



CUTR

CENTER for URBAN
TRANSPORTATION
RESEARCH

Final Report

West Chatham Mobility and District Expansion Feasibility Study

Prepared for:

Chatham Area Transit Authority

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Center for Urban Transportation Research
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Acronyms

ADA	Americans with Disabilities
CAC	Citizens Advisory Committee
CAT	Chatham Area Transit
CIP	Capital Improvement Program
CUTR	Center for Urban Transportation Research
ESRI	Economic and Social Research Institute
FDOT	Florida Department of Transportation
FTA	Federal Transit Administration
FY	Fiscal Year
GDOT	Georgia Department of Transportation
GDHS	Georgia Department of Human Services
GRHS	Georgia Regional Hospital at Savannah
GTA	Georgia Transit Association
HAAF	Hunter Army Airfield
HAS	Housing Authority of Savannah
ID	Identification
LEHD	Longitudinal Employer-Household Dynamics
MPO	Metropolitan Planning Organization
QCEW	Quarterly Census of Employment and Wages
QWI	Quarterly Workforce Indicators
SCAD	Savannah College of Arts & Design
SEDA	Savannah Economic Development Authority
STS	Special Transportation Services
StARS	Statistical Administrative Records System
TCC	Technical Coordinating Committee
TBEST	Transit Boardings Estimation Simulation Tool
TDM	Travel Demand Management
TDP	Transit Development Plan

West Chatham Mobility Study

Final Report

Introduction

In April 2012, the legislation creating the original Chatham Area Transit Authority was amended to create a new authority. As of that time, the authority was anticipated to be a county-wide organization providing service to all municipalities. However, some jurisdictions opted out of the authority including the west Chatham communities of Pooler, Bloomingdale, Port Wentworth and Garden City. Portions of Garden City continued bus services and became part of the CAT transit district service area.

In early 2015, legislation was introduced into the Georgia Legislature that would amend the composition of the CAT board and also study the feasibility of services to be provided in west Chatham County if those jurisdictions were to join the authority.

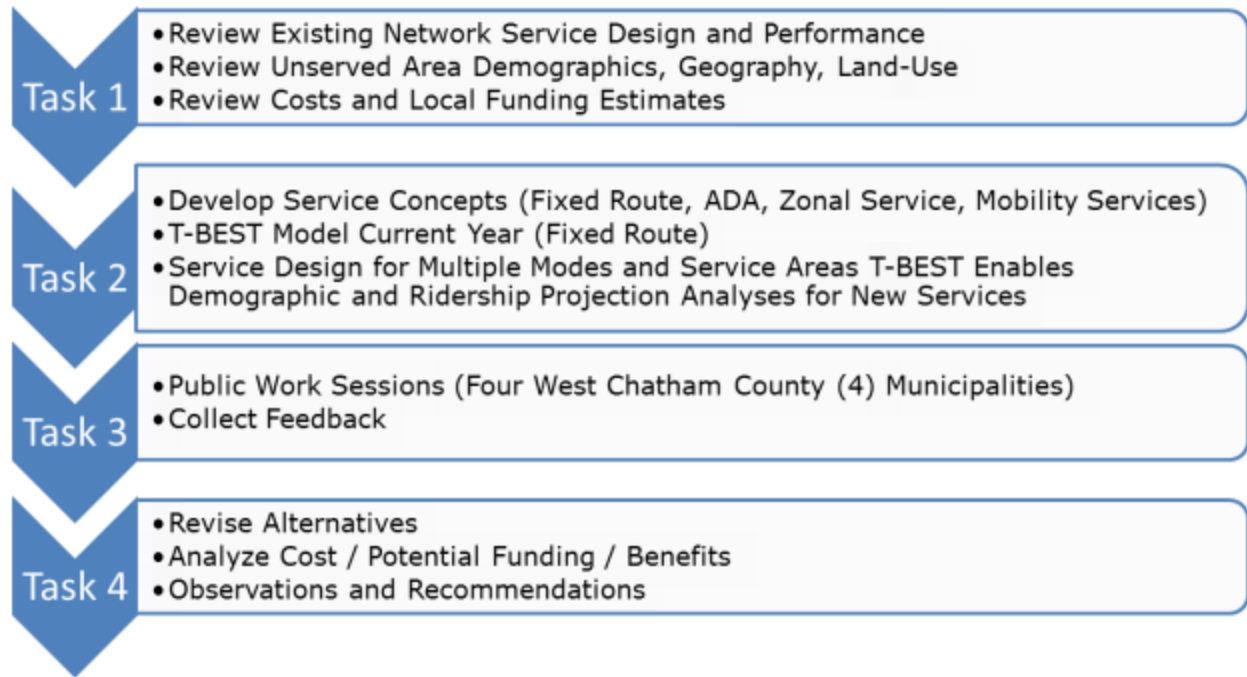
CAT requested that CUTR, which had completed the CAT strategic business plan known as, "Making Connections," in 2013, study the feasibility of service in the subject area.

The objectives of the feasibility study were to:

- 1) Analyze West Chatham County Mobility Service Needs and Connectivity
- 2) Develop Service Improvement Alternative Concepts
- 3) Examine Applied Local Funding to Affordable Levels of Mobility Services
- 4) Provide Observations and Recommendations

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The Study approach involved analyzing base data to define need and service design, progressively develop mobility service option with adequate public official and citizen input, and specifically conduct workshops and develop a project study report detailing this process to provide a resource to the CAT Board and local decision makers.



Context Area for Mobility Services

West Chatham County

West Chatham is a growing area with new suburban development and industry. The Port of Savannah Garden City is located on the river. The Port of Savannah is the fourth largest container port in North America only behind Los Angeles, Long Beach, and New York/New Jersey. At 1,200 acres, the Port of Savannah reaches 44 percent of U.S. consumers and manufacturers. An aerial of the port is included in Figure 1 below.



Figure 1. Port of Savannah – Garden City Terminal

West of the port and airport, there are several distribution sites including:

- Electrolux
- Target
- IKEA
- Whirlpool
- Icon H & F
- Walmart
- Heineken
- The Home Depot
- Dollar Tree Store
- Target
- Walmart
- Lowe's
- Dollar Tree
- Pier 1 Imports

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These sites are depicted in Figure 2 below.



Figure 2. Distribution Sites

The Savannah Hilton Head International Airport is directly east of I-95. The airport is home to four ground handling tenants, one shuttle, 14 hotels, 8 rental car companies, and 9 restaurants and retail establishments. Gulfstream Aerospace is a major employer at the airport, as shown in Figure 3 below. The airport is surrounded by the four communities of Pooler and Bloomingdale to the west and Port Wentworth and Garden City to the east.



Figure 3. Gulfstream Aerospace at Savannah/Hilton Head International Airport

Recently, a new outlet mall has opened up west of the airport in Pooler. The new mall contains 157 stores and restaurants, as depicted in the site map below. Since the mall is so new, further information is not available. Figure 4 shows the schematic of the stores of the new outlet mall.



Figure 4. Schematic of New Tanger Outlet Mall

Definition of the Activity Center

For the purpose of determining mobility needs in the West Chatham area, CUTR defined the area as the Savannah/Hilton Head International Airport Activity Center. An activity center is characterized as a place with at least one major generator of activity with associated mixed-uses such as retail, suburban development, residential, and auxiliary employment. The Activity Center has the following components and is depicted in Figure 5 below.

- Airport and Seaport
- Aircraft Manufacturer
- Outlet Mall
- Other Activity-Related Employment
- Suburban Development
- Residential
- Services

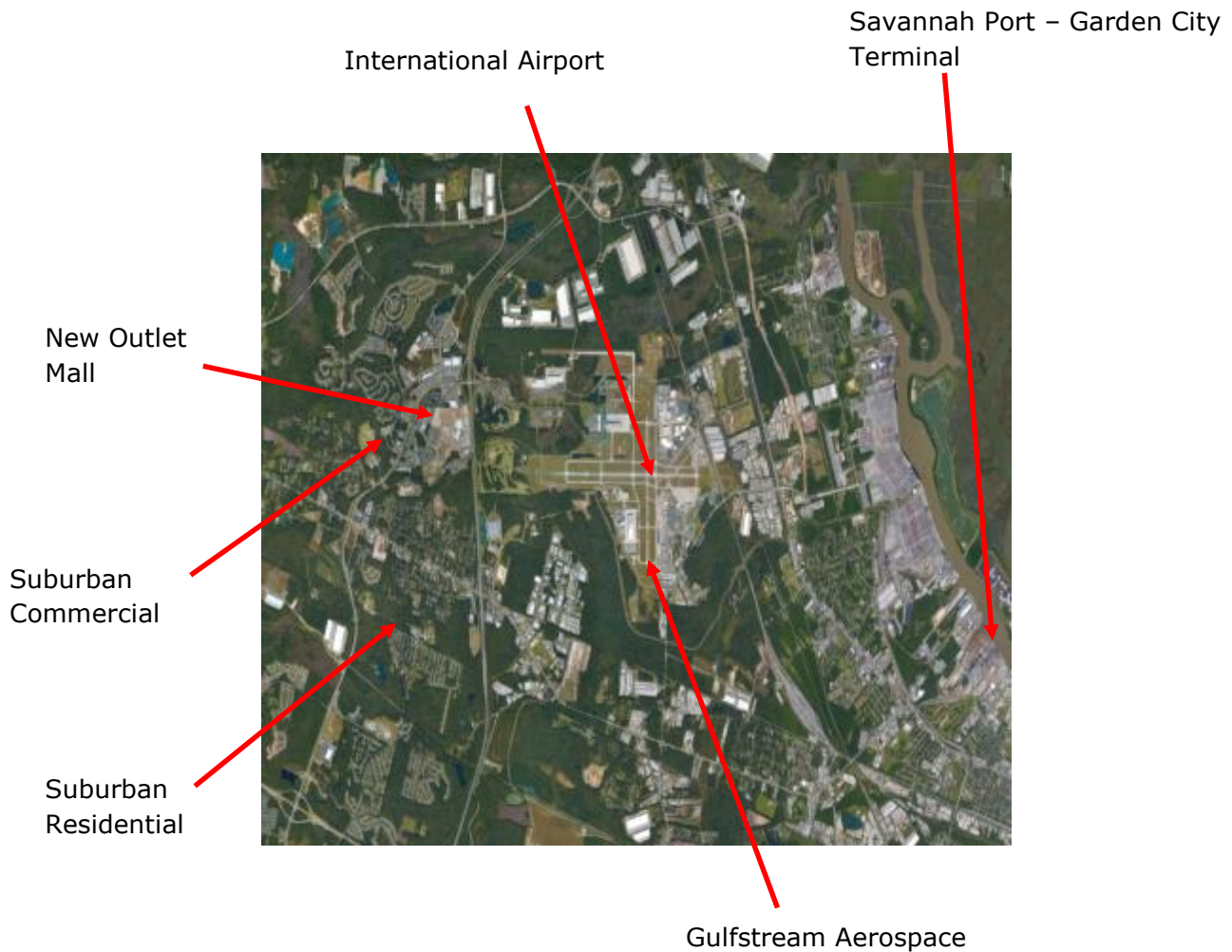


Figure 5. Elements of the Activity Center

Current CAT Service Area

The current CAT service area consists of the City of Savannah and the unincorporated areas of Chatham County. Portions of the county not currently within the CAT service area include the jurisdictions of West Chatham and other areas of the County, including:

- Port Wentworth
- Garden City
- Pooler
- Bloomingdale
- Vernonberg
- Thunderbolt
- Tybee Island

Although Garden City is considered a non-member of the District, certain parcels within the City are assessed ad valorem taxes because they are within walking distance of existing CAT services. Also, by agreement with the County, CAT does provide paratransit county-wide even for those areas not currently in the District. Figure 6 below displays the current CAT service area in blue while the non-participating areas are in green.

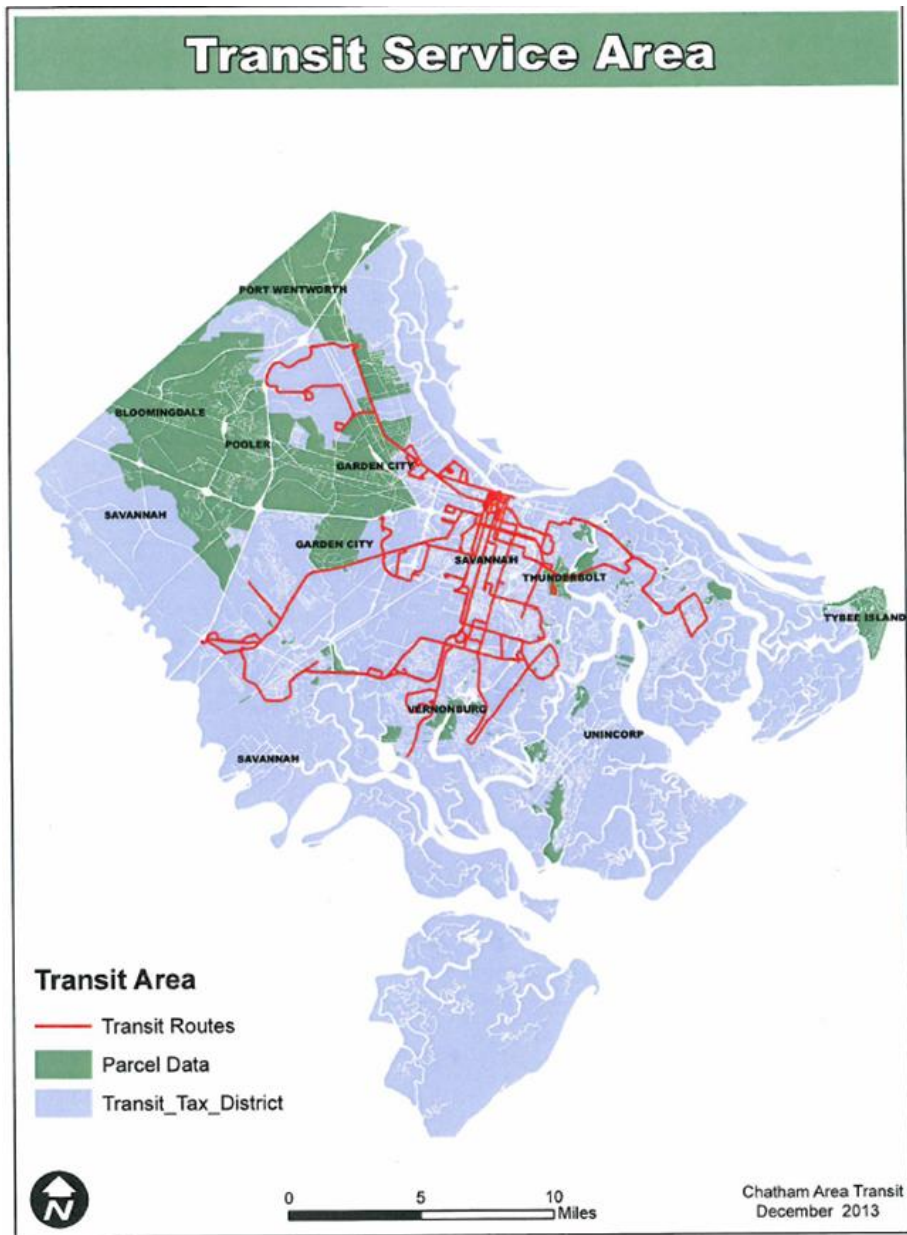


Figure 6. Transit Service Area

Study Area Demographics

Certain demographics often predict the likelihood that transit service will generate transit riders. These demographic factors include the following:

- Population Living Below the Poverty Line
- Households with Zero Vehicles
- Households with One Vehicle
- Household Income
- Population Over Age 65 (Seniors)
- Population Under the Age of 18 (Youth)

Figure 7 below shows that there are a minimum of 1,242 and a maximum of 2,011 people living below the poverty line throughout Pooler, Port Wentworth, and Garden City. Bloomingdale has a minimum of 272 and a maximum of 557 people living below the poverty line.

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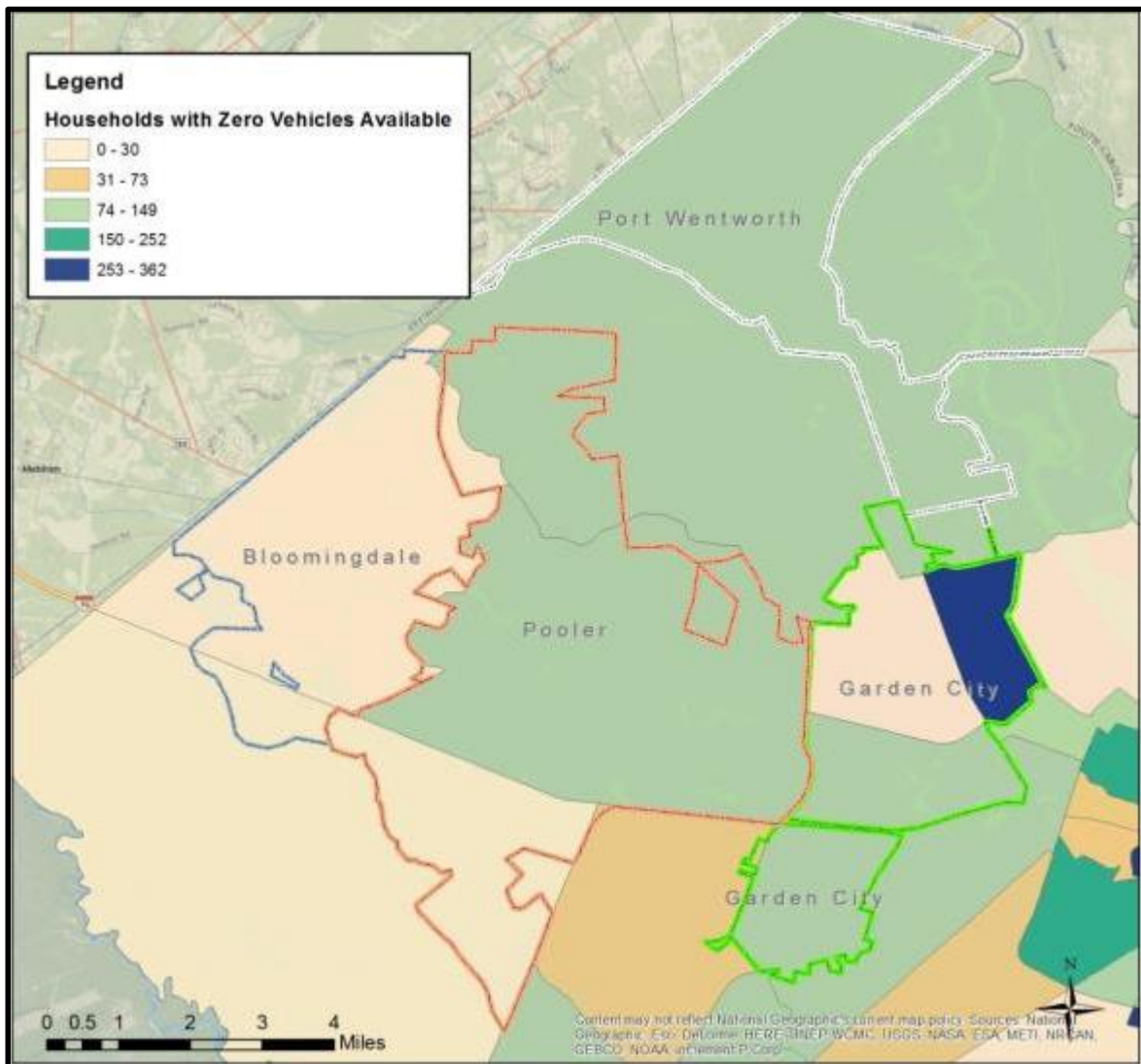


Figure 8. Households with Zero Vehicles Available

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Figure 9 below shows that between Pooler and Port Wentworth, there are a minimum of 1,197 and a maximum of 2,438 households with one vehicle available. Pooler has a minimum of 768 and a maximum of 1,196 households with one vehicle available. Bloomingdale has a minimum of 247 and a maximum of 513 households with one vehicle available.

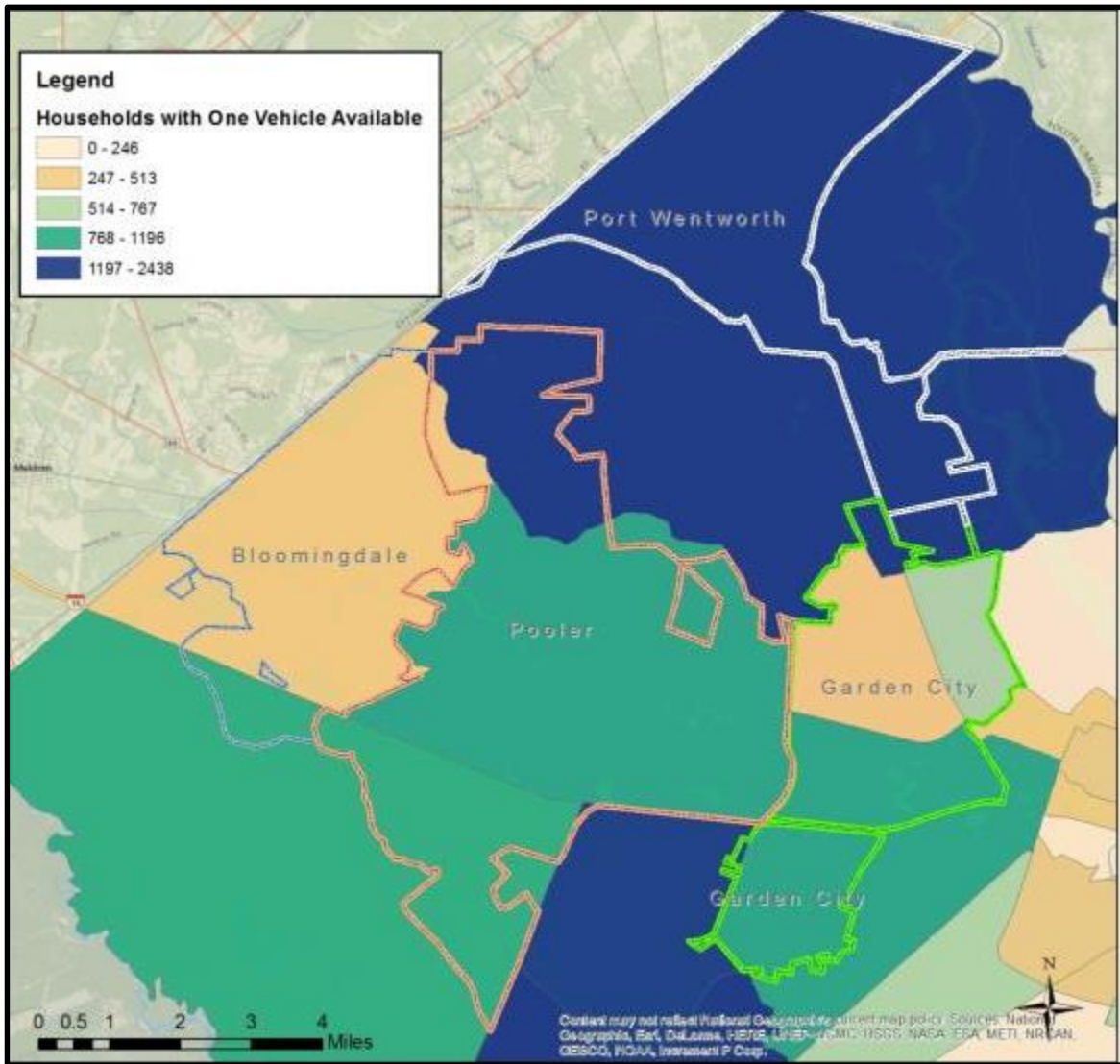


Figure 9. Households with One Vehicle Available

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Figure 10 below shows that between Pooler, Port Wentworth and Garden City there are a minimum of 679 and a maximum of 879 households with an annual income below \$25,000. Bloomingdale has a minimum of 204 and a maximum of 333 households with an annual income below \$25,000. Finally, the southern portions of Garden City have a minimum of 470 and a maximum of 678 households with income below the \$25,000 mark.

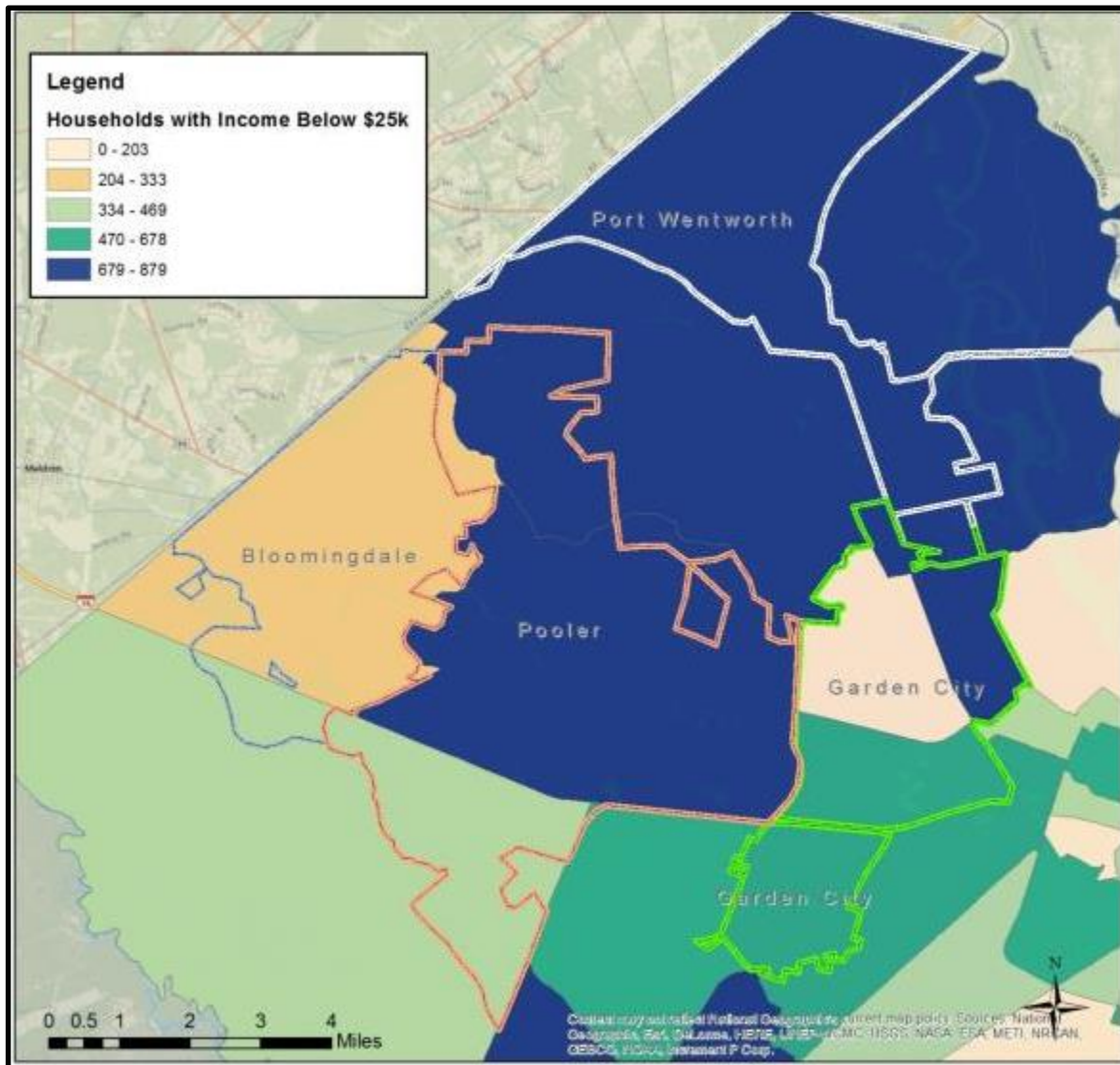


Figure 10. Households with Income below \$25K

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Figure 11 below shows that between Port Wentworth and Pooler, there are a minimum of 1,428 and a maximum of 4,987 persons under the age of 18. Most of Garden City has a minimum of 914 and a maximum of 1,427 persons under the age of 18. Bloomingdale has a minimum of 613 and a maximum of 913 persons under the age of 18.

