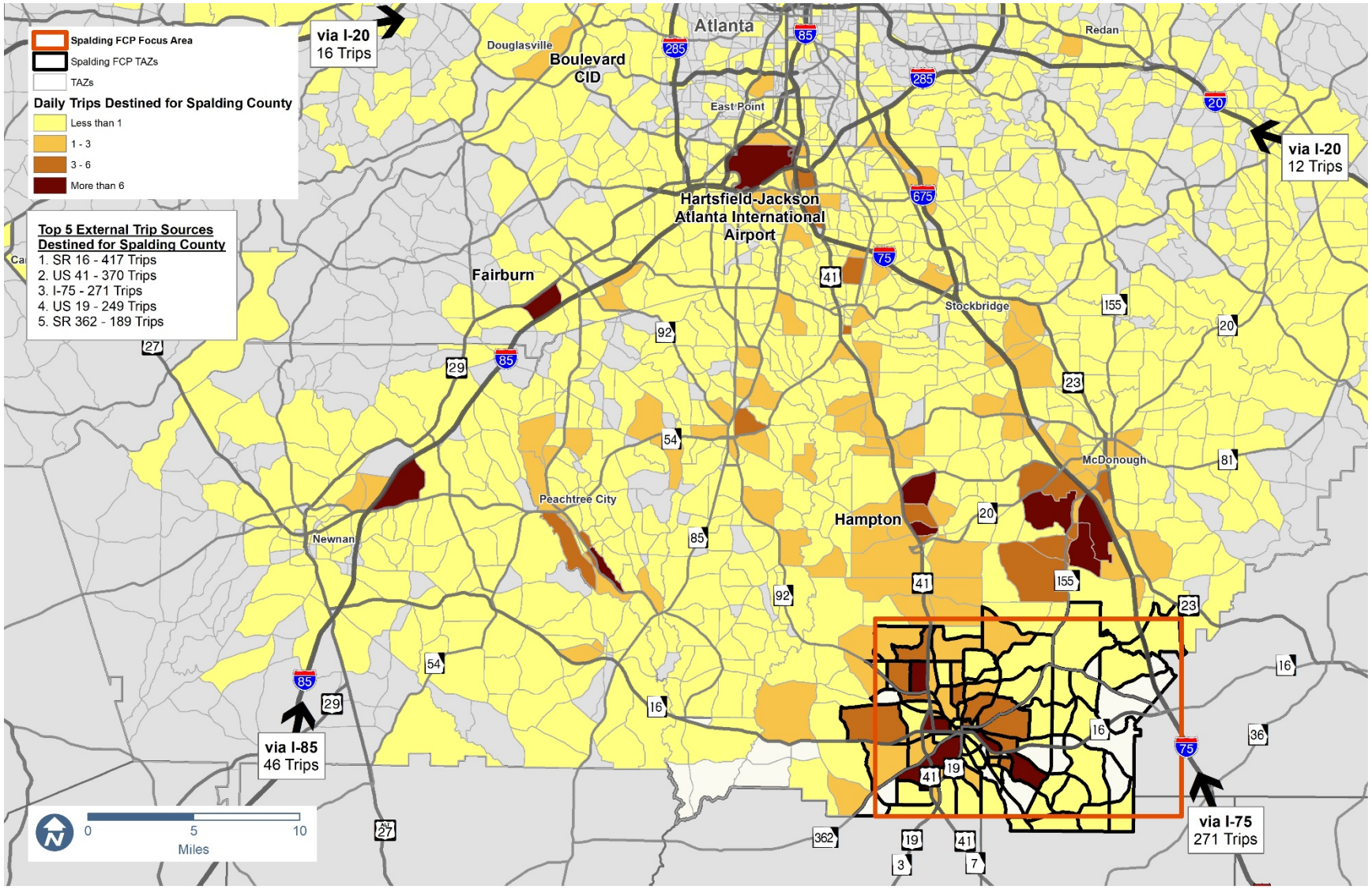


Figure 4: Total Daily Trips Destined for Spalding County



Public Outreach Efforts

In addition to the data collection and analysis completed for this technical memo, a public outreach effort to connect with truck drivers, business owners and operators in Spalding County was conducted. A group of calls were made, and emails sent out to 27 industrial companies within Spalding County between the dates of April 27, 2020 and May 11, 2020. Two initial survey questions were asked of those who were contacted.

- Where do your incoming trucks typically come from? Which major roadways do they typically use (SR 16, SR 155, etc.) to access your business?
- What are the destinations for the trucks that leave your facility? Which roadways would they typically access to reach their destinations?

One follow-up question was received from the surveyed businesses:

- ***Question:*** What is the purpose of the information and how will it be used?
- ***Spalding FCP Team Response:*** The truck origin/destination information is intended to help the team understand the overall freight flows to and from Spalding from a macro level perspective. As part of the Plan, the collected responses will help prioritize needed improvements related to freight. No detailed information regarding responses from individual companies will be made public.

Of those 27 companies that were surveyed during that period, seven responses were received. Survey Responses were received from the following:

- Bridgestone Americas Manufacturing Group
- MarinoWare Industries
- Norwesco
- Norcom, Inc.
- Rinnai
- Newton Crouch
- Coveris

Summary of responses:

<u>Origins of materials to access Spalding County locations</u>:

- International from port in Savanna
- Origination at Spalding County plant, own truck line
- No real specific
- Metro Atlanta, empty containers return back to plant in Spalding
- Multi-modal facilities in Atlanta or Macon and truck into Spalding if no rail spur at site

<u>Destination of products once leaving Spalding County location</u>:

- Sites are central hubs for the Southeast in many cases.
- Southeastern states
- All over US and some International to Canada or South America
- Many locations if load is full than direct to destinations, if load is partial then to south Atlanta (Moreland Ave) or McDonough to a consolidation center then onto to destination

- All shipments are by truck or rail. All rails ship from multi-modal centers in Atlanta if a rail spur not existing on site.

Most used roadways for to access Spalding County sites:

- I-75
- SR 16
- US 19/41/SR 3
- SR 155

Key Findings from the Spalding Origin and Destination Analysis

The origin and destination analysis for the Spalding County Freight Cluster Plan produced the following key findings:

- Daily Truck Trips are fairly balanced between Origins and Destinations. Of the total volume of trips (5,367) originating or destined for Spalding County, originating trips from Spalding account for about 52 percent, while trips destined for Spalding County are about 48 percent.
- The split between medium and heavy truck trips is approximately 61-63 percent medium trucks versus 37-39 percent heavy trucks.
- Daily Truck Trips originating from external areas or destined for external areas outside the ARC region in Spalding County account for 73-74 percent of the total daily truck trips.
- Daily Truck Trips originating and destined for locations within the TSCID accounts for approximately 7-8 percent of traffic.
- Several key geographic areas throughout the Atlanta region contribute to daily truck trips to and from the TSCID. Those geographic locations area as follows:
    - Hartsfield-Jackson Atlanta International Airport
    - SR 155 Corridor in McDonough
    - Peachtree City, GA
    - Newnan, GA
    - Fairburn, GA (Intermodal Yard and I-85 Corridor)