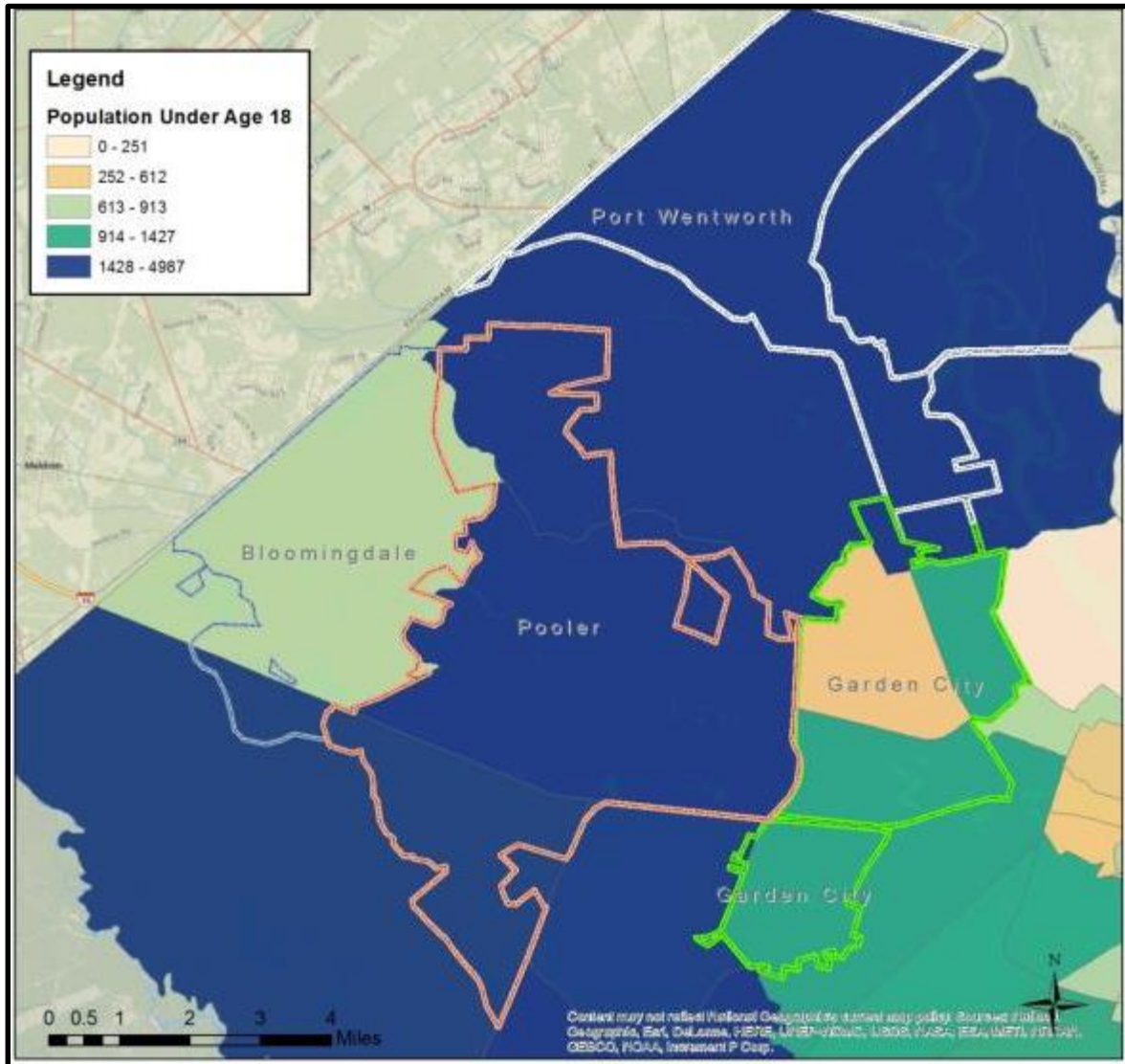


Figure 11. Population under Age 18

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Between Pooler and Port Wentworth, there are a minimum of 748 and a maximum of 2,135 persons who are over the age of 65. Much of Garden City has a minimum of 185 and a maximum of 340 persons over the age of 65 and southern sections of Pooler have a minimum of 457 and a maximum of 747 persons over the age of 65. Figure 12 below displays the distribution of the population over the age of 65.

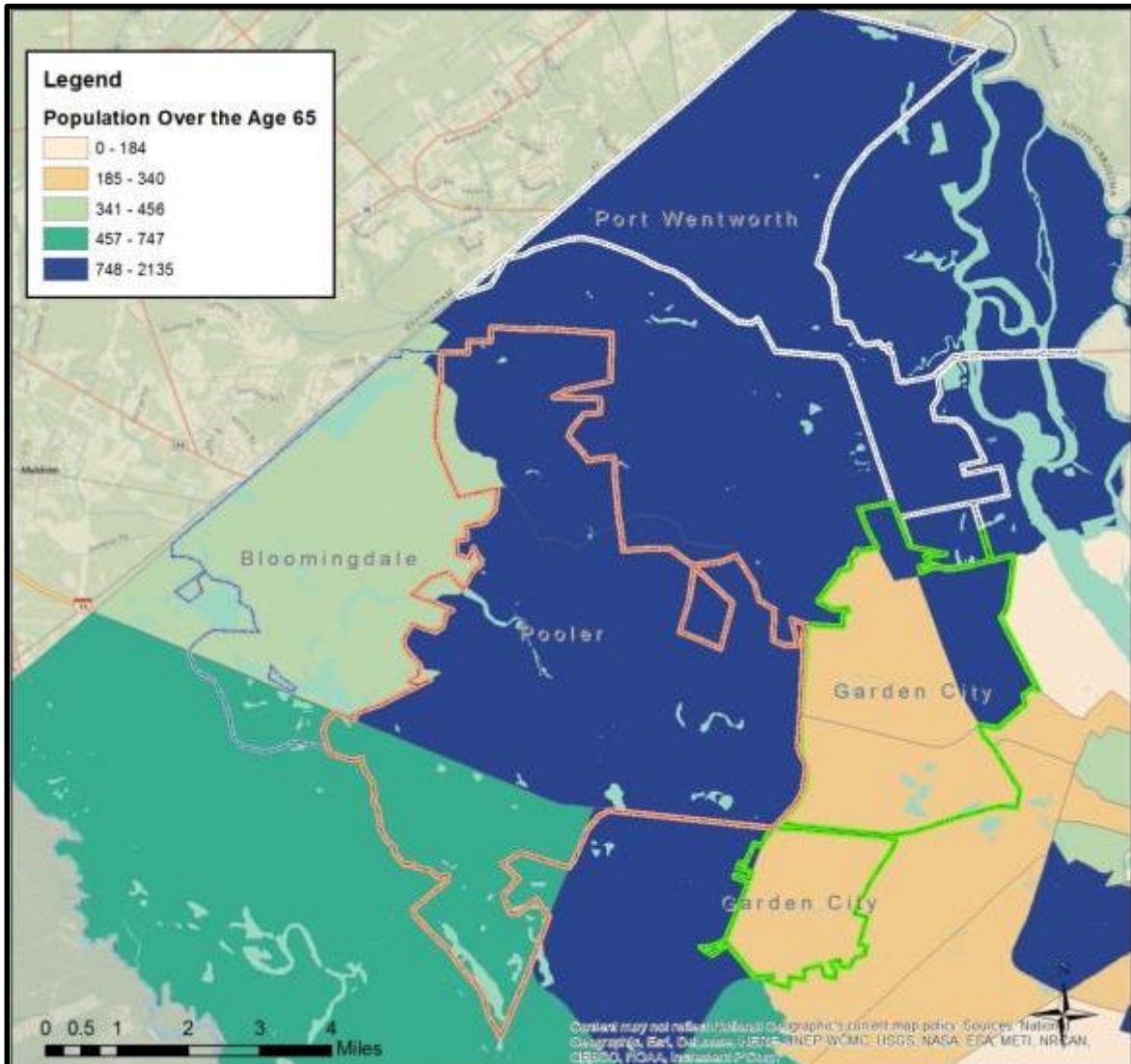


Figure 12. Population over the Age 65

Commute Flows for the West Chatham Area

In exploring data regarding commuters for Port Wentworth, Garden City, Pooler, and Bloomingdale, CUTR used the Longitudinal Employer-Household Dynamics (LEHD) data set. Longitudinal Employer Household Dynamics (LEHD) Program data link information regarding worker-employer interactions that is provided by state's Unemployment Insurance (UI) reporting and federal administrative data. LEHD is another valuable data source that bridges geographic and descriptive attributes by providing both origin-destination and demographic information. In turn, LEHD data are used to produce a number of products that gather information regarding jobs, workers, and economic issues that can assist transportation planning. Such tools are the OnTheMap and Quarterly Workforce Indicators (QWI) databases.

OnTheMap describes where workers are employed and where they live, and further delineates worker categories into age, income, race and ethnicity, education level, occupation industry, and type of employer ownership. QWI are economic indicators that provide employment-related information at a number of geographic levels, and can be further delineated by industry type, or gender and age of workers. The areas of focus are employment, job creation, wages, and worker turnover.

LEHD data is organized by the United States Census Bureau, but is mostly authored or provided by a participating state's UI system and Quarterly Census of Employment and Wages (QCEW). QCEW data is subsequently linked with federal administrative records. Moreover, QCEW provides employer information quarterly in the form of workplace locations, monthly employment, and quarterly wages, while the Statistical Administrative Records System (StARS) releases information about individual workers. StARS is also maintained by the Census Bureau in the form of a repository that supports its economic and demographic-related programs.

The ability to discern employment patterns in the United States provides transit agencies with a powerful utility in planning transportation development, and indirectly, creating more livable environments in which home-to-work traffic flows can be streamlined. Consequently, transit service can be greatly improved by acknowledging the most traveled thoroughfares in a given area. LEHD data also augment the information provided by census reporting, the combination of which can provide a valuable resource in ascertaining growth patterns. Since the dichotomy of daily work travel and traffic congestion are complementary aspects of each other, transit planning based on sound data is compulsory for any project designed to ameliorate this issue. In that regard, LEHD data can be influential in promoting livability initiatives.

Port Wentworth

Table 1 below shows that there are 1,850 people living in Port Wentworth and 2,307 people employed within in the city. However, 2,264 of the people who work in Port Wentworth live outside the city and only 43 both live and work in the city. This means that 1,807 residents of Port Wentworth work outside of the city. Figure 13 shows the inflow and outflow of commuters in Port Wentworth.

Table 1. Inflow/Outflow Counts for Port Wentworth

	2011	
	Count	Share
Employed in the Selection Area	2,307	100.0%
Employed in the Selection Area but Living Outside	2,264	98.1%
Employed and Living in the Selection Area	43	1.9%
Living in the Selection Area	1,850	100.0%
Living in the Selection Area but Employed Outside	1,807	97.7%
Living and Employed in the Selection Area	43	2.3%

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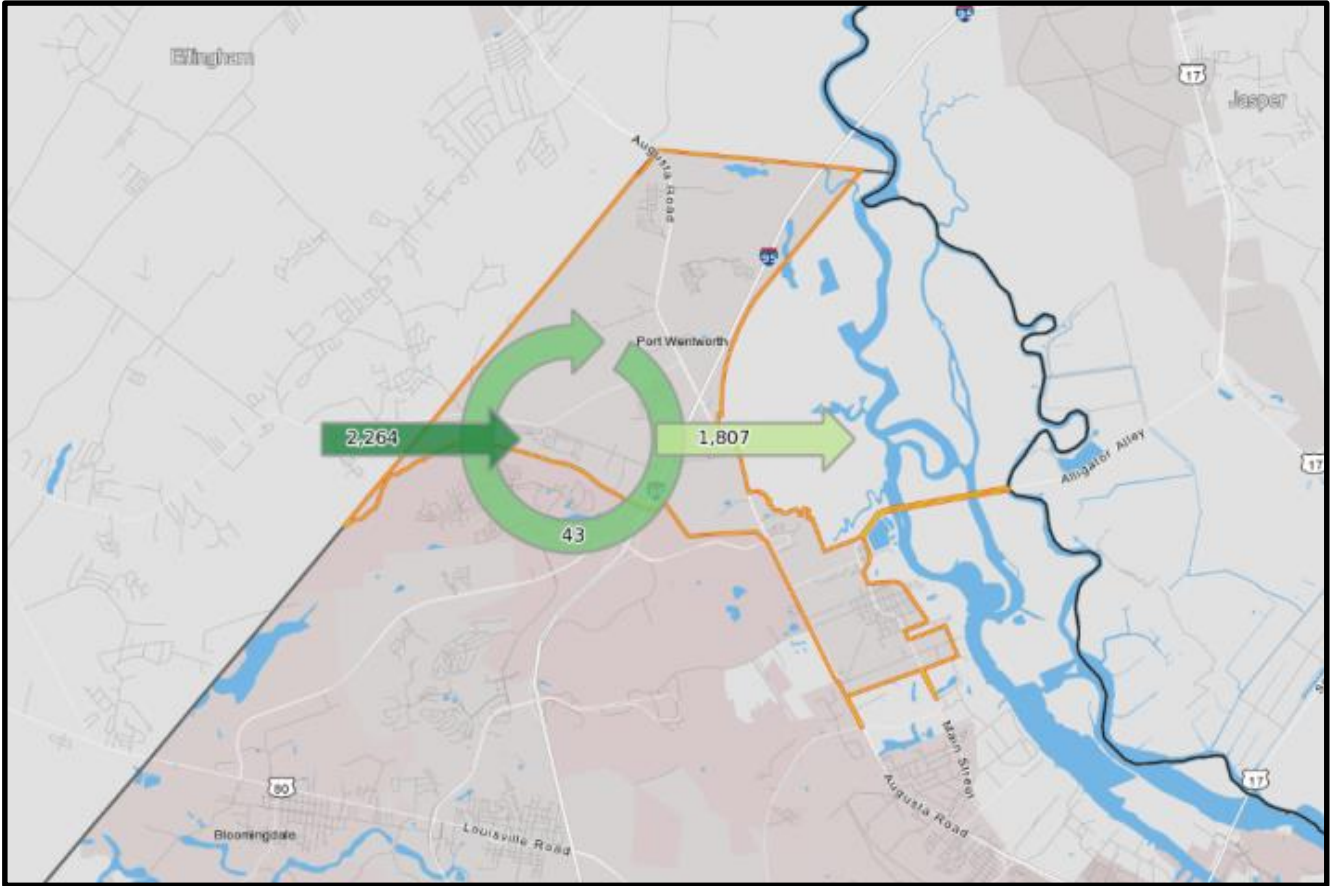


Figure 13. Graphic Depiction of Inflow/Outflows for Port Wentworth

Garden City

Table 2 below shows that there are 3,028 residents of Garden City and 8,492 people employed within the city. Of the 8,492 people employed, 8,143 live outside the city and 349 live and work within the city. There are 2,679 residents of Garden City who work outside of the city. Figure 14 below shows the commuter inflows and outflows for Garden City.

Table 2. Inflow/Outflow Counts for Garden City

	2011	
	Count	Share
Employed in the Selection Area	8,492	100.0%
Employed in the Selection Area but Living Outside	8,143	95.9%
Employed and Living in the Selection Area	349	4.1%
Living in the Selection Area	3,028	100.0%
Living in the Selection Area but Employed Outside	2,679	88.5%
Living and Employed in the Selection Area	349	11.5%

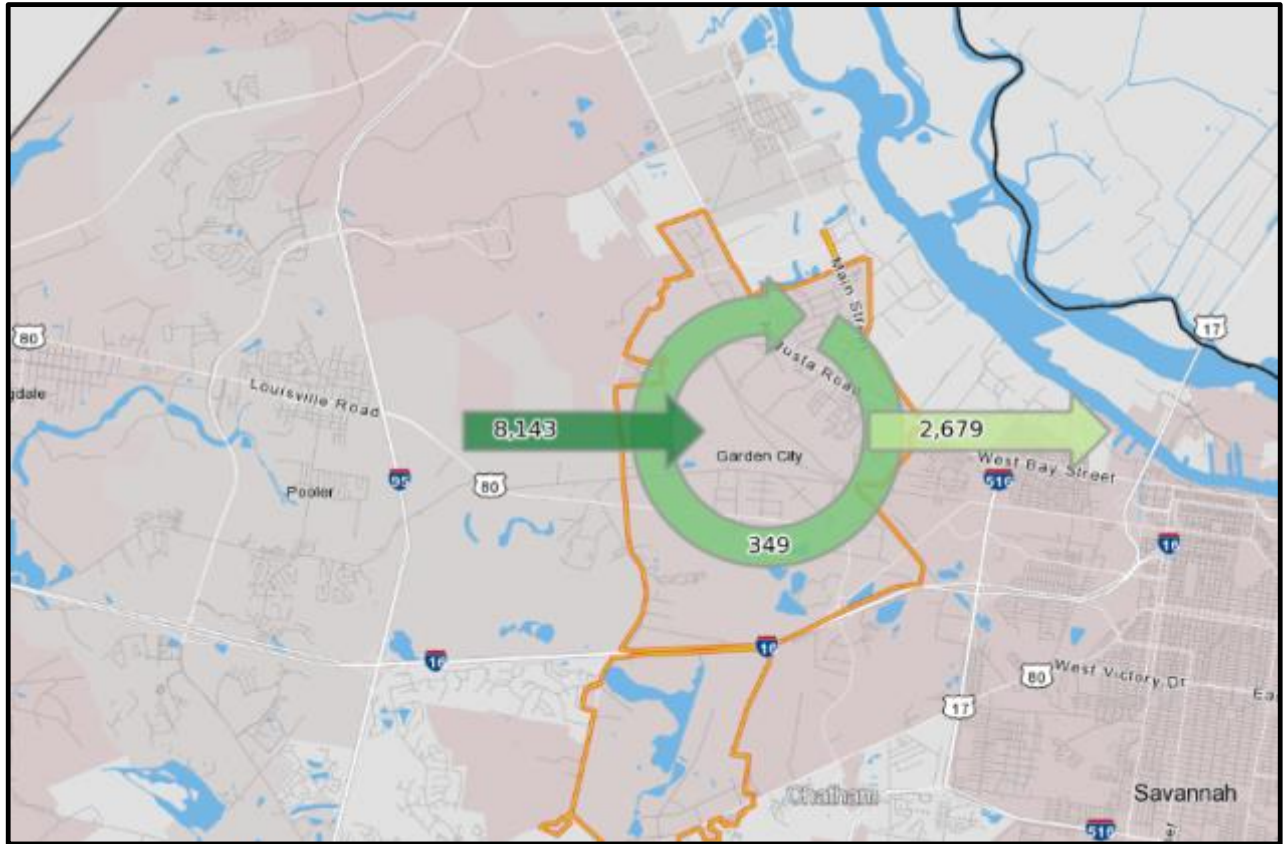


Figure 14. Graphic Depiction of Inflows/Outflows for Garden City

Pooler

Table 3 below shows that there are 8,532 residents of Pooler and 7,197 people working within the city. Of those 7,197 people working in the city, 6,611 people live outside the city such that there are 586 people who live and work in the city. A total of 7,946 residents of Pooler work outside the city. Figure 15 below shows the commuter inflows and outflows for Pooler.

Table 3. Inflow/Outflow Counts for Pooler.

	2011	
	Count	Share
Employed in the Selection Area	7,197	100.0%
Employed in the Selection Area but Living Outside	6,611	91.9%
Employed and Living in the Selection Area	586	8.1%
Living in the Selection Area	8,532	100.0%
Living in the Selection Area but Employed Outside	7,946	93.1%
Living and Employed in the Selection Area	586	6.9%

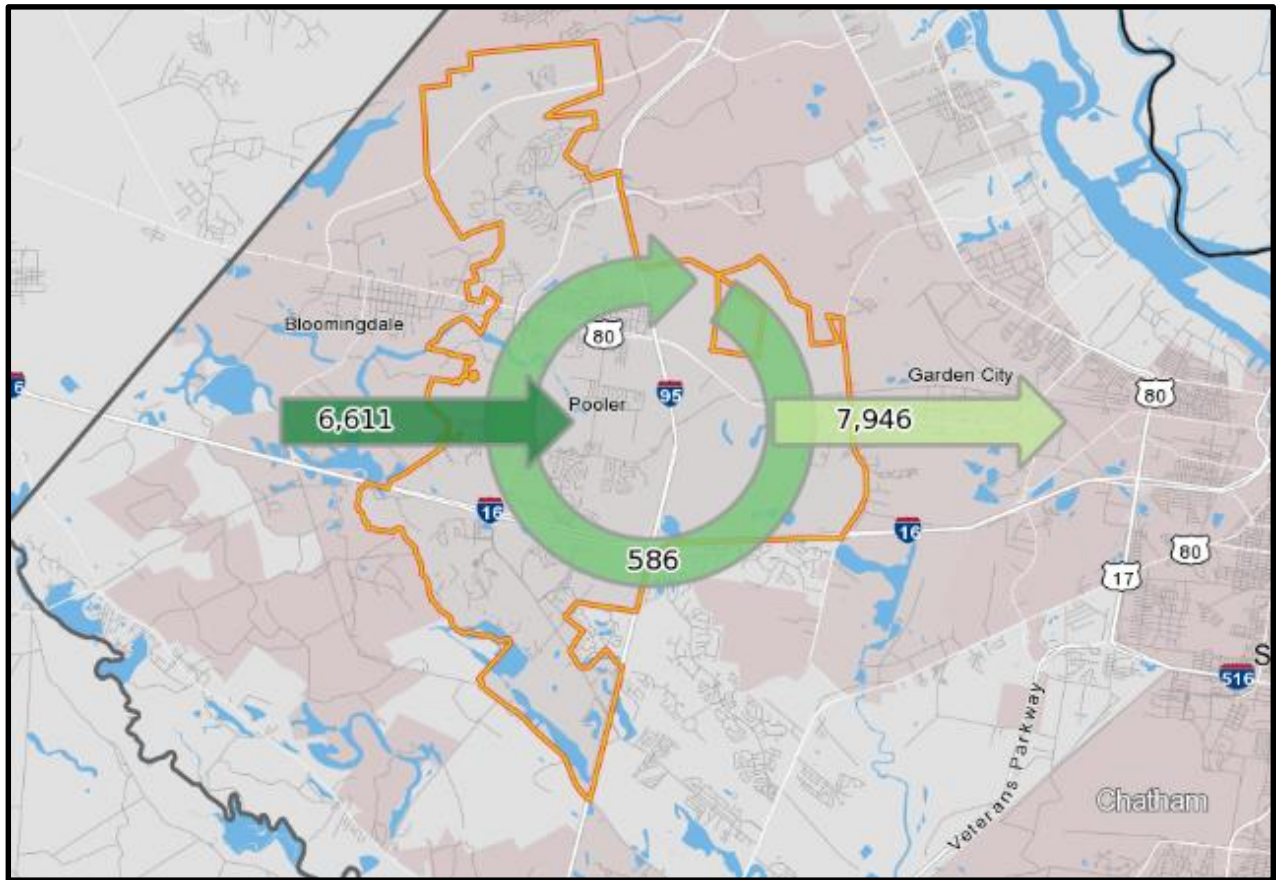


Figure 15. Graphic Depiction of Inflows/Outflows for Pooler

Bloomingtondale

Table 4 below shows that there are 1,317 residents of Bloomingtondale and 212 people work within the city. Of the 212 people who work in the city, 184 of them commute from outside the city. There are 28 people who live and work in Bloomingtondale. Of the 1,317 residents living in Bloomingtondale, 1,289 commute to work outside the city. Figure 16 below shows the commuter inflows and outflows for Bloomingtondale.

Table 4. Inflow/Outflow Counts for Bloomingtondale

	2011	
	Count	Share
Employed in the Selection Area	212	100.0%
Employed in the Selection Area but Living Outside	184	86.8%
Employed and Living in the Selection Area	28	13.2%
Living in the Selection Area	1,317	100.0%
Living in the Selection Area but Employed Outside	1,289	97.9%
Living and Employed in the Selection Area	28	2.1%

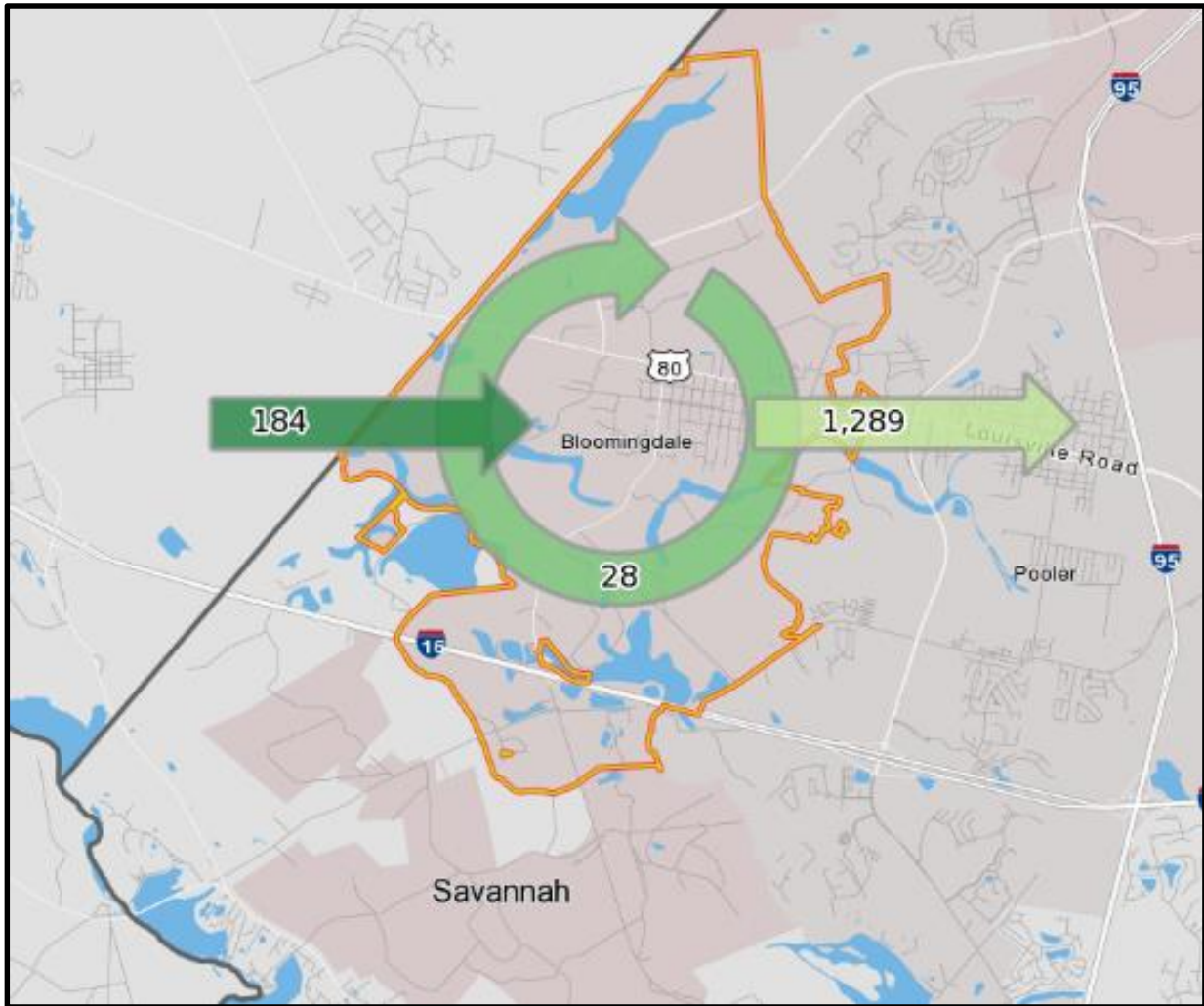


Figure 16. Graphic Depiction of Inflows/Outflows for Bloomingdale

Meetings with Jurisdictions

As part of the initial public outreach for the study, efforts were made to meet with all West Chatham County municipalities (Bloomingdale, Garden City, Pooler, and Port Wentworth)

CUTR met with representatives of Bloomingdale, Pooler, and Garden City. Representatives of Port Wentworth attended one of the subsequent public workshops.

The purpose of the meetings was to seek an understanding of local mobility issues, discuss the concerns / interest of being designated within the CAT transit district, and define the objectives and approach of the feasibility study being conducted by CUTR. Local officials were also requested to help coordinate a venue for public participation at workshops. Garden City and Pooler were more than helpful with this by offering their facilities and communication support.

Bloomingdale has a population of approximately 2,700 people living within city limits of 13 square miles. In general, the citizens of Bloomingdale feel the city is too rural and is not in need of urban public transportation services. In fact, there has not been a request for rural services at City Hall.

Representatives of Garden City indicated that there is an appreciation for CAT because there are many residents using the service now. Regarding any future services, the city indicated that more information would be needed regarding which parcels would be impacted from an ad valorem tax perspective if new services were implemented. The city would be more interested in service on Hwy 307, specifically serving the City Hall area because of a pending application for a senior housing grant which grants incentives if public transportation is available.

Pooler representatives simply stated that the residents of Pooler do not want transit service, they do not want CAT coming into the community, and they do not wish to be in the District. Pooler representatives also indicated that with the impacts of development in the city, there could emerge a need for transit services in the future.

Workshop Scheduling and Venues

After coordination between CAT and the cities, the workshop dates were set for Wednesday, March 25 at City Hall in Pooler and Thursday, March 26 at City Hall in Garden City. The cities of Pooler, Garden City, and CAT staff were responsible for promoting the workshops. CUTR was responsible for developing workshop materials for the content of the workshops. CAT developed comment cards to distribute during the meetings as shown in Figure 17 below.



CUSTOMER COMMENTS
Please take a few moments to complete the following to help us better serve you.

1. On a scale from 1 to 5, five being the highest and one being the lowest, please rate the following:

The presentation was informative.	1	2	3	4	5
I understood the message conveyed in the presentation.	1	2	3	4	5
Overall, how did we meet your needs today?	1	2	3	4	5

2. Comments/Suggestions to help Chatham Area Transit better serve you:

Please check, if you would like to subscribe to the CAT Newsletter and provide your email below.

CAT
CHATHAM AREA TRANSIT

Stay connected
with us!

Figure 17. Comment Card Used at Workshops

Content of Workshops

CUTR then set about developing workshop materials in the form of a PowerPoint presentation and then developing a facilitation plan. The organization of the presentation was as follows:

- Conveying the objectives of the study;
- Providing an orientation to the CAT Making Connections Program and how that plan impacts the approach to mobility services for West Chatham;
- Introducing attendees to the various service types contemplated for the analysis;
- Providing a preliminary service concept for the Activity Center;
- Gaining feedback on the service concept;
- Presenting data from T-BEST to indicate the demographics that would be served;
- Providing a ridership forecast from T-BEST to indicate the utilization of the preliminary service design; and
- Final comments and feedback

Workshop Results

For purposes of this report, the results of both the Pooler and Garden City workshops will be combined. The workshops began with Dr. Chad Reese (Pooler workshop) and Ms. Val Ragland (Garden City workshop) welcoming the attendees and thanking them for coming. Mr. Rob Gregg of CUTR then explained the format of the workshop as shown in Figure 18 below.



Figure 18. Welcome Slide at Workshop

Mr. Gregg then explained to the audience the role of the Center for Urban Transportation Research (CUTR) in this study and the activities that Dr. Reese had asked CUTR to conduct. He then went over the study objectives as seen in Figure 19 below.

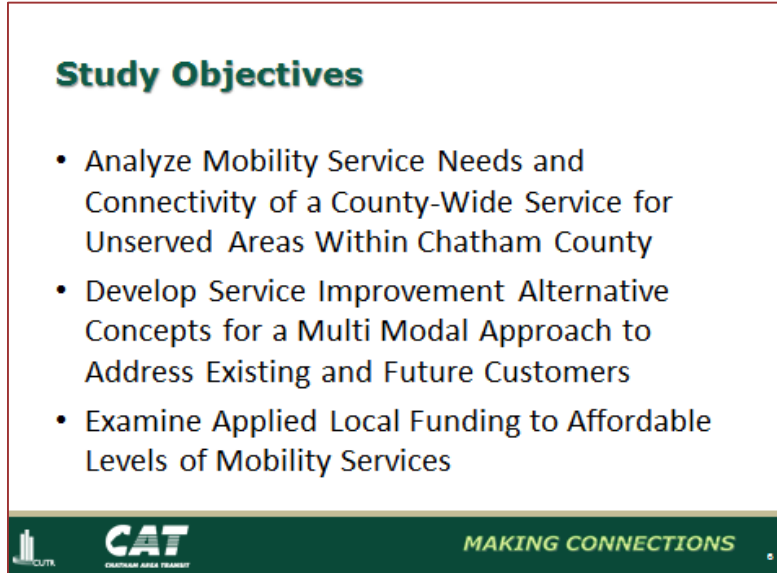


Figure 19. Study Objectives

Mr. Gregg then broke down the objectives into a series of tasks that would be undertaken for the study as seen in Figure 20 below.

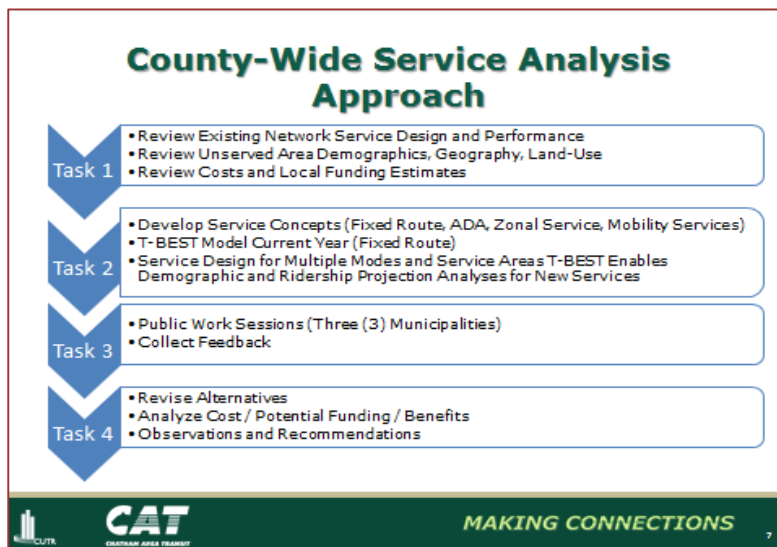


Figure 20. County-Wide Service Approach

Mr. Gregg explained to the audience that over the past two years, CAT had developed a business plan entitled "Making Connections." In this business plan, CAT decided that the agency should be a greater resource to the Chatham County community by expanding its range of services beyond the current fixed-route network in the area. He indicated that there have been several visual changes over the past two years such as the new Joe Murray Rivers Jr. Intermodal Transit Center in Downtown Savannah (Figure 21).



Figure 21. New Intermodal Transit Center

Mr. Gregg then explained the components of mobility management. He said mobility management requires the transit agency to engage significant effort in engaging the community and reaching out to new customer market segments, as shown in Figure 22 below.

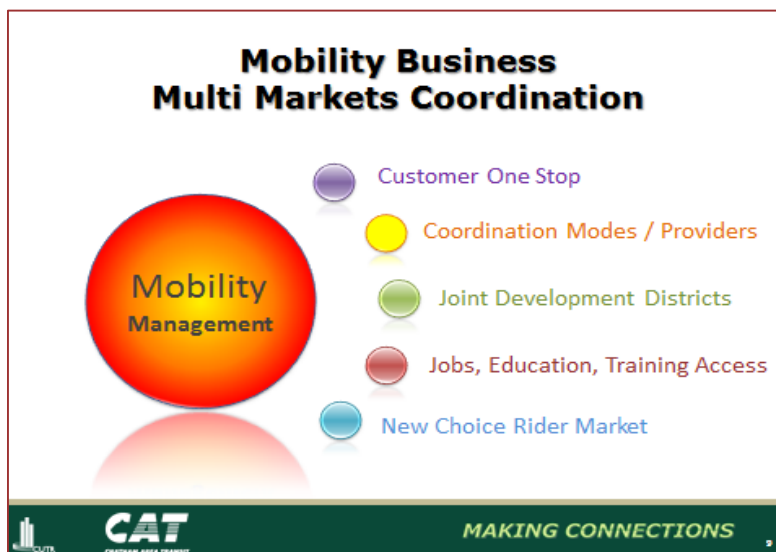


Figure 22. Mobility Business Multi Markets Coordination

WEST CHATHAM MOBILITY STUDY

Mr. Gregg explained that to be a true mobility manager, the agency must have a core bus service but then expand to serve special markets such as commuters, paratransit users, and activity center oriented services with associated travel planning support. The purpose is to connect through coordination, as seen in Figure 23 below.

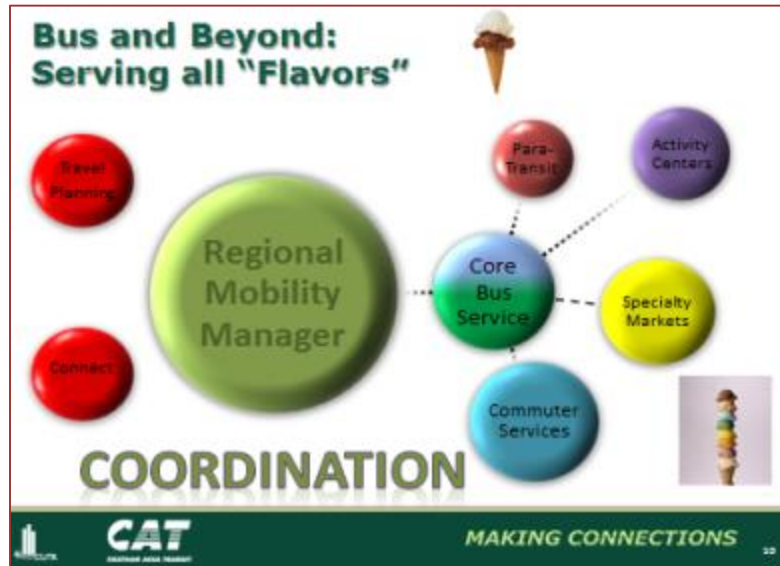


Figure 23. Regional Mobility

He then explained that there are commuters throughout the region within Chatham and also surrounding counties. He indicated that there are other types of service, such as vanpooling, that can serve those commuter markets as seen in Figure 24 below.



Figure 24. Regional Commuter Market

Mr. Gregg defined the core elements of the strategic business plan, which are to define markets and then establish the community relevance of service to serve those markets. Then the agency must define partnerships that will nourish that relevance and define expanded services as well as return on investments as shown in Figure 25 below.



Figure 25. CAT Business Plan

He then explained that in order to establish the relevance of expanded services, there are tools that CAT can use to determine the effectiveness, or return on investments, for those services as shown in Figure 26 below.

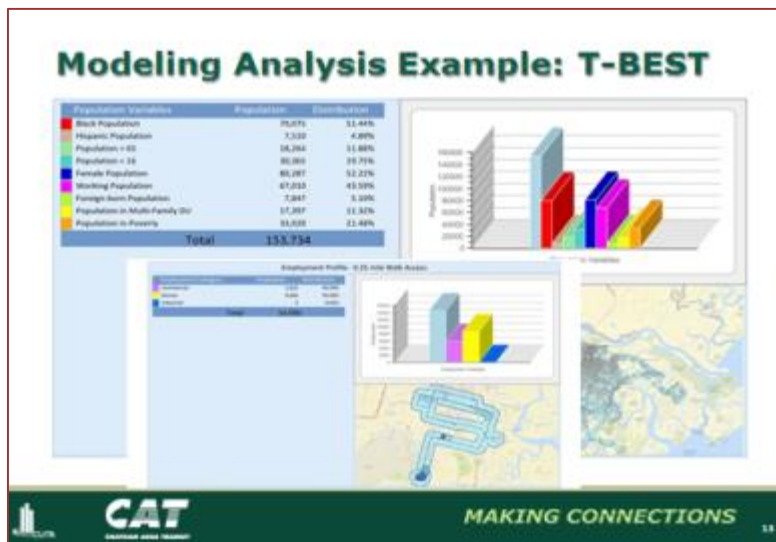


Figure 26. Modeling Analysis Example: T-Best

He then explained that one of the most important elements of the business plan is to identify the needs of businesses and understand the corridors where they are located. When transit serves the work force then transit contributes to a vibrant economy as seen in Figure 27 below.




Figure 27. Business Corridors

Mr. Gregg explained that different service types are needed to serve different markets. He spoke of how the business plan called for a zonal service in the Airport area (Figure 28 below) and commuter express services (Figure 29 below). He also emphasized the importance of CAT serving the market of bikers who require bike sharing services (Figure 30 below).

CAT Flex Zones

What is it?
A Flex Zone is an on-demand, curbside van-based service open to all passengers. This service has the advantages of a traditional fixed bus route with the convenience of curbside pickup.


How does one use it?
Flex Zones offer the convenience of door-to-door service by reservation, and the flexibility of walk-up service from a bus stop. This service will provide flex service from any place in your neighborhood flex zone to any other destination within your zone, as well as transfer locations to the fixed route service.




West Airport

Airport Blvd. Service 1 - Mountain/Other - West International Airport West

This area is currently served by CAT Route 8 and serves the Savannah/Hilton Head International Airport. Within a short distance north of the airport is Georgia Tech Savannah as well as industrial and manufacturing complexes along the river. Residential areas of Blountville and Pauline are west-southwest of the airport along U.S. Highway 80. The boundaries of this zone are Jimmy Doolittle Parkway to the north, the flight taxi line and Hwy 80 to the west and south, and S.R. 23 to the east.





MAKING CONNECTIONS

Figure 28. CAT Flex Zones

Express Services

ROUTE 114X

ABERCORN EXPRESS

SERVE BETWEEN

- Jet Bridge Plaza & Mountain Transit Center
- Alexander Hall

Express Bus Vehicle in Transpiration Mode

CAT | Savannah, GA | 910-220-2782 | www.cat.ga.gov | Monday through Saturday

ROUTE 100X

AIRPORT EXPRESS

SERVE BETWEEN

- Jet Bridge Plaza & Mountain Transit Center
- Savannah/Hilton Head International Airport

Express Bus Vehicle in Transpiration Mode

CAT | Savannah, GA | 910-220-2782 | www.cat.ga.gov | Monday through Saturday



MAKING CONNECTIONS

Figure 29. Express Services



Figure 30. Making Connections: CAT Bike

Finally, Mr. Gregg wrapped up the introduction to the business plan by explaining to the audience that CAT had made significant investments in technology which was going to enable the agency to significantly increase the quality of services provided and enhance customer service, as seen in Figure 31 below. He then explained the types of feedback we were looking to obtain from the audience as a result of the service concepts that were about to be presented (Figure 32 below).



Figure 31. Technology Information: One Stop Customer Services

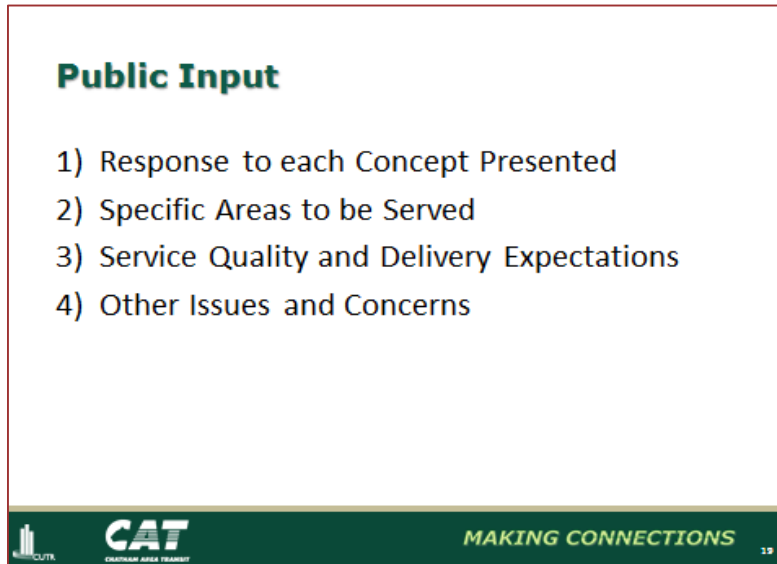


Figure 32. Public Input

Mr. Gregg then introduced Mr. William Morris of CUTR to present the preliminary service concepts (Figure 33) to the attendees. Mr. Morris began by explaining the context of West Chatham and the notion that when taken together, the area forms an activity center as seen in Figure 34 below.



Figure 33. Preliminary Service Concepts

West Chatham Setting

- Together, the Savannah Hilton Head International Airport, Port Wentworth, Garden City, Pooler and Bloomingdale form an activity center
- An activity center is characterized as a place with at least one major generator of activity with associated mixed-uses such as retail, suburban development, residential, and auxiliary employment

CUTA **CAT** CHATHAM AREA TRANSIT *MAKING CONNECTIONS* 24

Figure 34. West Chatham Setting

Mr. Morris explained the different service types (Figure 35) and then gave the detail of the components of each of those service types for fixed-route (Figures 36 and 37), paratransit (Figure 38), zonal service (Figure 39) and commuter assistance (Figure 40).

Service Types

- Fixed-Route
- Paratransit
- Zonal Service
- Commuter Assistance

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Figure 35. Service Types

Fixed-Route

- Fixed streets
- Fixed schedules
- Fixed hours of service
- Fixed bus stops along the route
- Provides mainline mobility and connectivity throughout the region
- Hauls maximum number of passengers within walking distance





MAKING CONNECTIONS

Figure 36. Fixed-Route




Figure 37. Current CAT Route 3

Paratransit



- Demand response
- Advanced reservations or subscription
- Service from customer origin to destination
- Usually associated with disabled, elderly and low-income persons
- Provides mobility to those who otherwise would be homebound and unable to travel
- Currently, paratransit is a County-wide service

 **CAT**
CHATHAM AREA TRANSIT

MAKING CONNECTIONS 28

Figure 39. Paratransit

Zonal Service




- Hybrid between fixed-route and paratransit service
- Vehicle operates to all origins and destinations
- At least one connection point
- Advanced reservations or in real time
- Built-in market around airports because of the cost of airport parking.

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Figure 38. Zonal Service

Commuter Assistance



- Mix of products and services
- Vanpools consist of people who work together and live near each other
- Van can be used for personal use on weekends
- Costs are shared and sometimes subsidized
- Common in companies with large work force

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CHATHAM AREA TRANSIT

MAKING CONNECTIONS 32

Figure 40. Commuter Assistance

At this point in the workshop, Mr. Gregg asked the audience to provide feedback on these service types and how the attendees might react to how effective they would be in Pooler.

Members of the Pooler audience discussed a number of topics, as follows:

- **Cost versus benefit** – Regardless of how beneficial any service type might be, once costs are considered then people would not choose to bear the burden of the cost even if they saw the benefit.
- **Potential of Pooler residents using transit service** – Most residents in the room expressed that they would never consider using CAT and therefore felt there is no need for service in the community.
- **The desire to have CAT buses operating in Pooler** – Residents expressed that they do not want CAT buses operating on their streets and in their community.
- **Residents' feelings about paying ad valorem taxes for transit service** – Many residents expressed that since they do not want CAT service in Pooler and would never use it, then the obvious conclusion is that they should not have to pay taxes on a municipal service that is not useful to them.
- **The degree to which CAT buses would impact traffic in the Pooler area** – Virtually all of the residents in the room indicated that Pooler is currently in a traffic nightmare and it was only going to get worse with the opening of the new outlet mall. They expressed that CAT buses operating on corridors in the city would only make traffic worse and residents would resent it even more.

- **Residents imposing the requirement that if service is implemented, they can vote to cancel it at any time** – One attendee indicated that no matter the outcome of Pooler’s entrance into the Authority, Pooler residents should have the power to cancel a new service at any time if they felt it is not benefitting them as residents.
- **The sentiment that only users outside of Pooler would use service but Pooler residents would have to pay for it** – Residents acknowledged that Pooler is a destination for those coming to the city to access jobs. However, they indicated that this is of no benefit to the city because they do not spend their money in the city, they do not pay city taxes, and they provide no benefit to the residents of Pooler.

Members of the Garden City audience spoke about the following:

- **Communication** – It would have been nice if CAT had communicated to the city regarding the proposed legislation and what it would mean for the city and its residents.
- **Service Access** – A gentlemen in the audience spoke of his apartment complex on Hwy 80 wherein he has to walk a long distance to access service at the Sheriff’s Department on Chatham Parkway or walk a long distance to access the Route 3 in Garden City. He indicated that service on Hwy 80, of which currently there is none, would be helpful.
- **New senior development in Garden City** – the City is attempting to build a senior housing development adjacent to City Hall and service is necessary in terms of successfully landing a grant to build the facility.

Mr. Gregg then turned the presentation back to Mr. Morris to discuss the preliminary service concepts. Mr. Morris explained that now that the service types had been established, they now had to be applied to the West Chatham area, as shown in Figure 41 below.

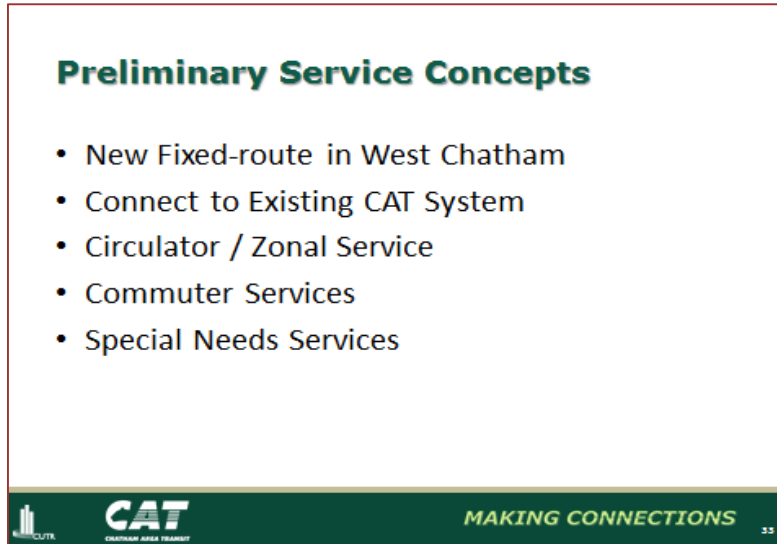


Figure 41. Preliminary Service Concepts

Mr. Morris explained that the map had the existing CAT services in West Chatham. The orange route is the Route 100X which operates between Downtown Savannah and the Airport. The green route is the current Route 3 operating in West Chatham. However, the route in blue is the proposed route. The route is designed to unify the eastern and western sides of the activity center. As designed, the route would terminate in Port Wentworth on the east side, travel down Hwy 21 into Garden City, then north on Augusta to Hwy 307, then south on Hwy 307 to Hwy 80 and then west to Pooler Parkway north to the new outlet mall. Mr. Morris then explained that to support the fixed-route services in the activity center, there would be two zonal services: an eastern zonal service and a western zonal service. The western zonal service would serve the airport, Pooler and Bloomingdale. The eastern zonal service would service the airport, Garden City and Port Wentworth. The preliminary service concepts are shown in Figure 42 below.

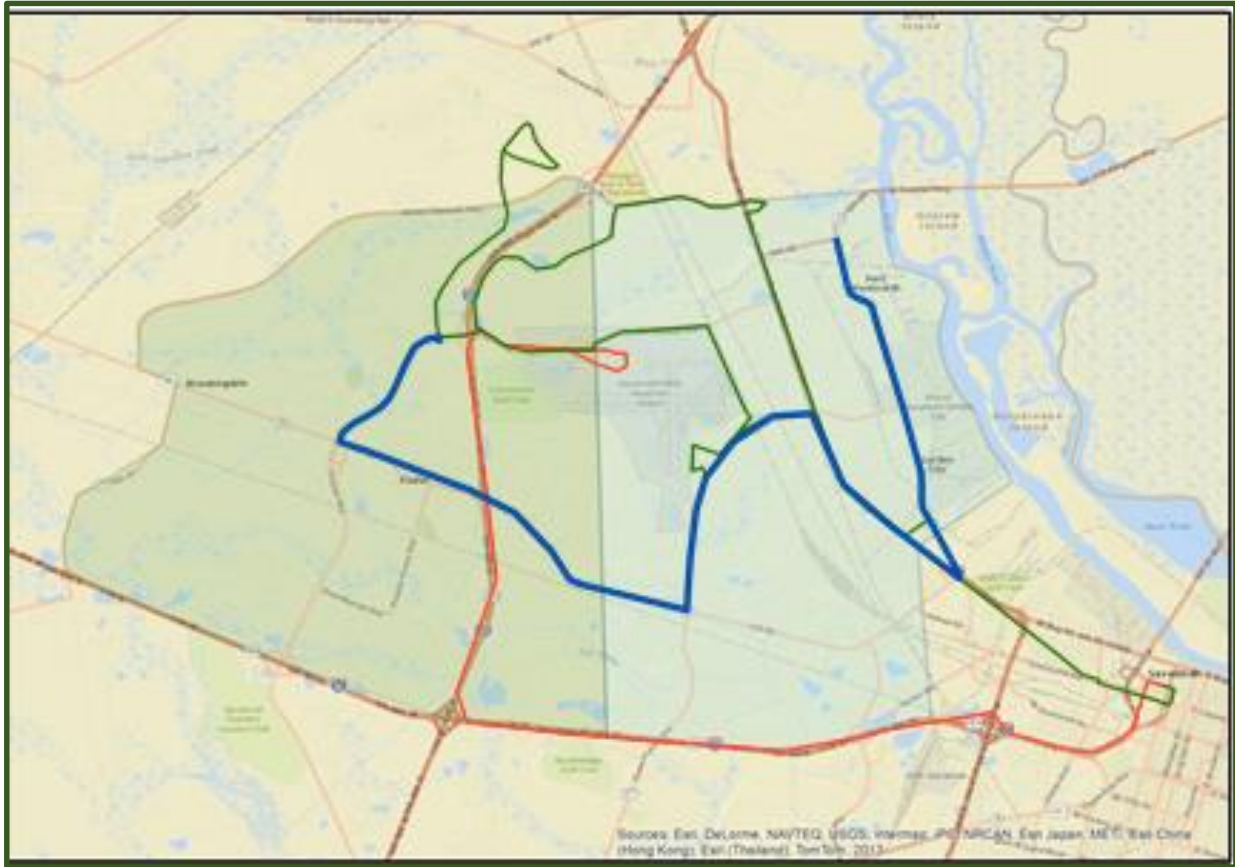
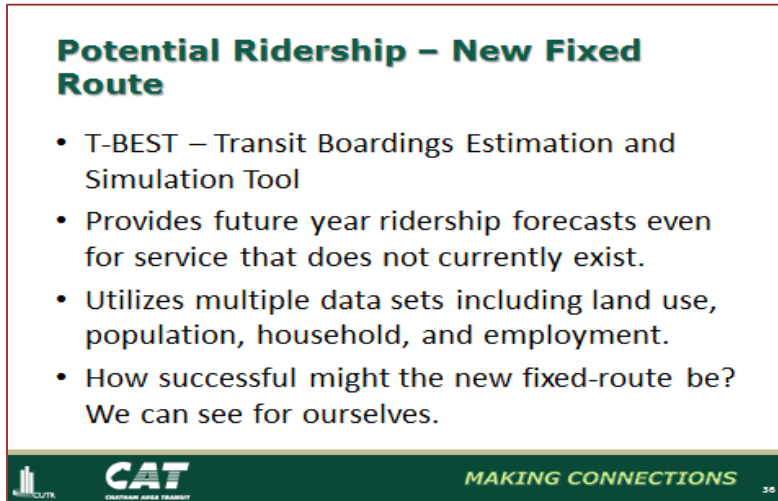


Figure 42. Map of Preliminary Service Concepts

Mr. Morris then explained that there is a model which can shed insight as to how much ridership would be generated by the preliminary fixed-route design. Elements of the T-BEST model are shown in Figure 43 below.



Potential Ridership – New Fixed Route

- T-BEST – Transit Boardings Estimation and Simulation Tool
- Provides future year ridership forecasts even for service that does not currently exist.
- Utilizes multiple data sets including land use, population, household, and employment.
- How successful might the new fixed-route be? We can see for ourselves.

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Figure 43. T-BEST Forecast of Potential Ridership for new Fixed-Route

Mr. Morris explained that for employment (Figure 44), there are 4,013 employees within ¼ mile of the proposed route, with employment categories of commercial, service, and industrial. Service employees constitute roughly half of the employees within ¼ mile (Figure 45). Figure 46 shows the distribution of the working population. Figure 47 shows the distribution of commercial employment. Figure 48 shows the distribution of industrial employment and Figure 49 shows the distribution of service employment. Figure 50 below displays the intensity of employment and how those intensities would be served by the proposed route in Pooler.



**T-BEST -
Employment**

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Figure 44. T-Best Employment

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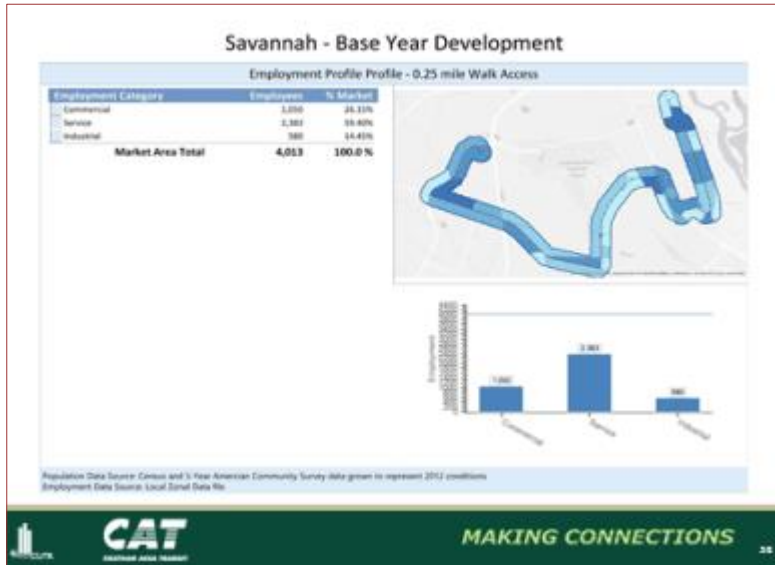


Figure 45. Employment Categories

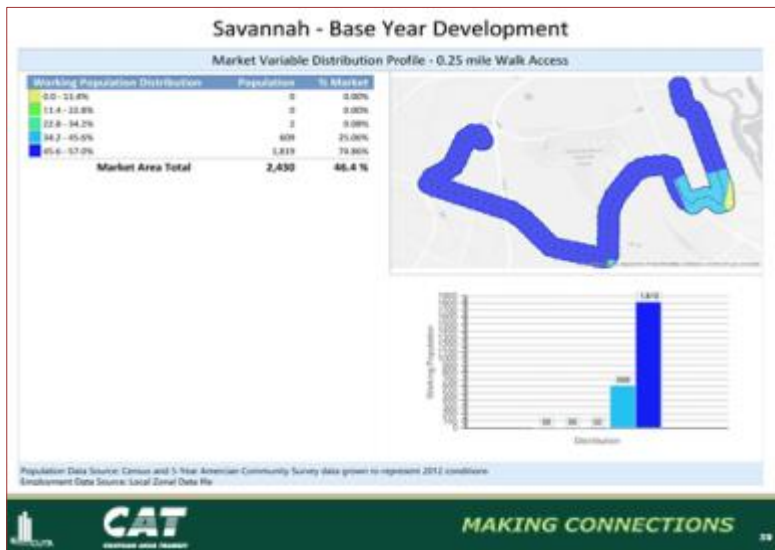


Figure 46. Working Population Distribution

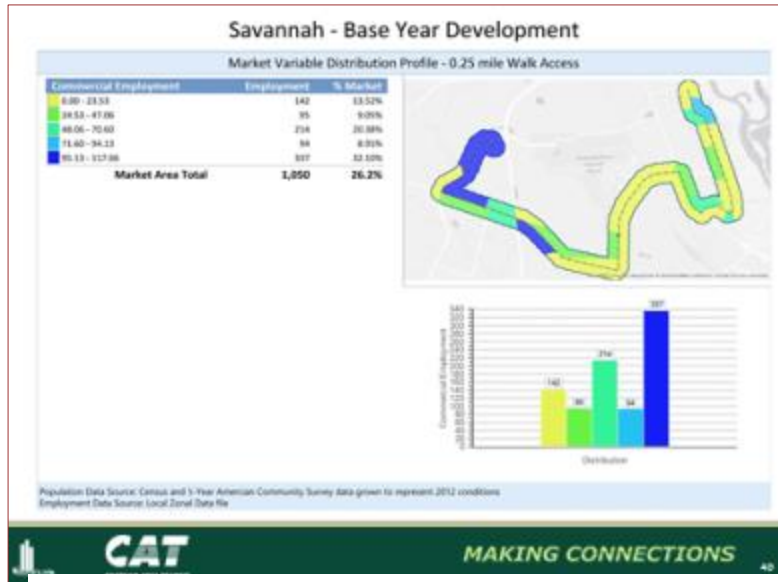


Figure 48. Commercial Employment

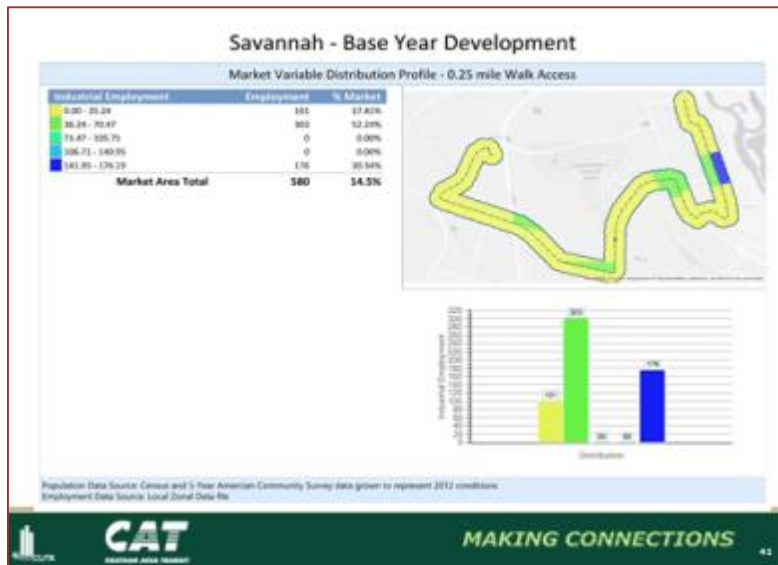


Figure 47. Industrial Employment



Figure 50. Service Employment Distribution

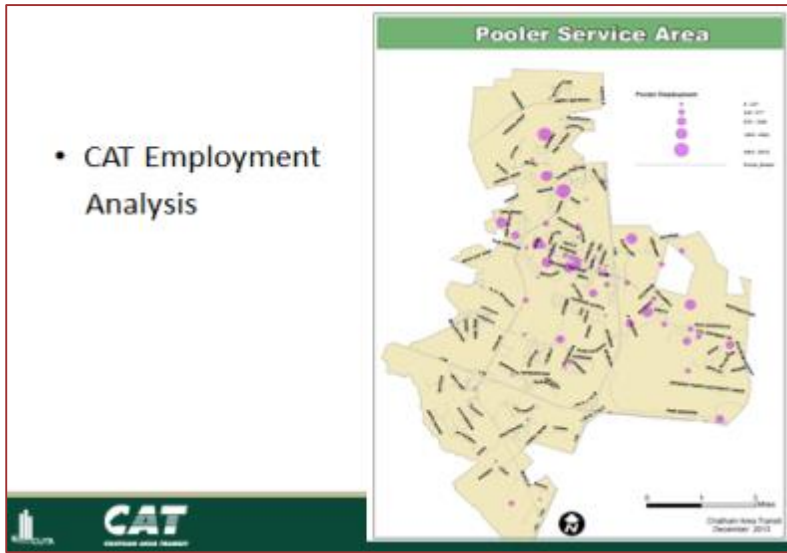


Figure 49. Concentrations of Jobs

Mr. Morris explained that for household data (Figure 51), the distribution of households showed that the greatest concentration of households is in Pooler (Figure 52). Figure 53 shows the distribution of households in multi-family dwelling units, and those are evenly concentrated in Port Wentworth, Garden City, and Pooler. Figure 54 displays the households with zero vehicles of which the greatest concentration is in Garden City. Figure 55 shows household income distribution showing that the higher incomes are in Pooler and the lower household incomes are in Garden City and Port Wentworth.



Figure 52. T-Best Household

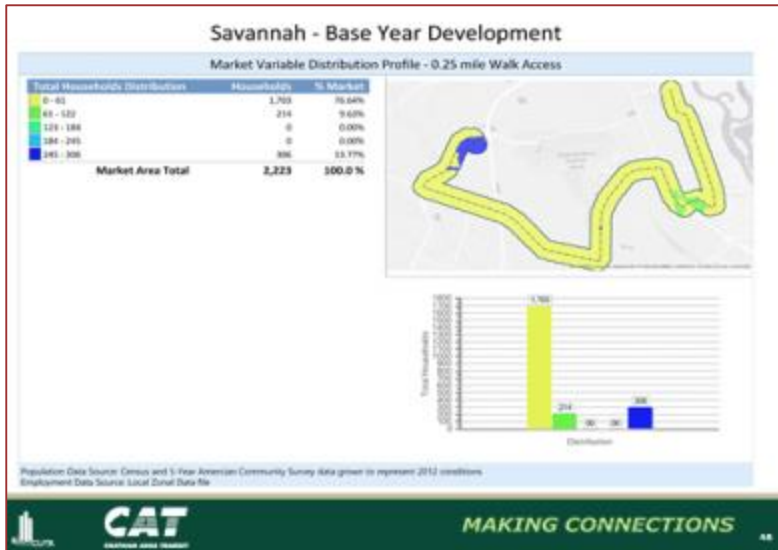


Figure 51. Total Household Distribution

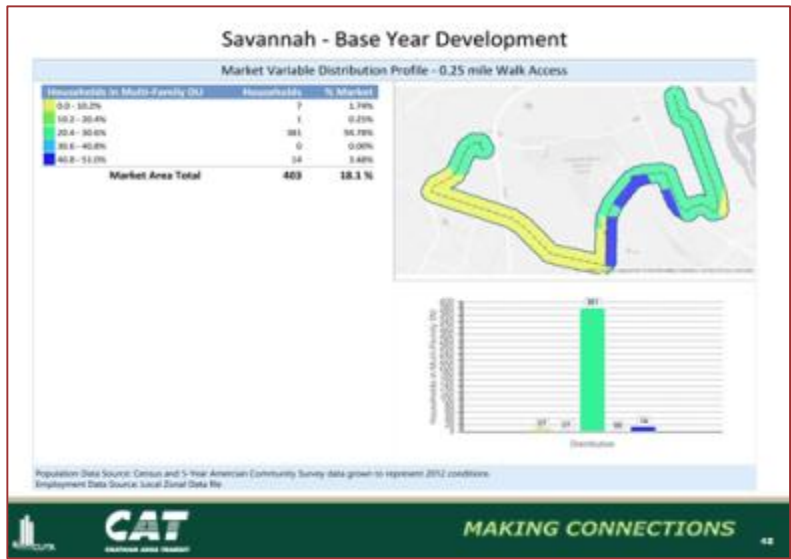


Figure 54. Households in Multi Family Dwelling Units



Figure 53. Zero-Vehicle Households

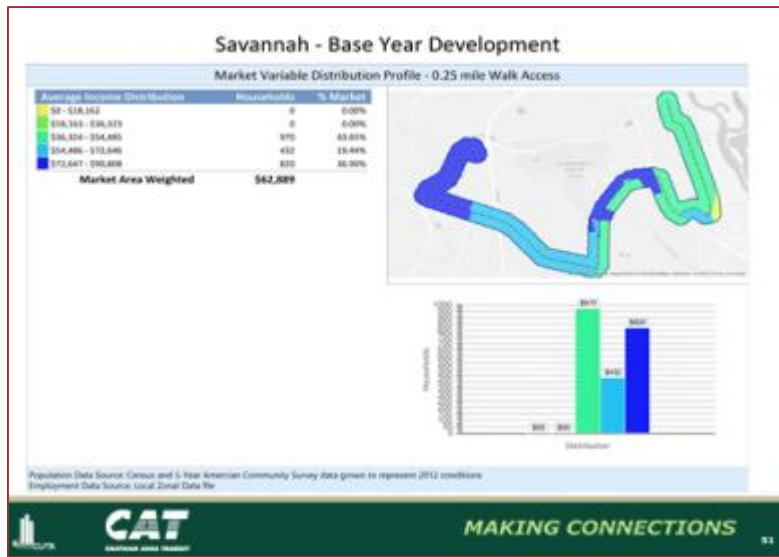


Figure 55. Average Income Distribution

For population data (Figure 56), Mr. Morris explained that minority populations are equally distributed between Pooler, Garden City, and Port Wentworth (Figure 57). Population over the age of 65 has a slightly greater distribution in Garden City (Figure 58). Population under the age of 18 is evenly distributed between Pooler, Garden City, and Port Wentworth (Figure 59). Population in poverty has the greatest concentration in Garden City (Figure 60).



Figure 56. T-Best Population

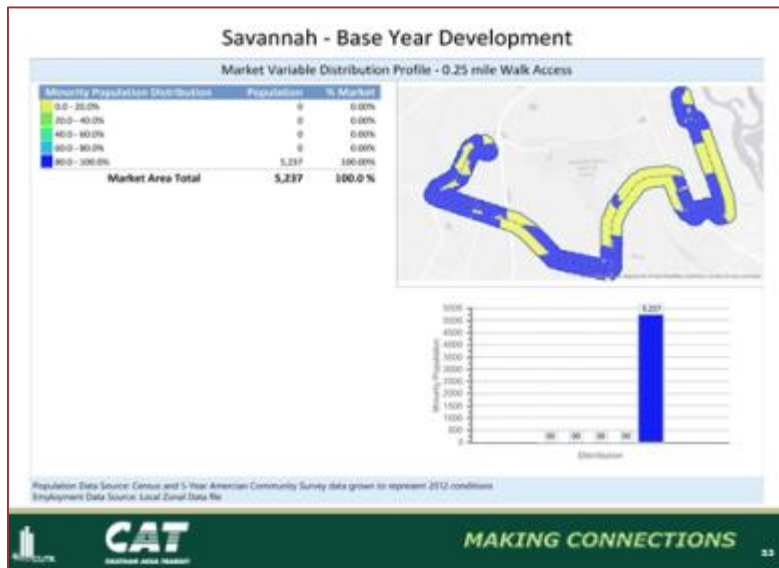


Figure 57. Minority Population Distribution

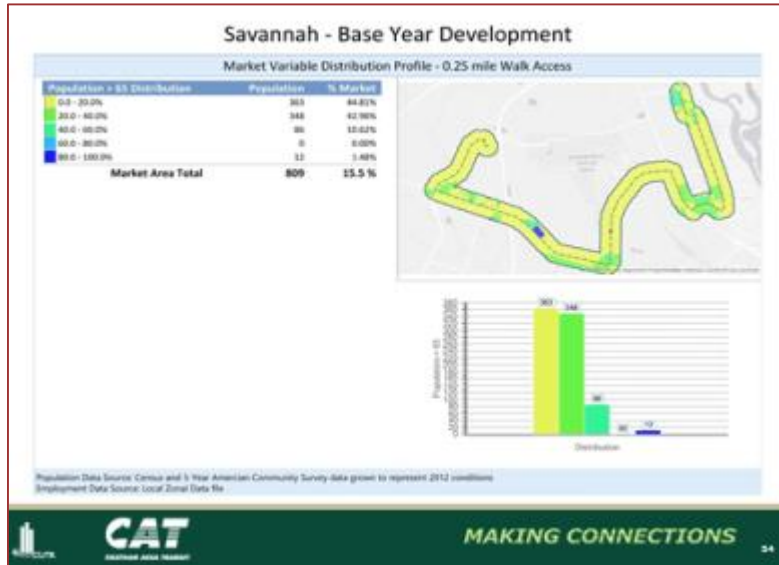


Figure 59. Population > 65 Years of Age

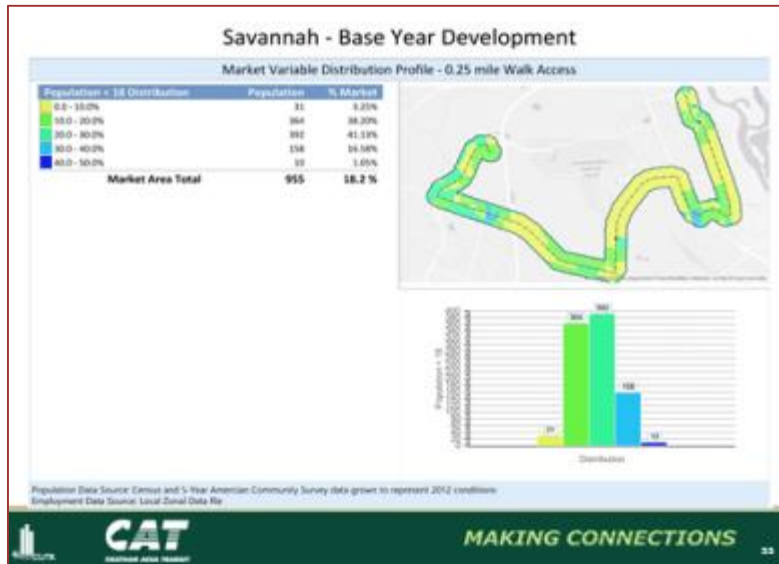


Figure 58. Population < 18 Years of Age

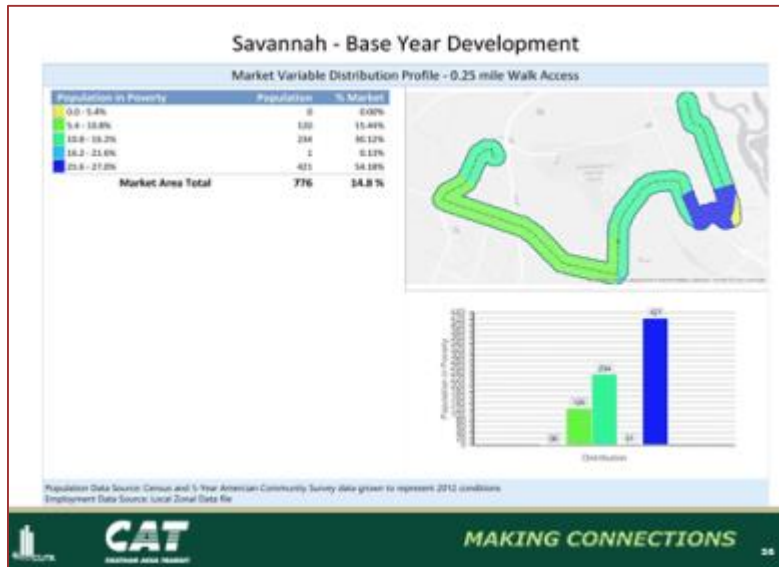


Figure 60. Population in Poverty

Finally, Mr. Morris provided the audience with the ridership forecast for this routing configuration from T-BEST. The forecast shows a total of 114 total daily boardings with 34,650 annual boardings. Figure 61 shows the ridership forecast for the route presented in the workshop

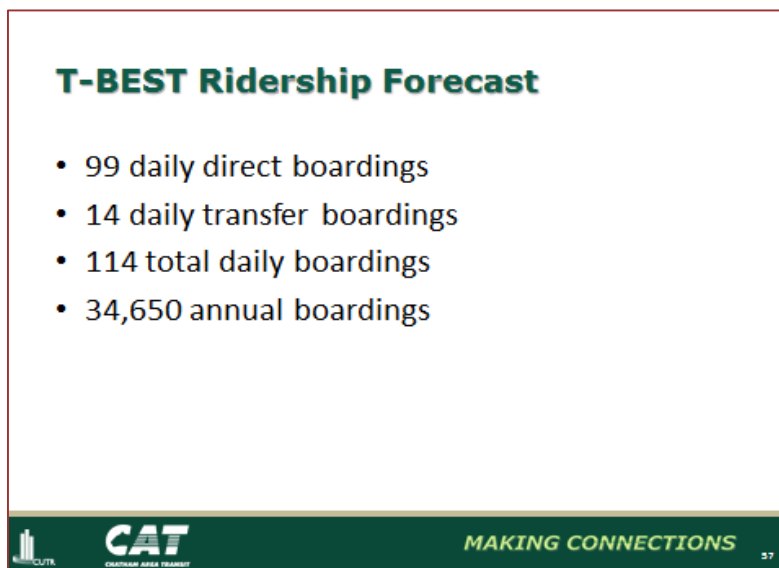


Figure 61. T-Best Ridership Forecast

Audience discussion ensued following Mr. Morris's presentation. The general sentiment among attendees was that if there was going to be service to Pooler, it should be an express route from Downtown Savannah to the outlet mall. Residents also saw some value to a commuter assistance program especially when applied to Gulfstream Aerospace.

Comment Cards

A total of 19 comment cards were received at the Pooler workshop. No comment cards were received in Garden City. Below is a list of comments received. Some may be incomplete due to handwriting. They are as follows:

I would not use CAT. However, it may cause a huge traffic problem on Hwy. 80.

Pooler would not benefit enough to justify the tax burden.

We don't need you. We don't want you in Pooler.

Not needed. Regional vans and Teleride are working now.

Cost versus benefit is neither. In fact it's backward.

Transit is for workers

Need to know specific routes? Cost to us. Must have pull-off areas for stops. Needs to be voted on by Pooler citizens. Please send me presentation web site. Most Pooler residents don't live within ¼ mile of any stops. Doesn't help Pooler. Maybe just take to mall.

No costs to Pooler property owners or residents. No stops on the Pooler Parkway or Highway 80. Small vans for disabled people is okay. Why hasn't Gulfstream hired CAT to transport its employees? Could not read your charts?

Cannot find if there is a need without taking cost into account. Pooler residents do not need a fixed bus nor any other type. I do not want to pay for this in my taxes. If other cities need to come to Pooler they should pay for the service.

Keep out of Pooler.

Why is CAT just now trying to come to Pooler? Pooler has been growing for years.

Pooler does not want or need a bus out here. People can use a car. CAT is noisy, dirty and does not take care of their stops. We are already overcrowded out here and don't need buses.

I felt like I was sitting through a Kirby vacuum sales pitch and then hit price tag – but they never discussed the cost.

No fixed-route. It is not cost effective for the people of Pooler to pay for 99 people to ride the bus. Also the roads are too congested for buses. If the mall wants bus service make

them provide it not us. We will have to deal with the traffic and other problems it will bring. Not interested in any bus service at all.

Video presentations poor – not visible and hard to understand. Suggest hand-outs for next meeting. Pooler will not benefit from CAT. It only compounds traffic problems.

Need buses on Rogers Street and Pine Barron.

Refinement of Service Concepts with Alternatives

Utilizing the base data collected, an analysis of existing network services, a sense of demand and areas to be served, and input from local officials and the public workshops, CUTR and CAT staff began to work on some alternatives for service in West Chatham. Garden City has plans to build a senior development adjacent to City Hall. The city receives extra points on their grant application if the senior development is served by transit. Four routes were developed for Garden City that provide two different routing configurations between Garden City City Hall and Downtown Savannah and two different routing configurations between Garden City City Hall and Oglethorpe Mall. A fifth route was designed to provide internal circulation within Garden City using Highway 307, Ogeechee Road, Chatham Parkway, and Highway 80 as the primary corridors. Finally, a new route was added between the WalMart Supercenter on Ogeechee Road and the new outlet mall in Pooler traveling on Quacco Road and Pooler Parkway. Below is a description of the routing alternatives.

Brown Route – South End of Line to North End of Line

From the WalMart Supercenter on Ogeechee, north on Ogeechee to Quacco Road, Quacco Road then becomes Pooler Parkway, north on Pooler Parkway to the new outlet mall.

Pink Route - South End of Line to North End of Line

From Garden City City Hall, north on Highway 307 to Augusta Road, Augusta Road then becomes Bay Street, and in to the Downtown Intermodal Center.

Blue Route - South End of Line to North End of Line

From Garden City City Hall, north on Highway 307 to Highway 80, then Highway 80 into the Downtown Intermodal Center.

Green Route – Loop

From Garden City City Hall, south on Highway 307 to Ogeechee Road, north on Ogeechee Road to Chatham Parkway, north on Chatham Parkway to Highway 80 into Garden City, then south on Highway 80 to Highway 307, and south on Highway 307 to Garden City City Hall.

Yellow Route – East End of Line to West End of Line

From Garden City City Hall, south on Highway 307 to Ogeechee Road, north on Ogeechee Road to Chatham Parkway, south on Chatham Parkway to Staley Avenue, east on Staley Avenue to Montgomery Street, south on Montgomery to Abercorn, and into Oglethorpe Mall.

Purple Route – East End of line to West End of Line

From Garden City City Hall, north on Highway 307 to Highway 80, east on Highway 80 to Chatham Parkway, south on Chatham Parkway to Staley Avenue, east on Staley Avenue to Montgomery Street, south on Montgomery to Abercorn, and into Oglethorpe Mall.

Figure 62 below displays the routing configurations for service alternatives.

WEST CHATHAM MOBILITY STUDY

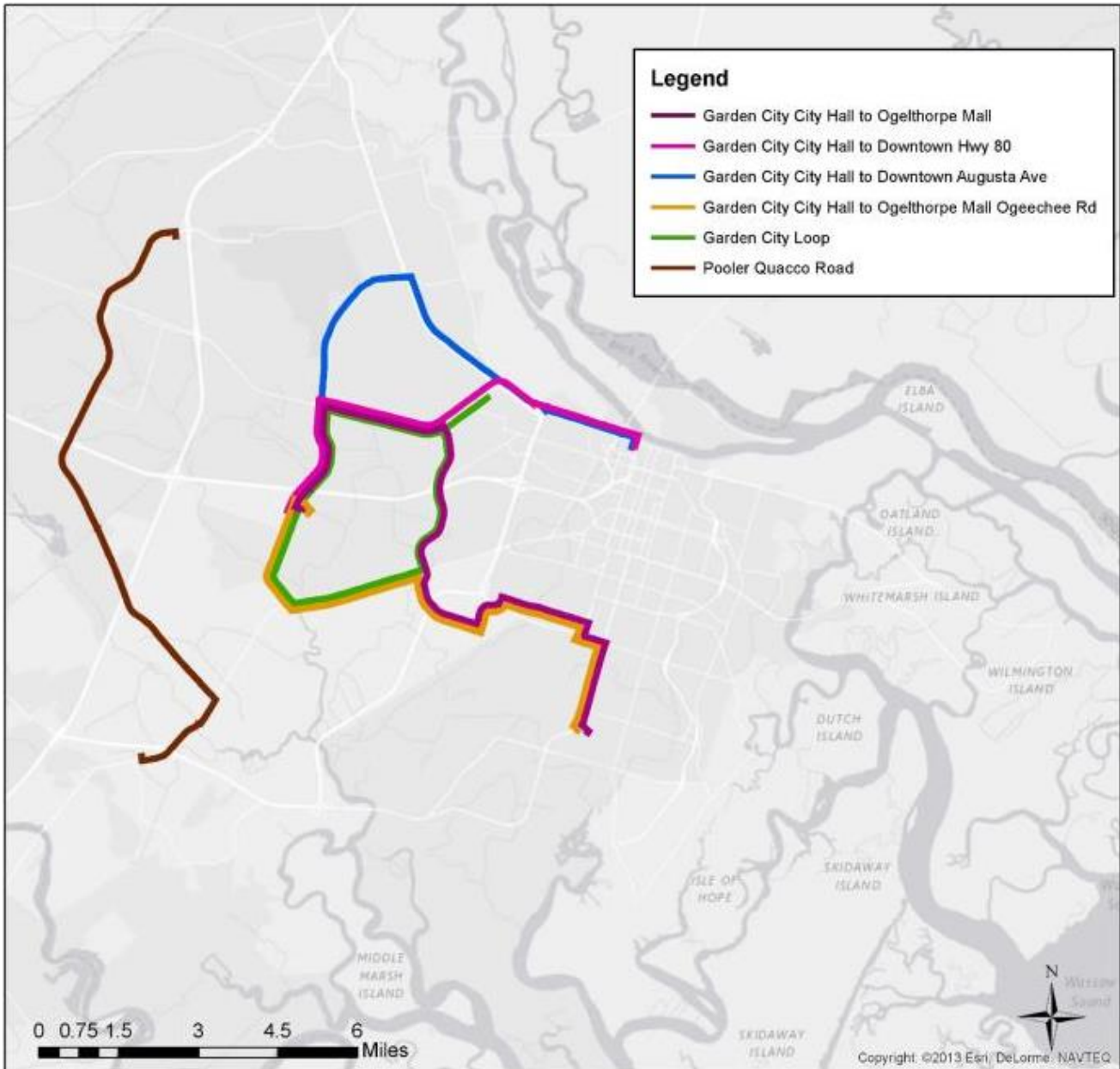


Figure 62. Route Configuration for Service Alternatives

Relationship of Alternative Routes to the Existing CAT Network

Figure 63 below displays the alternative routes with the existing CAT network in gray. As designed, the Brown Route would connect with CAT Routes 6 and 17 at the WalMart on Ogeechee Road. The Brown Route would also connect to the Route 3 at the new Outlet Mall. The Blue and Pink routes would connect with the regional network at the Downtown Intermodal Center. The Purple and the Orange Routes would connect at Ogelthorpe Mall.

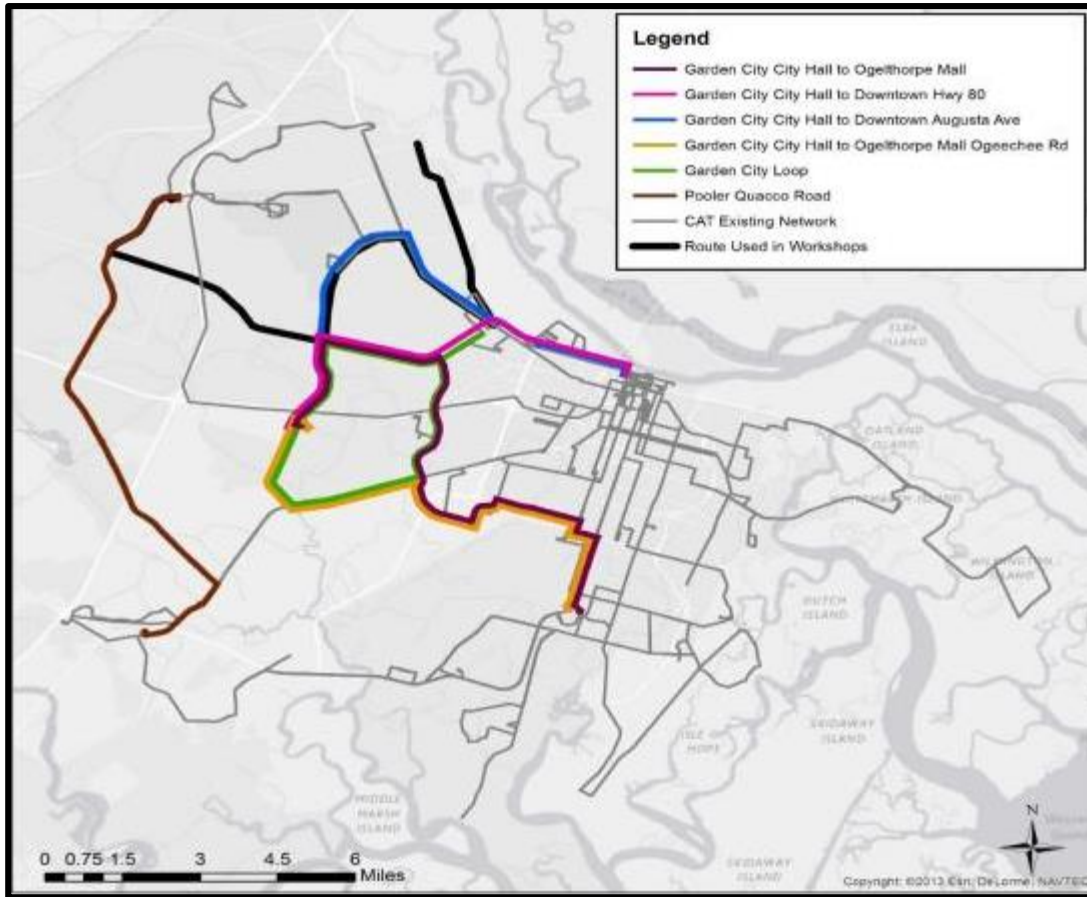


Figure 63. Relationship of Alternative Routes to the Existing CAT Route

T-BEST Model Runs

Now that the Florida Department of Transportation (FDOT) is no longer funding enhancements to T-BEST, interestingly there are several systems around the country, including Los Angeles, Nashville, Anchorage, and Salt Lake City that have been continuing to fund further enhancements to the model. The model run done for West Chatham is about 5 versions better than the version of T-BEST used in the Transit Development Plan. The parameters for this model run are as follows:

- The base year validation is 2015 which is updated from the previous validation of 2012;
- The scenario forecast year for ridership of the alternative routes is 2020;
- There is a 2 percent socio-economic growth rate applied to demographic factors;
- Each alternative route has a route spacing of ¼ mile;
- The assigned speed is for buses to operate at 14 mph;
- The service span applied to each route is 6:00 a.m. to 11:00 p.m. Monday through Sunday;
- The frequency applied to each route is one bus every 60 minutes;
- Model runs were performed for each route independently;
- The 100X was modified to access the new outlet stores on both inbound and outbound trips; and
- The model run was from the Nashville version which is an enhancement to the Los Angeles version of the model.

The Green Route, which provides internal circulation within most of Garden City, was predicted to be the most successful route at 1,064 daily boardings and a total of 318,568 annual boardings including Saturday and Sunday. The second most projected successful route is the Blue Route which provides service between Garden City City Hall and Downtown Savannah via Highway 307 and Augusta Road, projecting a total of 104,348 annual boardings including Saturday and Sunday. The third most projected successful route is the Brown Route which would provide service from the WalMart up Quacco Road which becomes Pooler Parkway and then serves the new outlet mall, projected to reach 100,492 annual boardings including weekend service. The remaining routes generated less than 65,000 annual boardings including Saturday and Sunday. The Route 100X extension had the modeling phenomenon of projecting greater ridership on Saturday than weekdays. Overall, all six routing configuration have the potential of generating 691,000 million annual trips on CAT. Table 5 below displays the ridership projections for the alternative routes with the calibrated CAT network routes.

WEST CHATHAM MOBILITY STUDY

Table 5. CAT Ridership Projections for Alternative Fixed-Route Services

CAT - Route Scenario Estimation Results								
Route	Weekday			Saturday		Sunday		Total Annual Boardings
	2015	Annual Weekday Boardings		2020	Annual Saturday Boardings	2020	Annual Sunday Boardings	
		2020	Boardings		Boardings		Boardings	
Route 3	639	656	165,312	355	18,460	182	9,464	193,236
Route 3B	409	421	106,092	271	14,092	64	3,328	123,512
Route 4	476	489	123,228	346	17,992		0	141,220
Route 5D	480	501	126,252	468	24,336	330	17,160	167,748
Route 6	370	379	95,508	267	13,884	58	3,016	112,408
Route 8	68	72	18,144	72	3,744		0	21,888
Route 10	574	587	147,924	410	21,320	164	8,528	177,772
Route 11	77	80	20,160		0		0	20,160
Route 12	529	543	136,836	347	18,044	137	7,124	162,004
Route 14	2,345	2,422	610,344	1,895	98,540	832	43,264	752,148
Route 17	610	623	156,996	516	26,832	204	10,608	194,436
Route 20	29	30	7,560		0		0	7,560
Route 25	1,036	1,062	267,624	642	33,384	331	17,212	318,220
Route 27	758	777	195,804	476	24,752	336	17,472	238,028
Route 28	673	691	174,132	444	23,088		0	197,220
Route 29	284	291	73,332	201	10,452	99	5,148	88,932
Route 31	787	807	203,364	565	29,380	227	11,804	244,548
Route 75	23	24	6,048	31	1,612		0	7,660
Route 80	1,715	1,753	441,756		0		0	441,756
Route 100X	31	52	13,104	70	3,640	43	2,236	18,980
Route 114X	6	6	1,512		0		0	1,512
Route 170X	138	144	36,288	146	7,592	143	7,436	51,316
Total Without New Routes	12,057	12,410	3,127,320	7,522	391,144	3,150	163,800	3,682,264
Blue Route	NA	327	82,404	220	11,440	202	10,504	104,348
Brown Route	NA	315	79,380	202	10,504	204	10,608	100,492
Green Route	NA	1,064	268,128	440	22,880	530	27,560	318,568
Orange Route	NA	177	44,604	218	11,336	112	5,824	61,764
Pink Route	NA	117	29,484	147	7,644	73	3,796	40,924
Purple Route	NA	188	47,376	222	11,544	115	5,980	64,900
New routes Total		2,188	551,376	1,449	75,348	1,236	64,272	690,996
Grand Total - All		14,598	3,678,696	8,971	466,492	4,386	228,072	4,373,260

Operational Profile

Table 6 below displays the operational profile for the alternative routes. Pattern Miles refers to the number of miles required to complete a round trip. Route Arrivals refers to the number of times in a day that a bus will arrive at a bus stop. Revenue Service Trips refers to the number of round trips that would occur each day. Revenue Service Miles refers to the number of miles the bus would travel while in service throughout the service day. Revenue Service hours refer to the number of hours a bus would travel in a day while in service. Finally, the Bus Requirement if Service Implemented refers to the number of additional buses needed to operate service based on the operating characteristics.

Table 6. Operational Profile

Route Name	Pattern Miles	Route Arrivals	Revenue Service Trips	Revenue Service Miles	Revenue Service Hours	Bus Requirements if Service Implemented
Route 100X	37	78	26	480.8	12.4	0
Blue Route	22.4	1,564	34	380.7	27.2	2
Brown Route	25.6	1,802	34	435.7	31.1	3
Green Route	14.1	986	17	240.3	17.2	1
Orange Route	23.0	1,598	34	390.2	27.9	2
Pink Route	17.5	1,258	34	298.3	21.3	2
Purple Route	28.2	1,972	34	478.6	34.2	3
Grand Totals	167.8	9,258	213	2,704.6	171.3	13

Demographics from T-BEST

T-BEST demographic slides presented below are organized by the following:

- Employment
- Housing
- Population

T-BEST Employment

Figure 64 below shows that 18,168 persons are employed within ¼ mile of the alternatives, with 38 percent working in commercial employment and 54 percent in service. Only 10 percent of people employed are in the industrial sector. Figure 65 below shows the greatest concentrations of employment are found on the Brown Route (Quacco Road and Pooler Parkway) and along Highway 307 in Garden City. The area surrounding Ogelthorpe Mall also has a high concentration of workers.

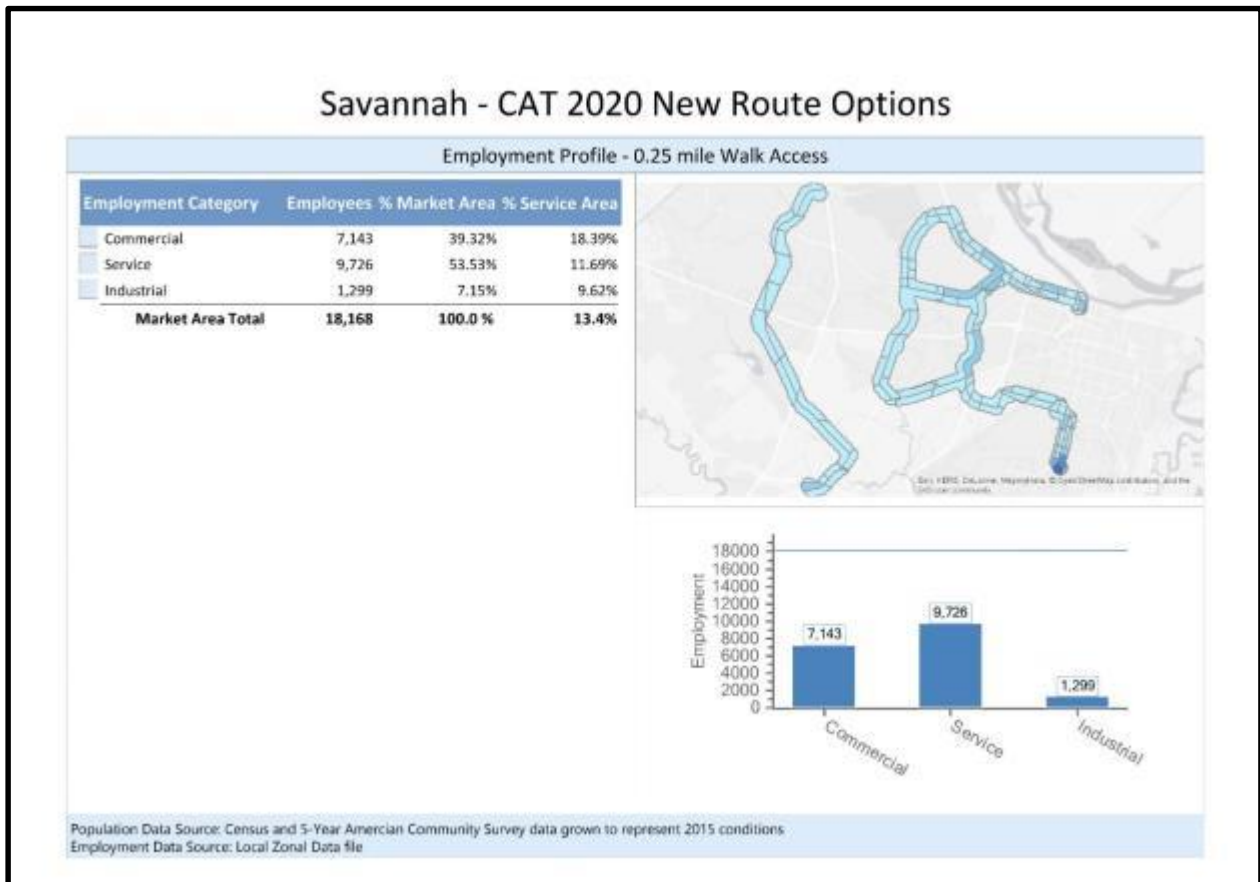


Figure 64. Employment Category

WEST CHATHAM MOBILITY STUDY

Figure 65 below shows that there is an even distribution of jobs between all routes.

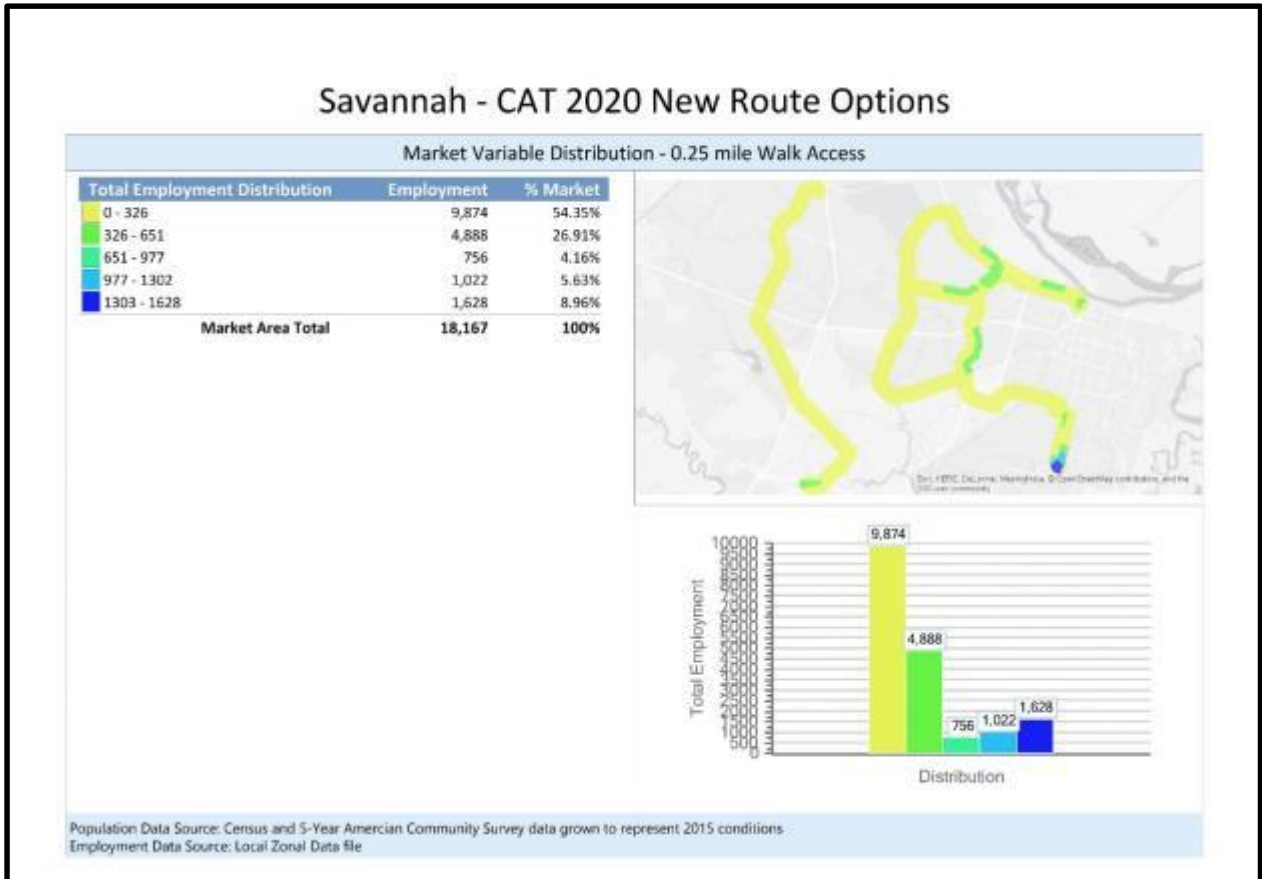


Figure 65. Total Employment Distribution

WEST CHATHAM MOBILITY STUDY

Figure 66 shows an equal distribution of commercial employment among all segments of the alternatives.

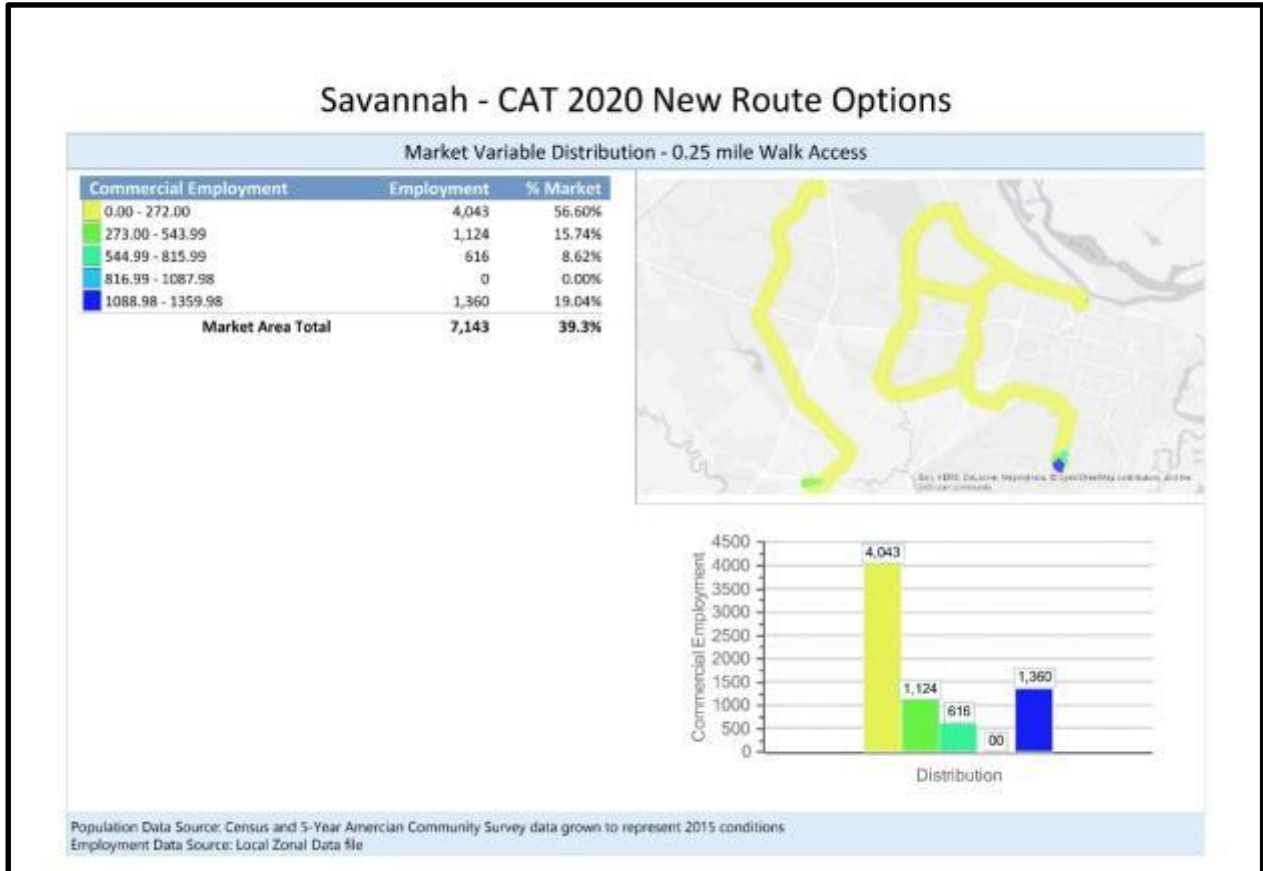


Figure 66. Commercial Employment

WEST CHATHAM MOBILITY STUDY

Figure 67 shows concentrations of service employment in the Ogelthorpe Mall area and along Chatham Parkway.

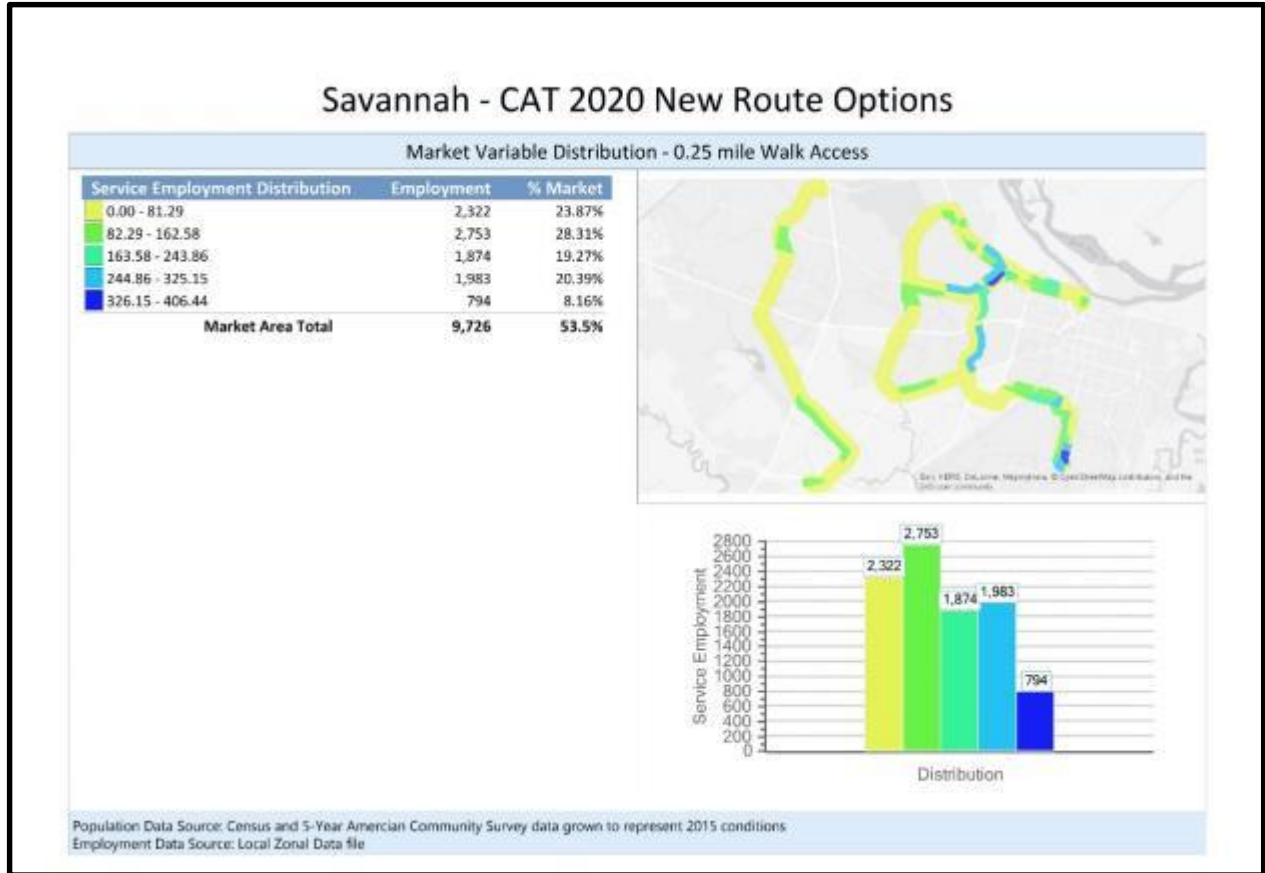


Figure 67. Service Employment Distribution

WEST CHATHAM MOBILITY STUDY

As would be expected, Figure 68 shows the greatest level of industrial employment at the Port and surrounding area.

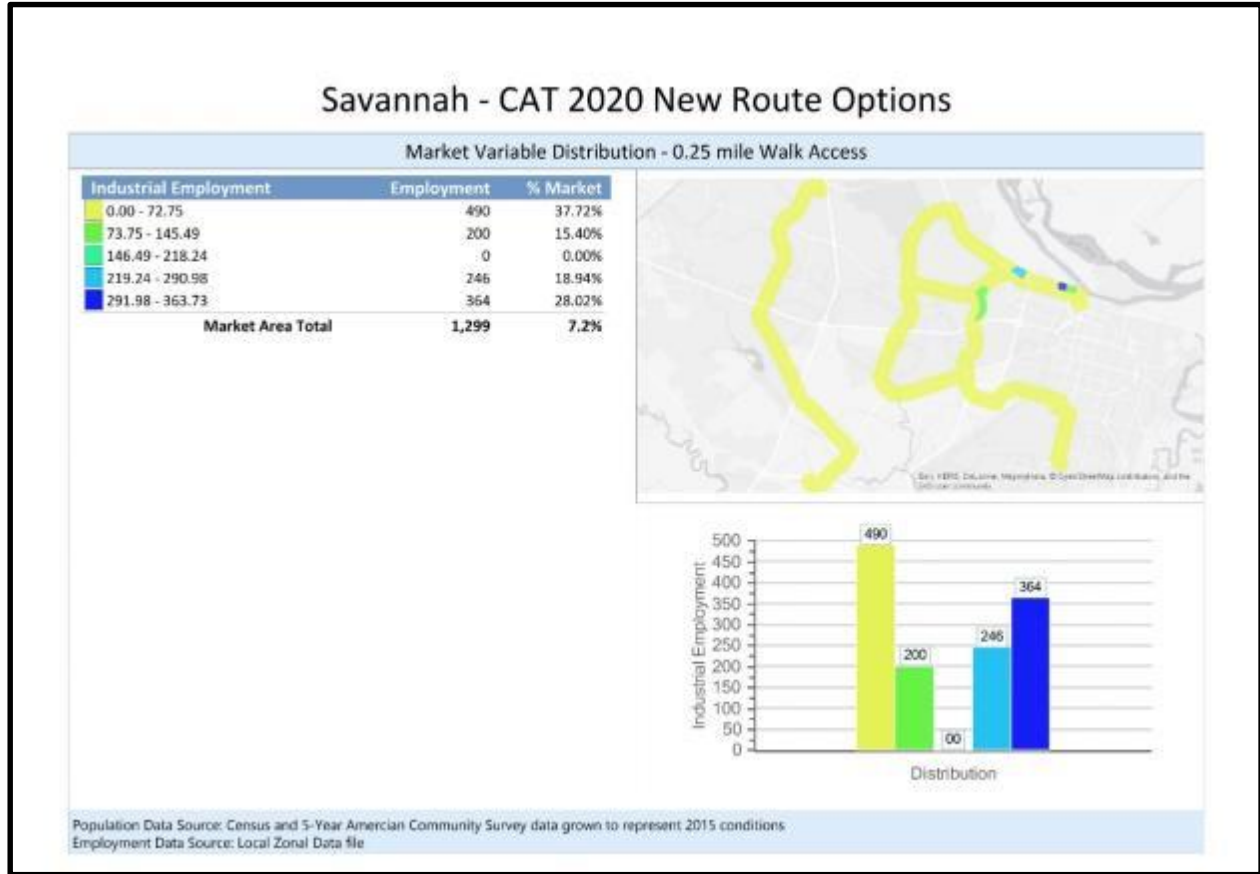


Figure 68. Industrial Employment

WEST CHATHAM MOBILITY STUDY

Figure 69 shows per capita income to be evenly distributed and between \$11,750 and \$23,500.

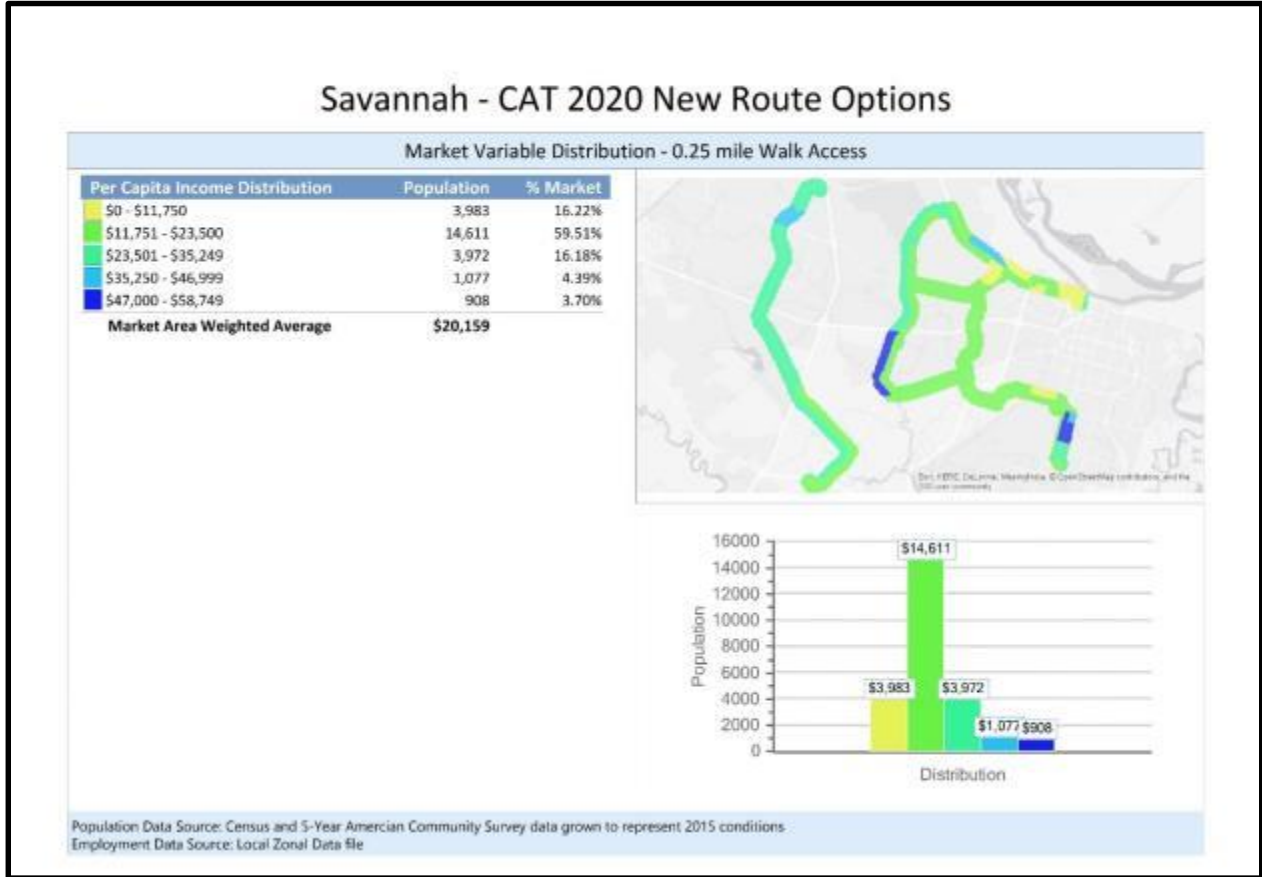


Figure 69. Per Capita Income Distribution

WEST CHATHAM MOBILITY STUDY

Figure 70 below shows concentrations of higher median incomes along Quacco Road and Highway 307 in Garden City. Most median incomes range from \$40,600 to \$60,700.

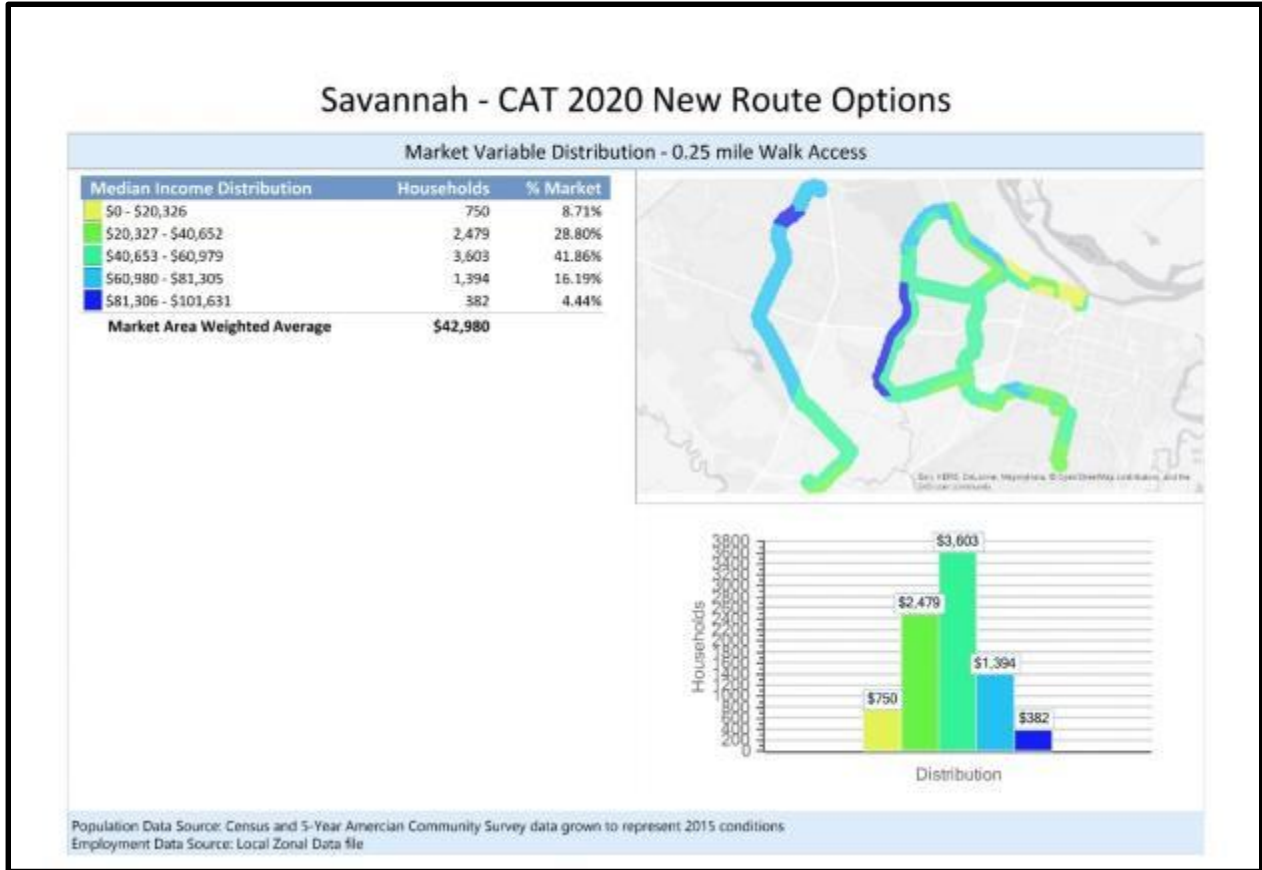


Figure 70. Median Income Distribution

T-Best Household Data

Figure 71 shows that there is an equal distribution of multi-family dwelling units across all alternatives.

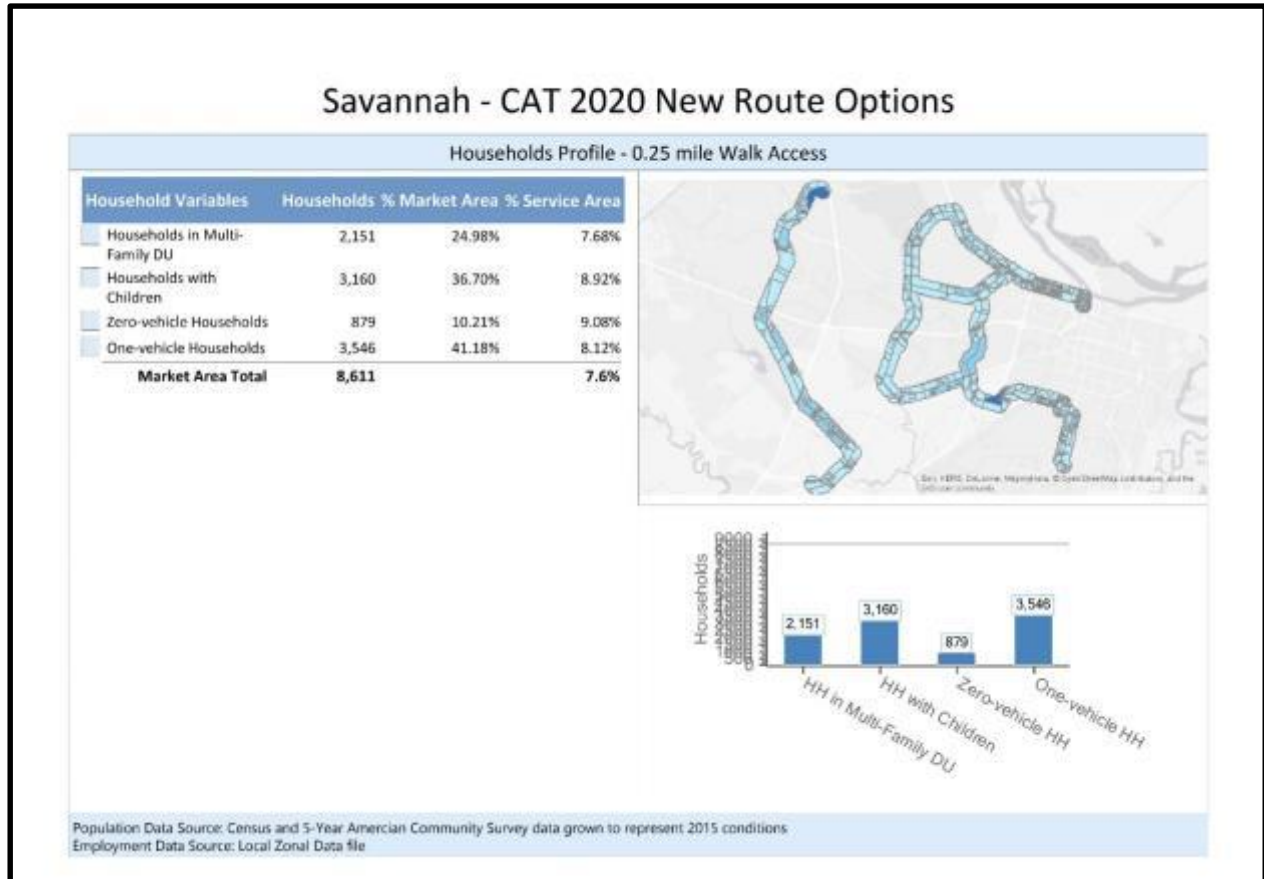


Figure 71. Household Variables

WEST CHATHAM MOBILITY STUDY

Figure 72 displays the comparison of average income, per capita income and median income.

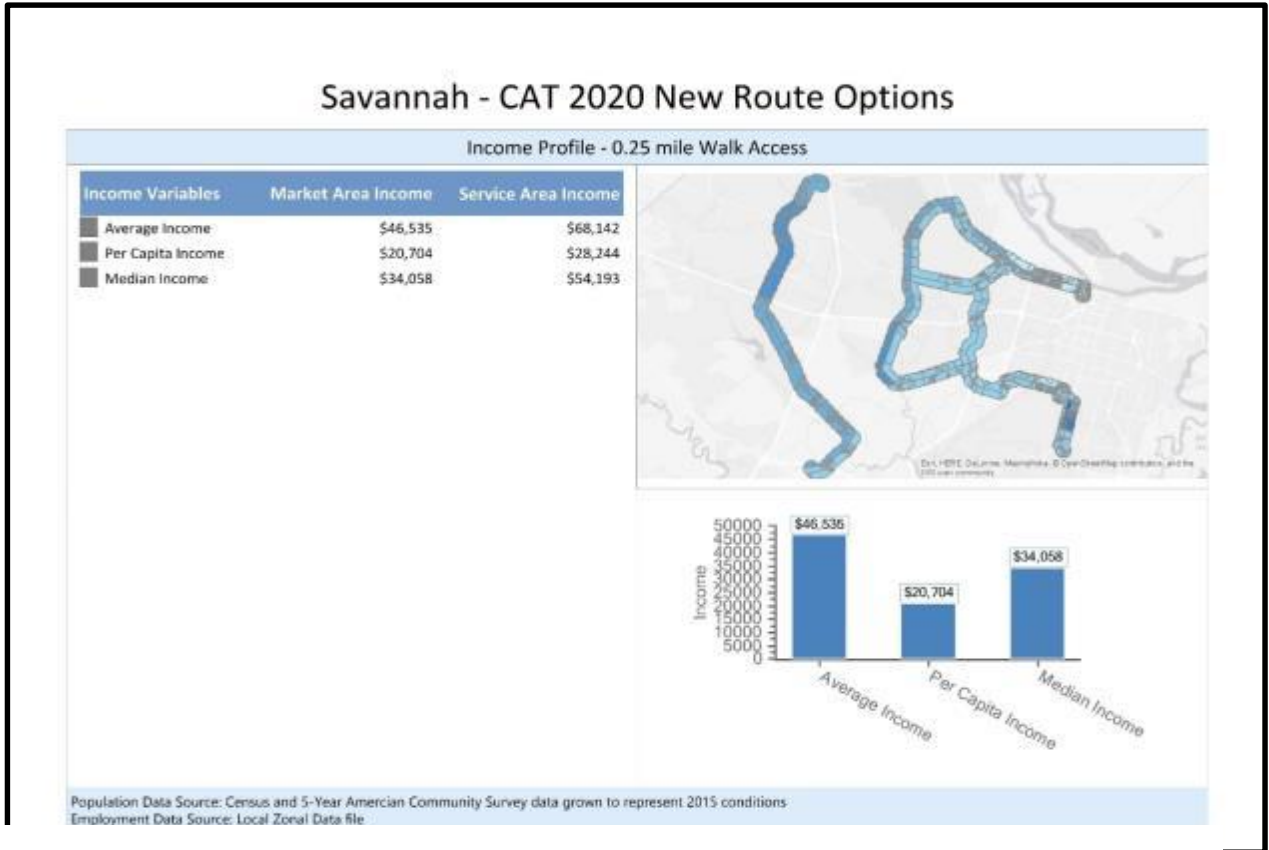


Figure 72. Income Variables

WEST CHATHAM MOBILITY STUDY

Figure 73 displays the distribution of total households with the greatest concentrations on Quacco Road, Pooler Parkway, and Chatham Parkway.

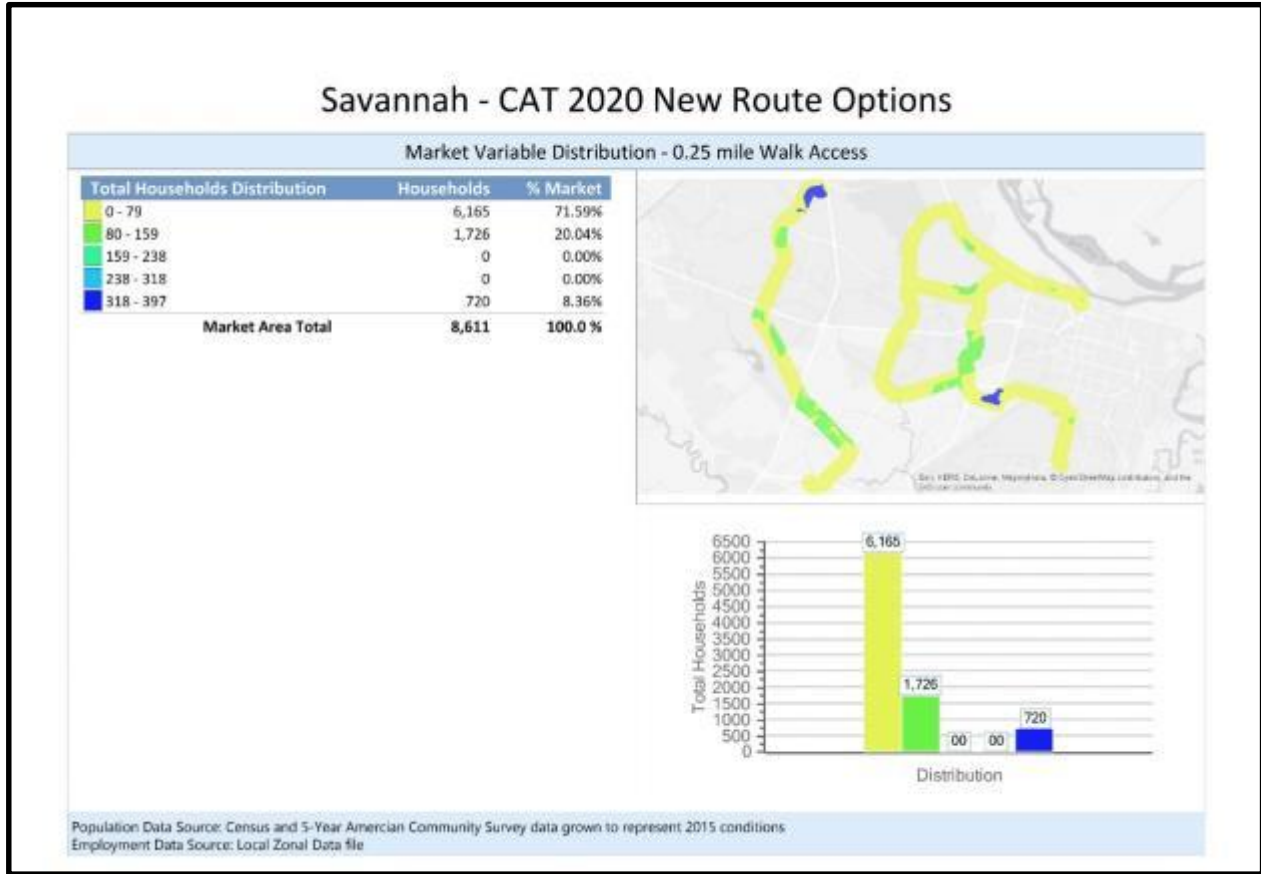


Figure 73. Total Households Distribution

Figure 74 displays the percentage of households in multi-family dwelling units which are evenly distributed among all alternatives.

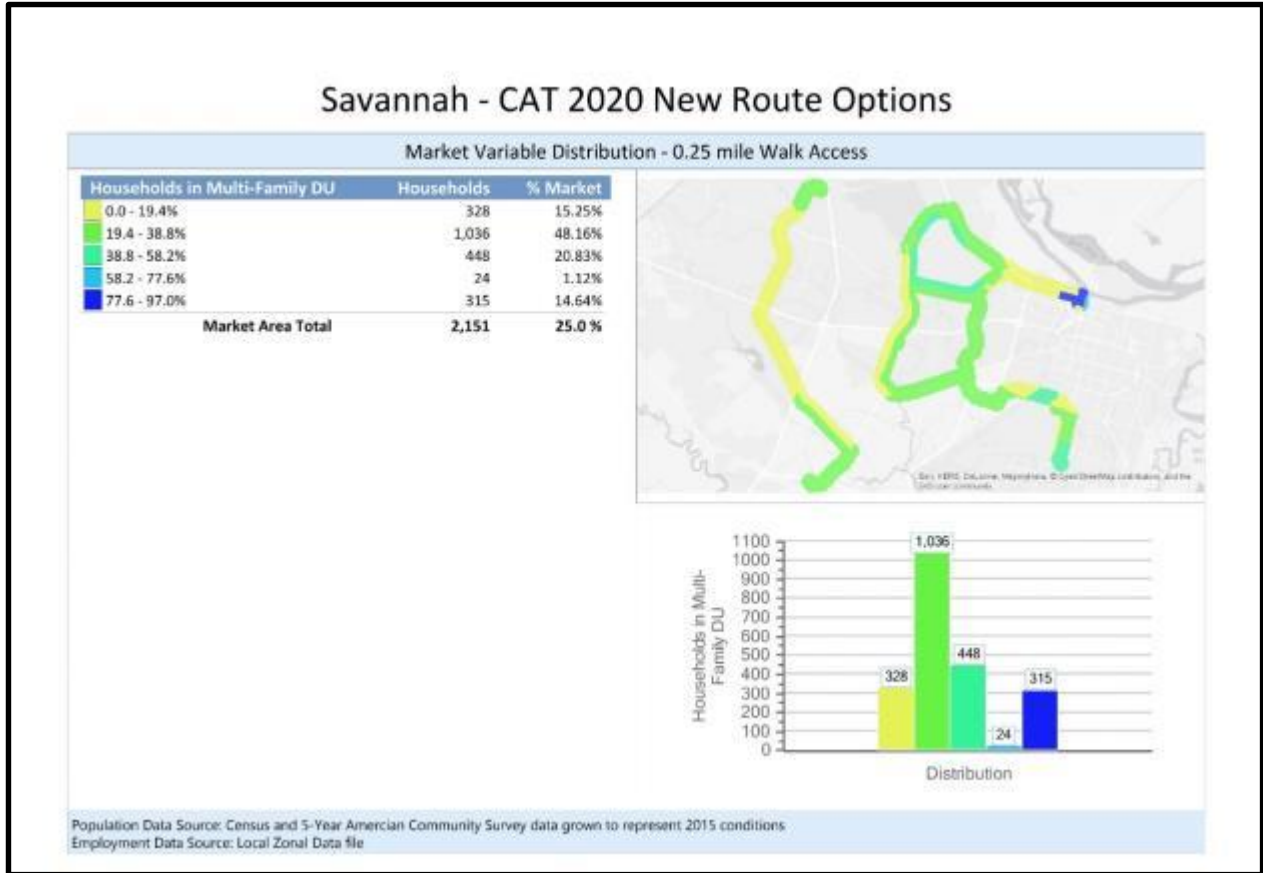


Figure 74. Households in Multi-Family Dwelling Units

WEST CHATHAM MOBILITY STUDY

Figure 75 displays the distribution of households with children, which averages between 40 percent and 60 percent across all alternatives.

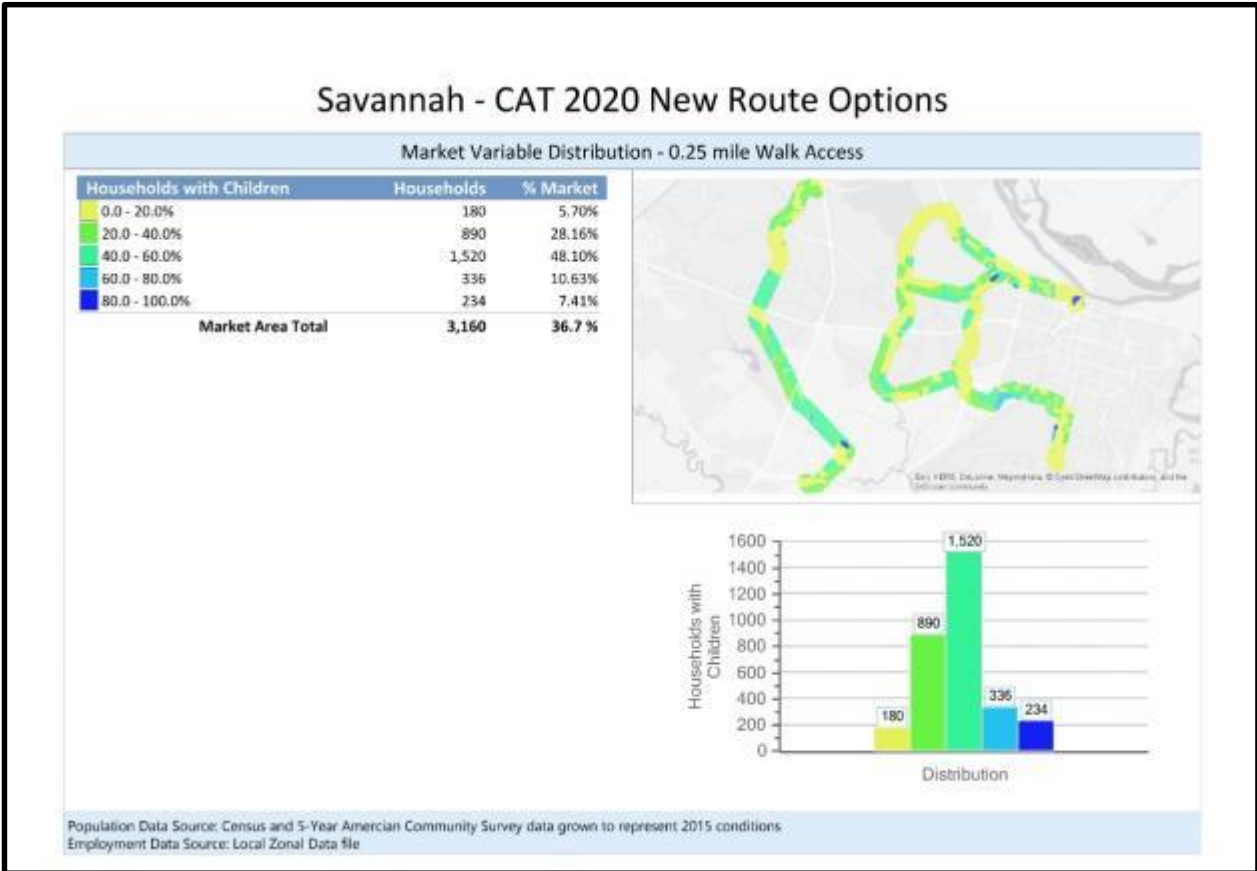


Figure 75. Households with Children

Figure 76 shows the percentage of zero vehicle households and that there is an equal distribution of between 0 percent and 15 percent of households across all alternatives.

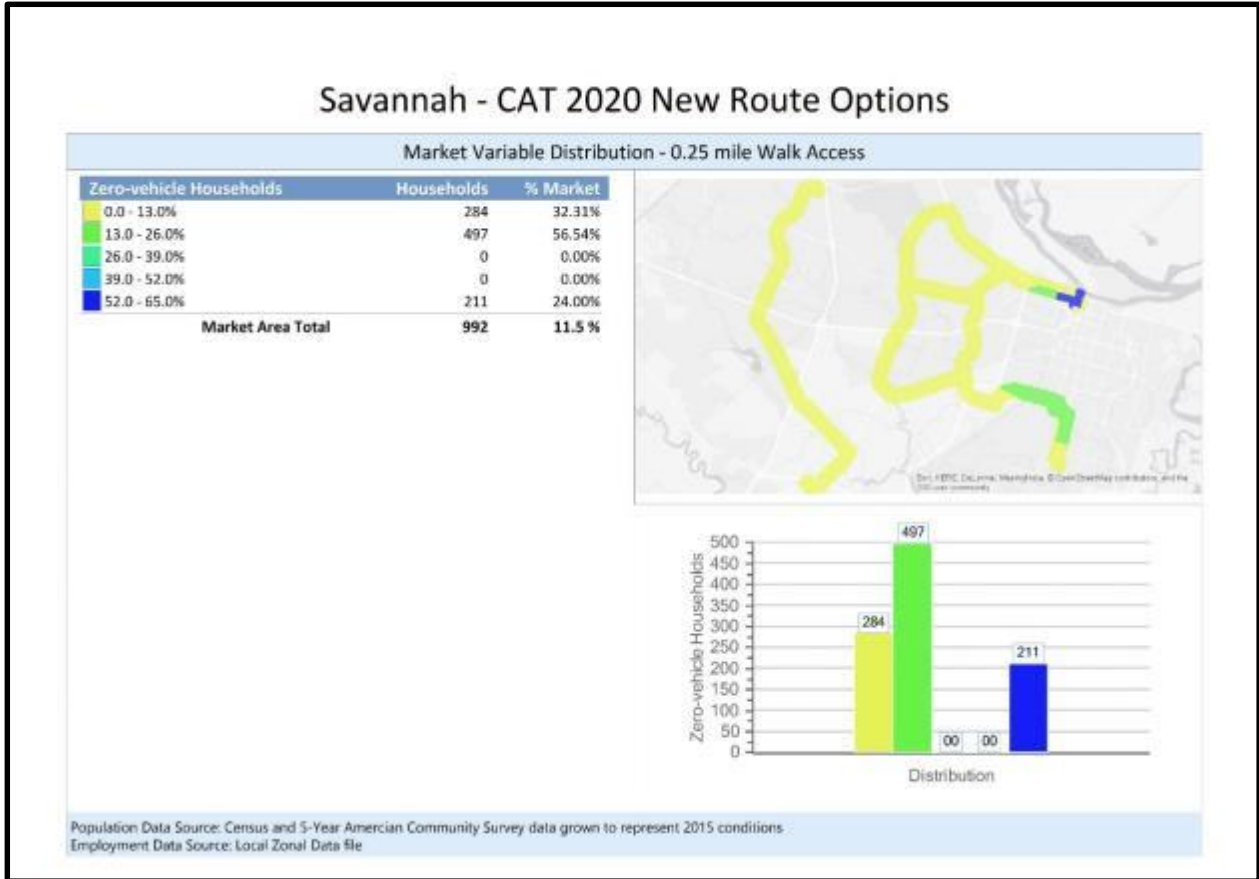


Figure 76. Zero-Vehicle Households

WEST CHATHAM MOBILITY STUDY

Figure 77 below shows the percentage of households with one vehicle. Between 24 percent and 35 percent one vehicle households are the most prevalent across the alternatives.

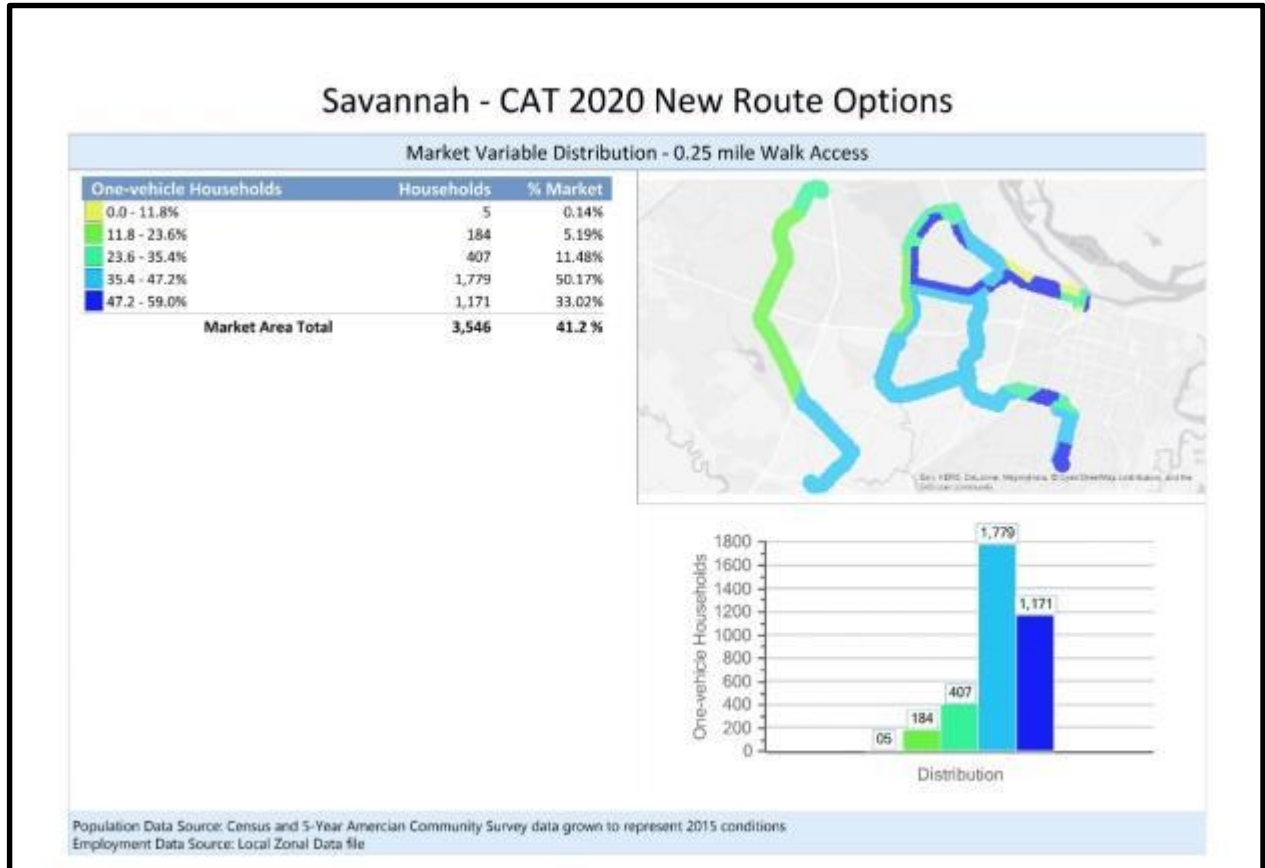


Figure 77. One-Vehicle Households

WEST CHATHAM MOBILITY STUDY

Figure 78 below displays the average income distribution with the most prevalent range of between \$29,800 and \$58,600.

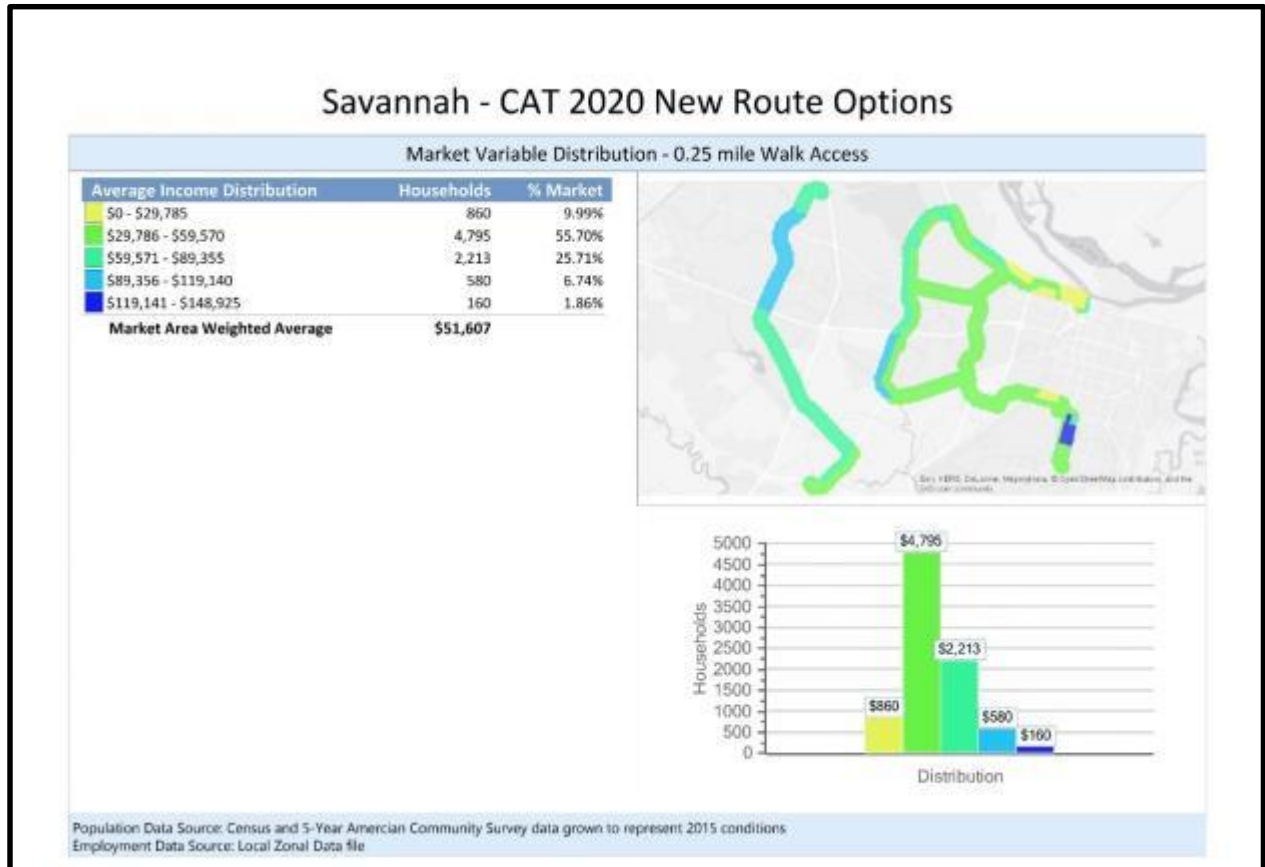


Figure 78. Average Income Distribution

T-BEST Population Data

Figure 79 below shows a series of population variables wherein the black population is 12 percent across the alternatives, 10 percent are hispanic and 13 percent live below the poverty level.

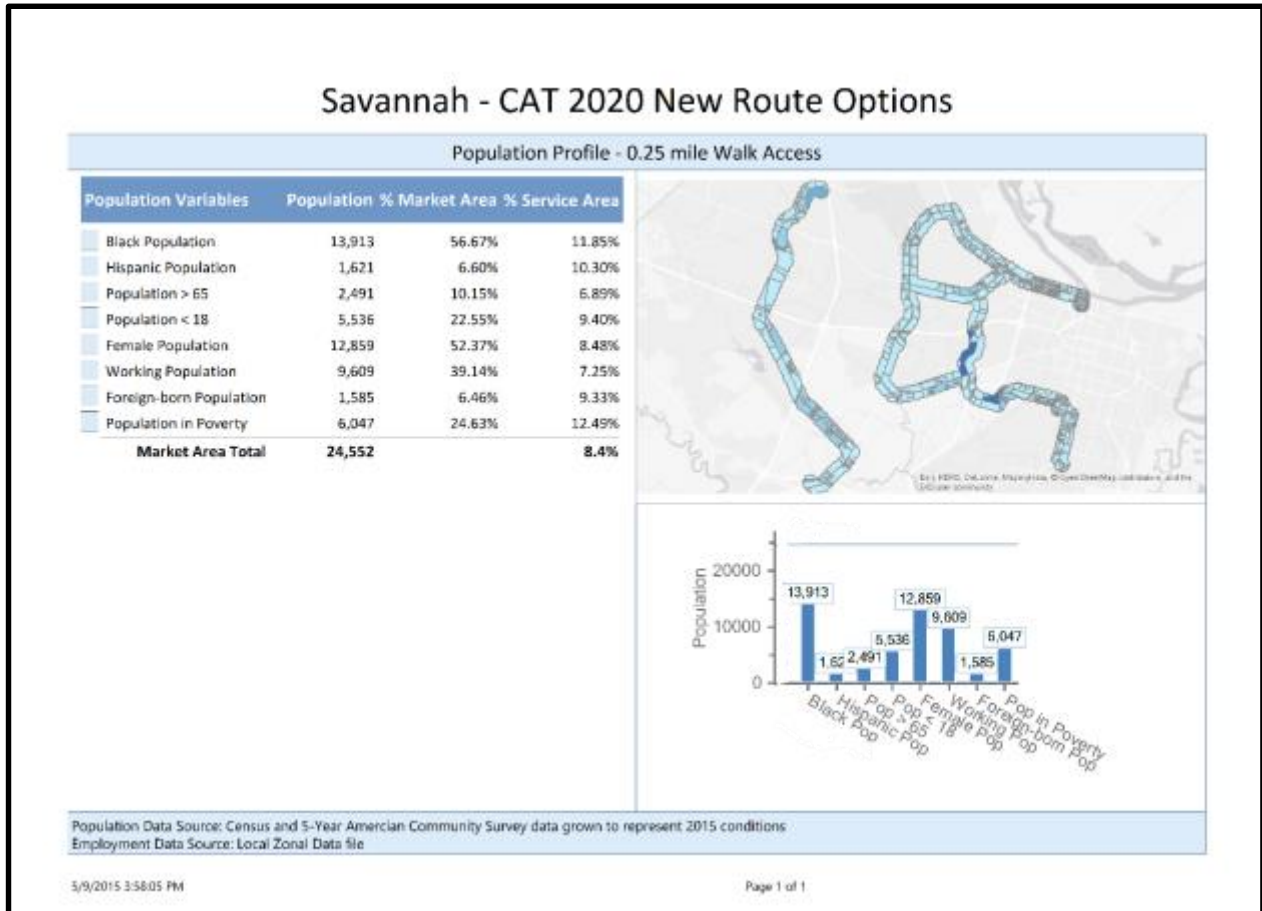


Figure 79. Savannah – Population Variables

Figure 80 shows the distribution of the total population with 69 percent having 0 to 215 persons within ¼ mile of the alternatives.

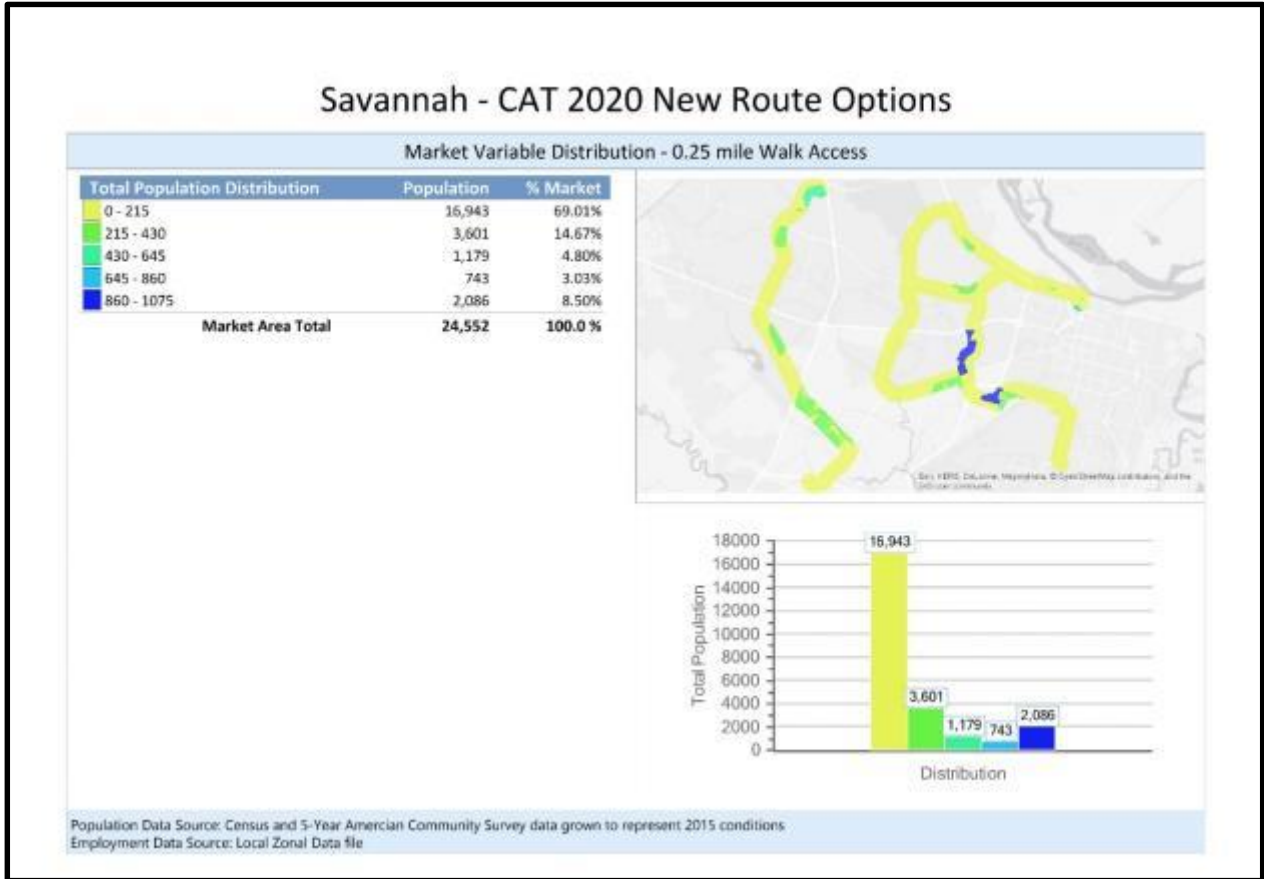


Figure 80. Total Population Distribution

WEST CHATHAM MOBILITY STUDY

Figure 81 shows an equal distribution of minority population across all alternatives.

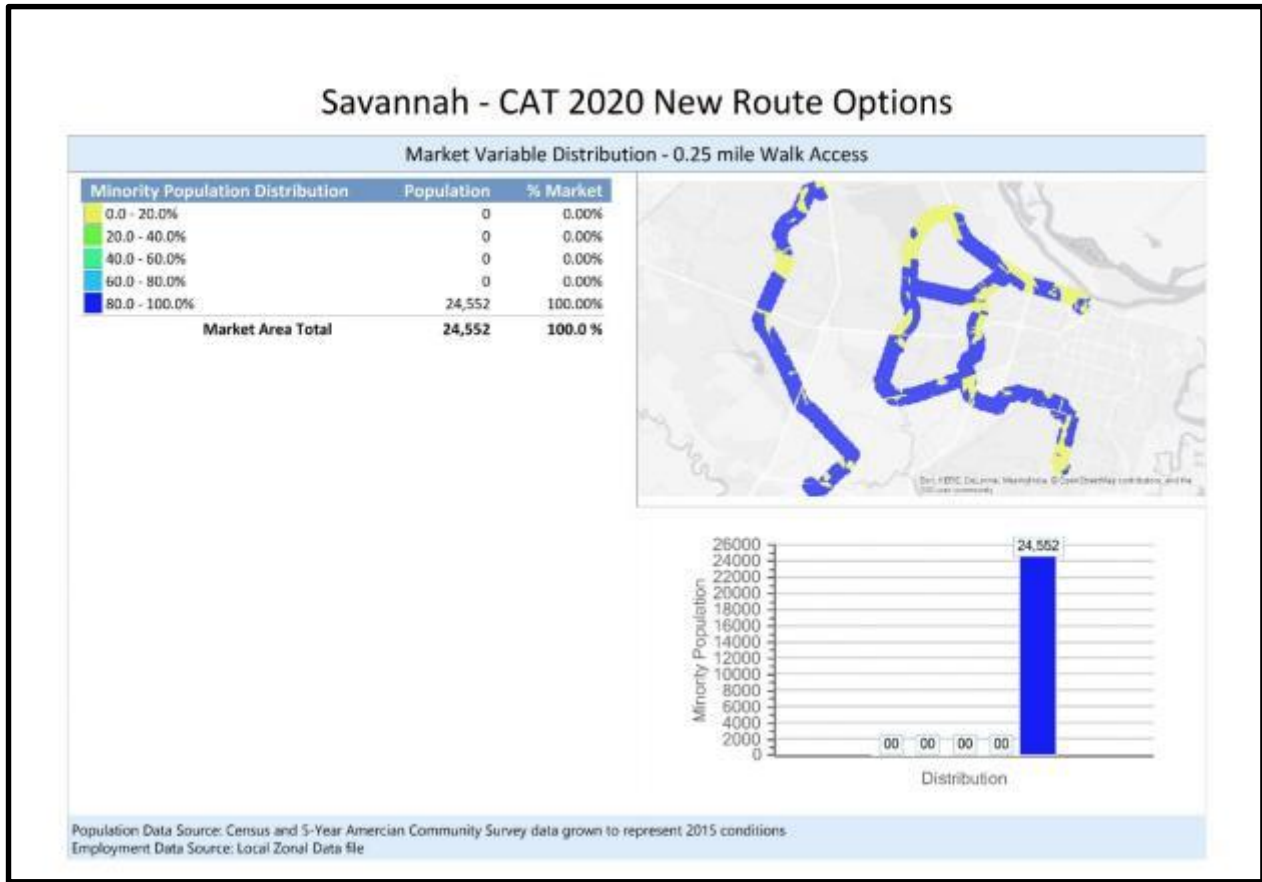


Figure 81. Minority Population Distribution

Figure 82 below displays the distribution of the lack population with greater concentrations in Savannah and Garden City and lower concentrations along Quacco Road and Pooler Parkway.

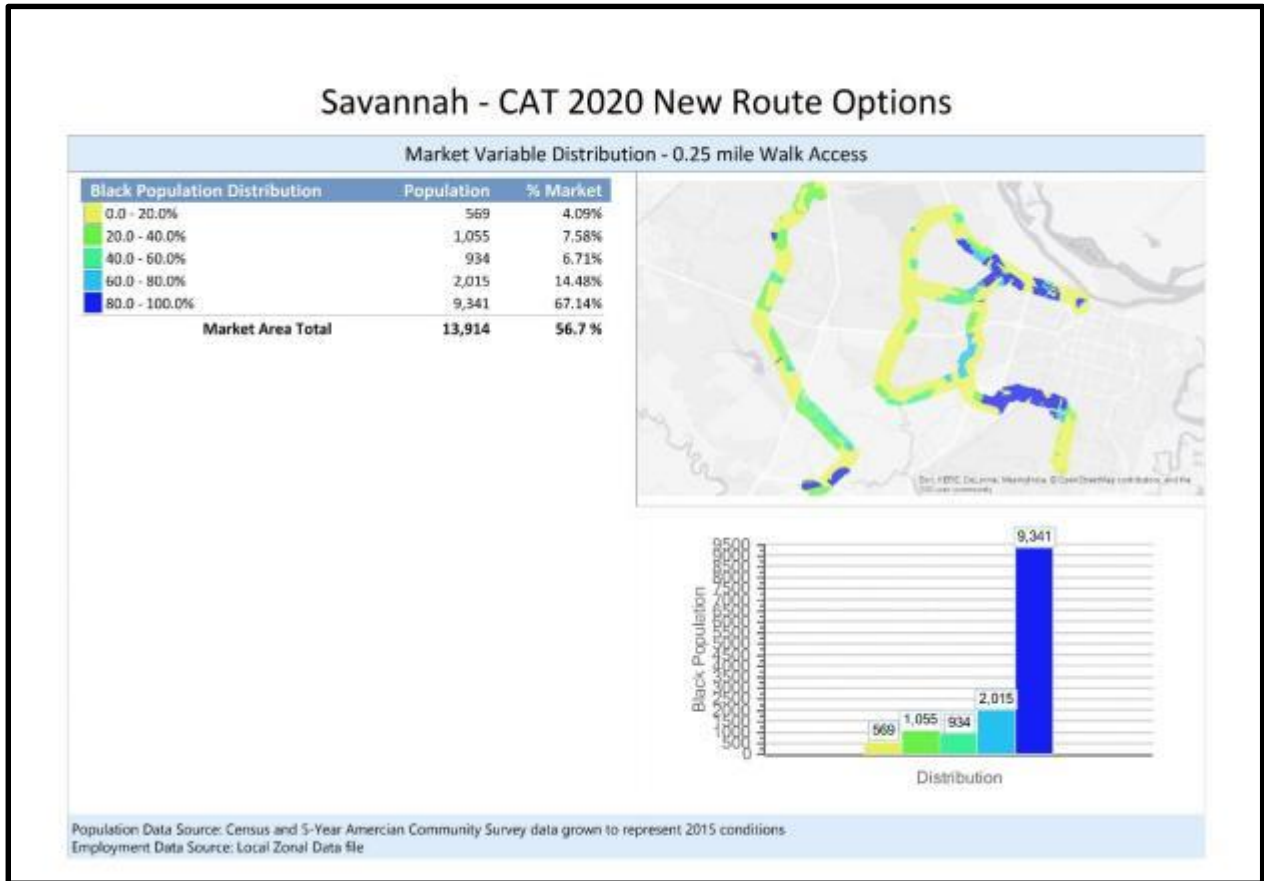


Figure 82. Black Population Distribution

WEST CHATHAM MOBILITY STUDY

Figure 83 shows an equal distribution of the hispanic population, between 0 percent and 20 percent across all alternatives.

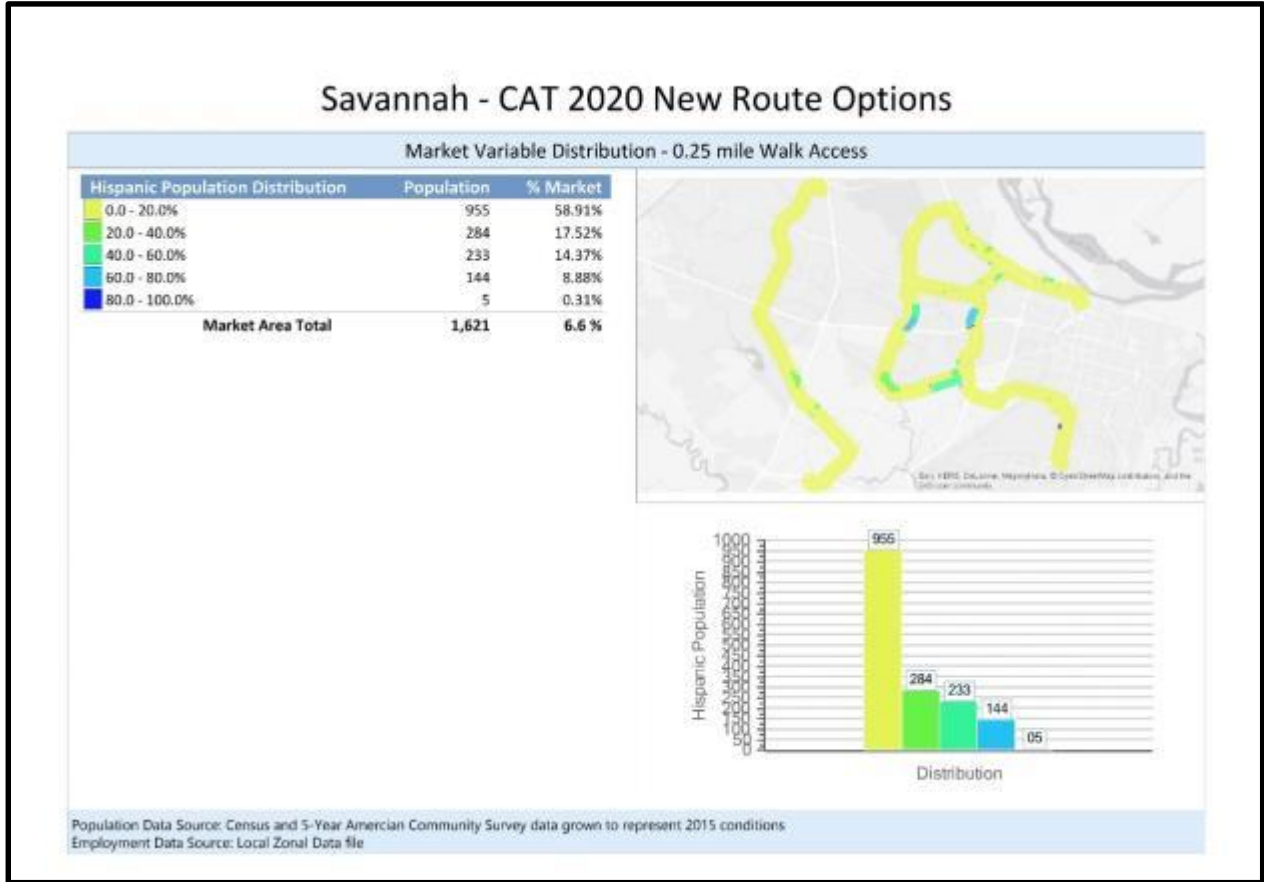


Figure 83. Hispanic Population Distribution

Figure 84 displays the distribution of persons over 65 with an equal distribution of 0 percent and 20 percent across all alternatives.

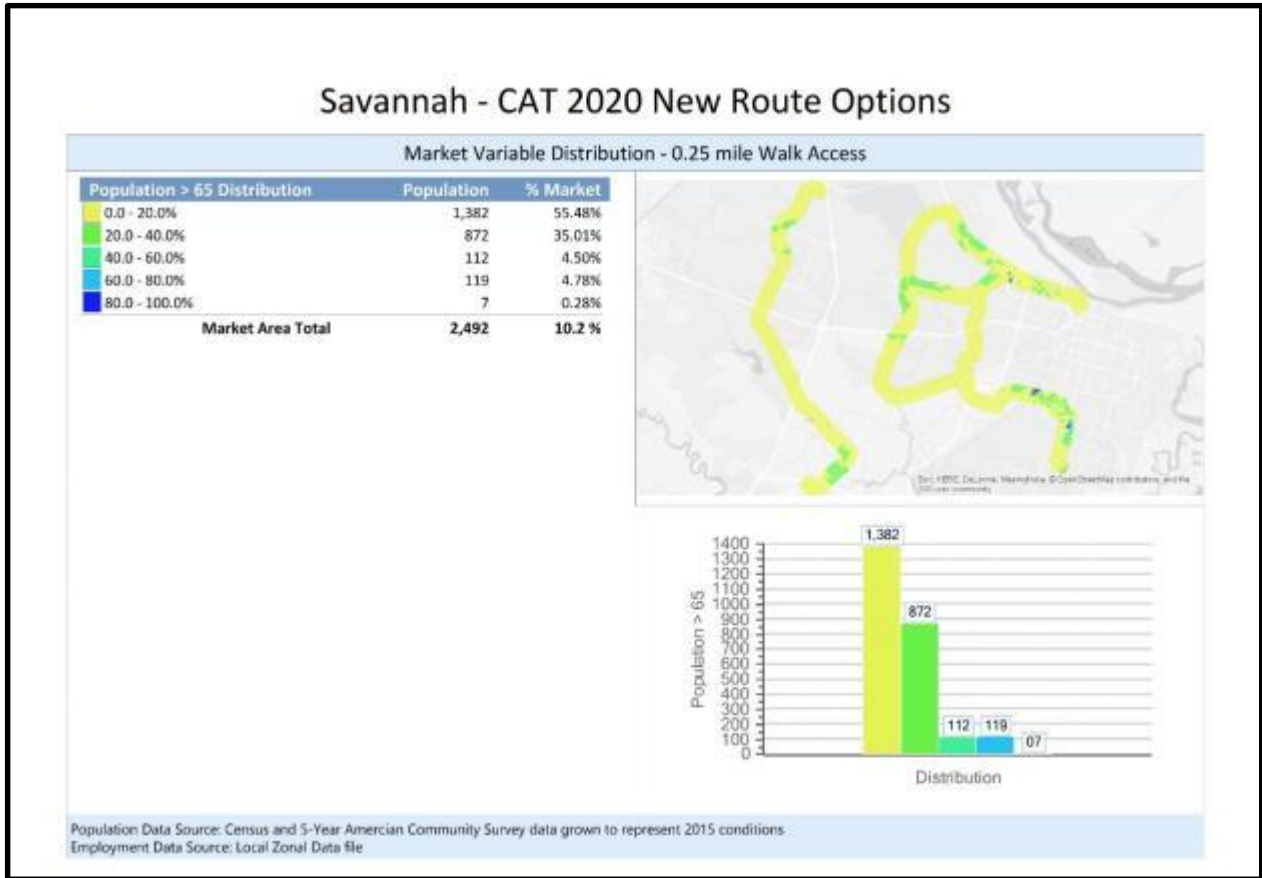


Figure 84. Population >65 Distribution

WEST CHATHAM MOBILITY STUDY

Figure 85 shows the distribution of people under the age of 18 with between 15 percent and 45 percent across all alternatives.

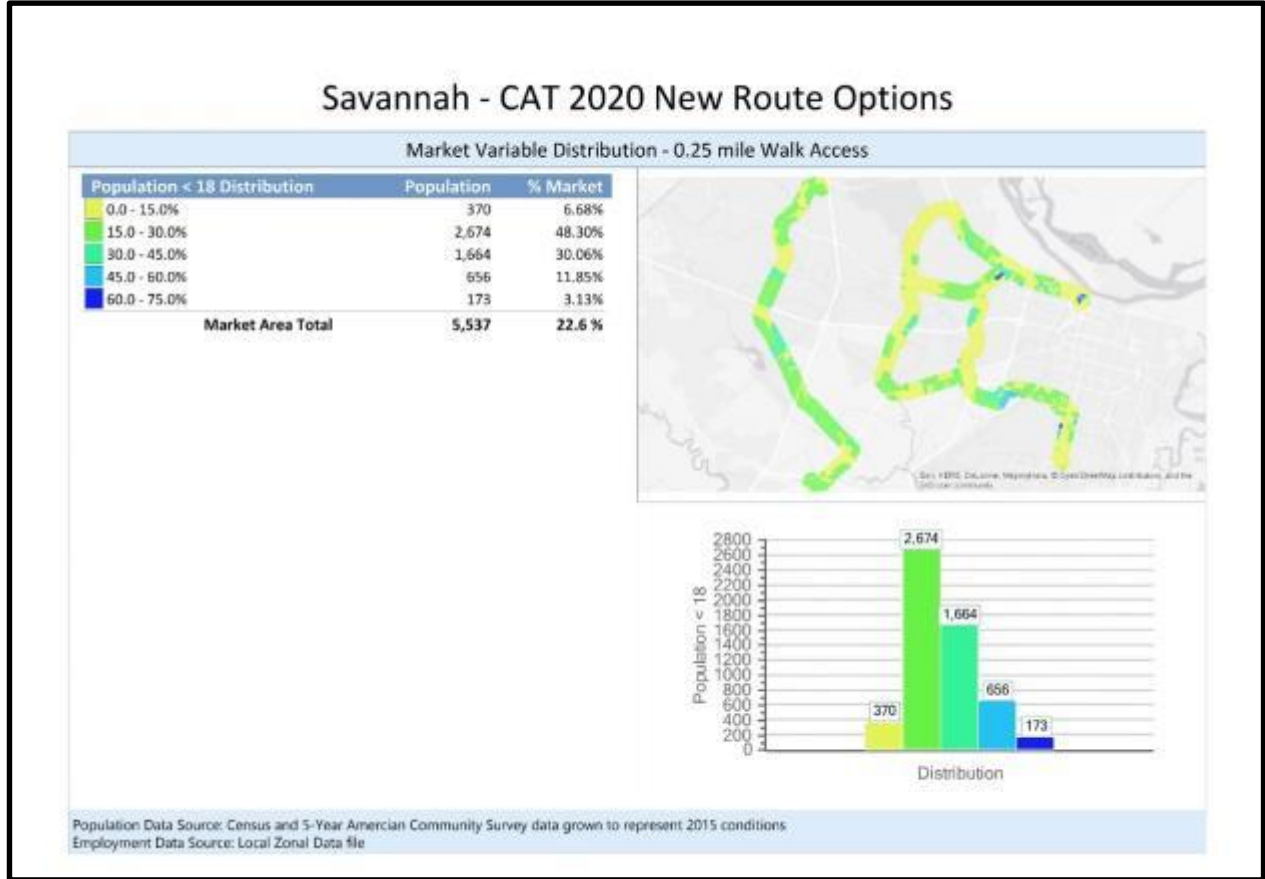


Figure 85. Population <18 Distribution

Figure 86 displays the female population with between 40 percent and 60 percent equally distributed across all alternatives.

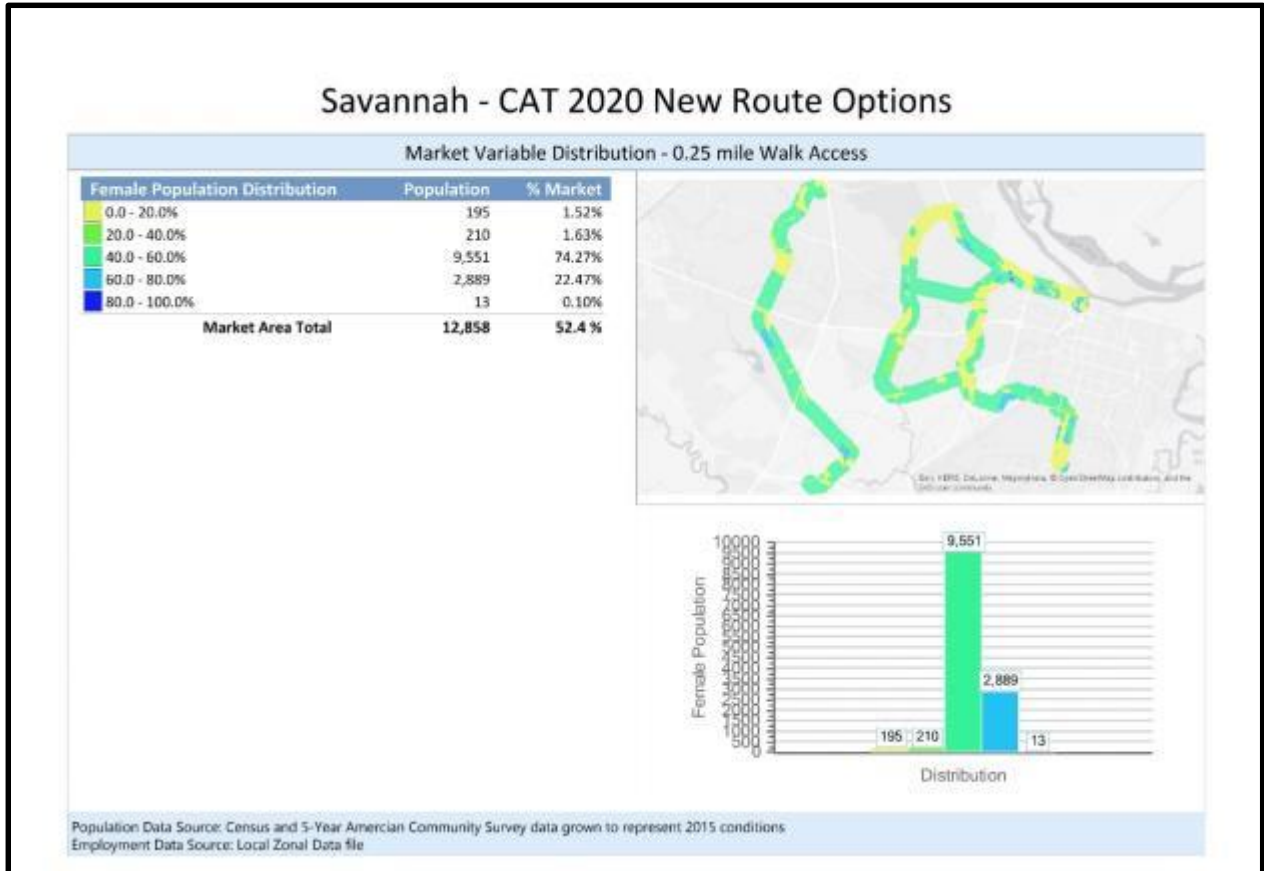


Figure 86. Female Population Distribution

WEST CHATHAM MOBILITY STUDY

Figure 87 displays the population living below the poverty line with between 17 percent and 34 percent across the alternatives with greater concentrations in Garden City and Savannah.

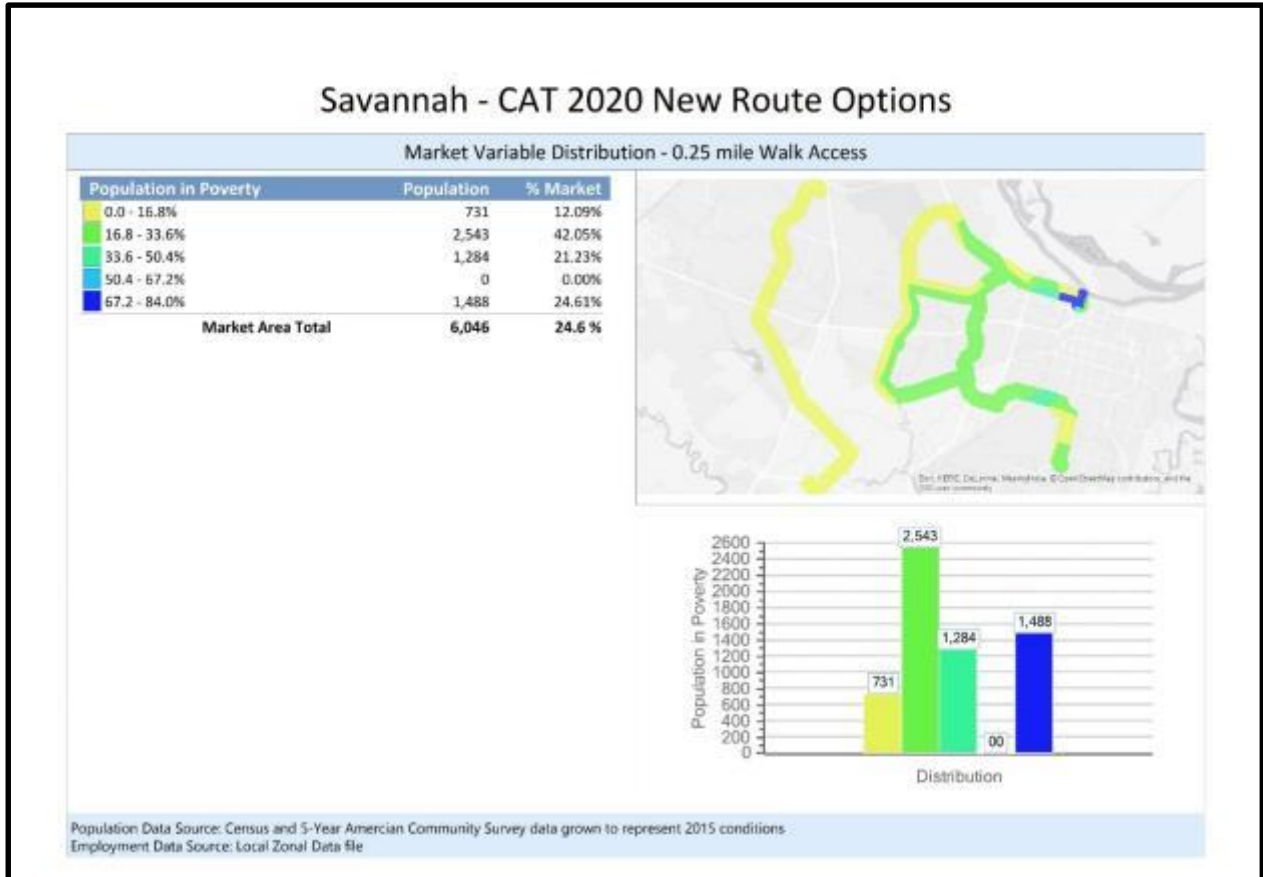


Figure 87. Population in Poverty

Figure 88 displays very low concentrations of the foreign-born population.

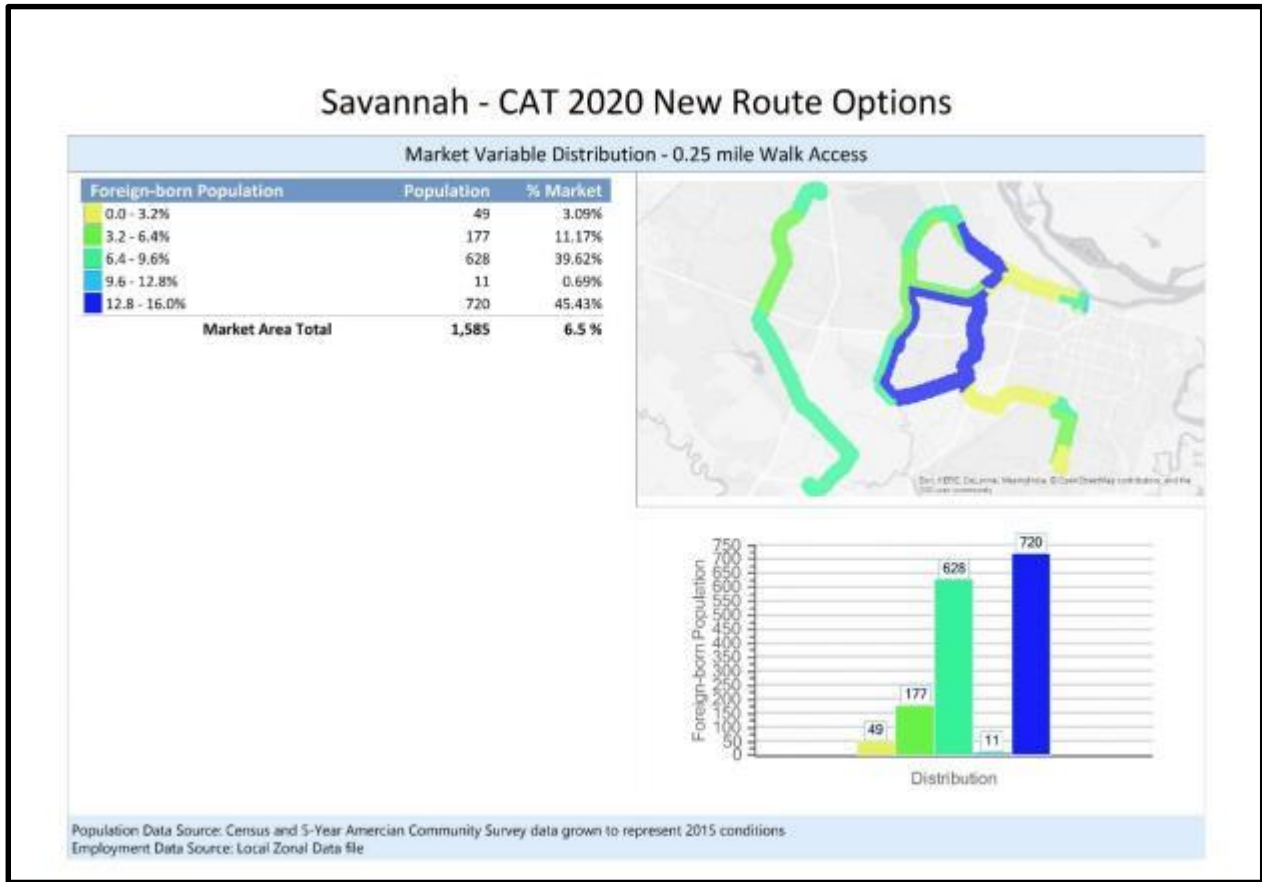


Figure 88. Foreign-Born Population

Final Selection of Recommended Services

Assessment of Transit Needs in West Chatham County

The charge that CAT gave CUTR in conducting this study was to examine the West Chatham Activity Center in terms of the overall transit network, to discover the demand for service, to identify gaps in service in the area, and to examine the issues facing residents who are outside the current District and need to access transit services. In conjunction with that charge, CUTR and CAT hosted two workshops in Pooler and Garden City to establish outreach and garner issues, perceptions, and input from West Chatham residents. The following is a synthesis of all of the activities that took place throughout the course of the study.

The West Chatham Activity Center was always a major center of activity when it consisted of the Port of Savannah-Garden City Terminal, the Savannah/Hilton Head International Airport, a distribution center, and a major employer. However, the pressures on the activity center that came from suburban residential, suburban commercial and a major new shopping mall have complicated, and continue to complicate, the mobility needs of this now burgeoning activity center. The fact that the jurisdictions of West Chatham have never been a member of the Authority has hampered CAT because a transit authority is obligated to be responsive to the jurisdictions within the District. As an example, in the past, Route 3 traveled along Augusta Road but there were no bus stops due to Garden City's lack of participation in the District. The matter was eventually resolved by placing two bus stops on the corridor and then assessing the Ad Valorem Tax on parcels that are within a certain radius of those stops.

However, we have seen from the service scenarios that two stops on Augusta Road never addressed the **need** for service within Garden City. Demographic data revealed that Garden City has a significant number of residents who are living below the poverty line, have zero vehicles in the household, and have low-income households. The **actual need** for service in Garden City was revealed in the T-BEST results of the alternatives by showing that the Green Route, which would operate mostly within the City limits of Garden City, will generate upwards of 1,000 boardings per day and over 300,000 boardings annually. The Blue Route serving Garden City City Hall and Downtown Savannah would generate an additional 100,000 boardings annually. During the workshop, it was noted that many residents have to walk long distances in order to access a bus stop. Thus, of all of the jurisdictions within West Chatham County, and for all of the service types that were discussed in the workshops, fixed-route services remain the most attractive and productive in Garden City.

Some Garden City officials were open to the notion of expanded services because they recognize their residents need and use CAT currently. A strategic livability effort by Garden City envisions competing for senior living housing which would need mobility accessibility. In fact, such mobility options would strengthen the city's competitiveness in the grant application process. This is why the refined service alternatives were designed and built

around Garden City City Hall because the senior facility contemplated is adjacent to City Hall.

The overwhelming sentiment among residents who attended the Pooler workshop was that they do not want bus service, they do not wish to pay for bus services, and in fact they would never consider using CAT for any purpose. Whether or not the latter is true remains to be seen as currently Pooler residents do not have a fixed-route transit mobility option by which to make that choice. City officials recognize the future potential need for public transportation but believe the citizens should make that choice when they are ready to do so. The Brown Route Alternative from the WalMart north on Quacco Road to the outlet mall would at least provide a fixed-route bus transit option to Pooler residents and allow access to the entire transit network throughout the County. It should be noted that CAT does provide door-to-door paratransit services to residents of Pooler, Bloomingdale, and Port Wentworth; however, this service is not funded via an Ad Valorem contribution such that paratransit customers in those communities are subsidized by the County overall.

One issue posed at the Pooler workshop is that the cost of anything has to be compared to its benefit, such that if the cost is deemed too high then the benefit is nullified. There is no way that the cost-benefit of transit service in Pooler can be pre-determined. Since there is currently no offering of transit services within the community, the benefits cannot be calculated until such time that transit services are in place and utilization can be measured.

Pooler residents attending the workshop suggested that only users outside Pooler would use the service but Pooler residents would reap no benefit from an economic perspective while at the same time being assessed to pay for it. However, this argument would also hold true for Pooler residents that work in other parts of the County. Commuting data shows unequivocally that 93 percent of Pooler residents commute to another jurisdiction to work and 92 percent of those employed in Pooler come from outside. A broader perspective should be recognized whereas greater accessibility to jobs throughout the County, no matter where one chooses to live, is good for the entire County as a whole as well as from a regional perspective.

Pooler workshop participants contended that buses would worsen traffic congestion in the area. Ultimately, there is no way that transit service can impact traffic in a manner that is greater than the explosive growth in the activity center that has caused that very congestion. Something has to give when it comes to current traffic congestion and the congestion that will ultimately be added by the new outlet mall. Residents at the workshop expressed fears that bus operations on the current road network would only serve to exacerbate the problems they are already facing. This makes Pooler a perfect candidate for commuter services, one of the service types discussed in the workshops. In this scenario, CAT could develop a program whereby residents of the city could use vanpools, discussed below.

The demographic data from Port Wentworth indicates the city has high concentrations of service jobs, households in multi-family dwelling units, minority population, and seniors. In addition, Port Wentworth has a moderate population living in poverty, between 11 percent

and 16 percent of households. Bloomingdale remains too rural for fixed-route services to be feasible. However, mobility needs in Port Wentworth and Bloomingdale could easily be addressed with zonal service, which is a more flexible service that is a hybrid between paratransit and fixed-route service-

Finally, the commute data showed that for every city in the Activity Center, greater than 90 percent of residents work outside the city and greater than 90 percent of workers in the city commute from outside the city. This points to the need for commuter services, which entails a series of products and services to meet the needs of commuters when traditional bus service is not able to meet those needs. For example, a vanpool is generally a group of approximately 7 to 15 commuters who travel to work together in a van driven by a volunteer(s). The van's route and schedule are determined by the vanpool participants. Typically, the volunteer driver travels free of charge (up to a mileage cap) and the passengers share the monthly cost of the van's lease, maintenance, insurance, and fuel expenses.

Across the United States there are some examples of independent vanpool groups organized by individuals using a personally owned vehicle who agree to transport individuals in exchange for a fee designed to cover expenses. The practice of contracting with a private commercial entity and/or a public agency is much more prevalent. In the Atlanta region, for example, there are three primary vanpool operating arrangements:

1. The Georgia Regional Transportation Authority (GRTA) oversees the contract and funding for a 13 county regional vanpool program that is contracted out to two vendors. GRTA uses a combination of federal and local funds to purchase the vehicles and the vendor provide maintenance, insurance and administrative services with a cost reimbursement provided by vanpool participant fares.
2. Douglas County Rideshare is a county based program that operates the vanpool program completely in-house using a combination of federal and local funds to procure the vehicles, and provide maintenance and insurance services. Vanpool participants pay fares which are used to offset a portion of the costs which is supplemented by county provided subsidy which reduces the per person fare to approximately \$70 - \$130 per month depending upon travel distance.
3. The Cherokee County Area Transportation System contracts with one commercial vendor for the provision of vanpool vehicles and services. It offsets program costs with federal and local funds with monthly fares established by the vendor based on market demand. Monthly fares range from \$0 (fully subsidized by employers) to \$200 depending on the vendor fee structure.

Two known commercial vendors operating in the Atlanta area are Enterprise Rideshare and vRide. Enterprise Rideshare, a division of Enterprise Rent-A-Car, was established in 1994. It currently operates programs with agencies including but not limited to: Dallas Area Rapid Transit, San Antonio Metropolitan Transit, Georgia Regional Transportation Authority, and Victor Valley Transit Authority. vRide, formerly known as VPSI, has been offering commuter

vanpool services across the U.S. for approximately 30 years. Examples of v-Ride clients include the Miami-Valley Regional Planning Commission, the Central Indiana Regional Transportation Authority, the Central Florida Regional Transportation Authority, and the Georgia Regional Transportation Authority. Both vendors work in concert with these agencies to serve individual commuter groups and also provide support to employer based transportation programs.

Many employers find direct benefit in facilitating employee vanpools through active involvement in formation efforts and financial assistance to offset or eliminate the employee's monthly costs. Vanpool programs can be particularly beneficial at worksites that are not located in close proximity to public transportation or in situations where employees experience particularly long commutes. By lowering employee commute costs, employers increase employee satisfaction resulting in enhanced morale, and reduced absenteeism and turnovers. Employer sponsored vanpooling programs are also effective recruitment and retention tools. Another benefit of employer sponsored vanpools is the ability to take advantage of the Federal tax code which allows the use of tax-free dollars to pay for vanpool costs through employer sponsored programs. As of January 2014, the tax code allows tax-free transportation fringe benefits of up to \$130 per month per employee. Employers can offer:

- A tax-free employer-paid subsidy
- A pre-tax employee-paid payroll deduction
- A combination of both of the above.

Employees who set aside income on a pre-tax basis via payroll deduction for a qualified transportation fringe benefit do not pay federal income or payroll taxes on the income set aside. The employee saves federal withholding and FICA payroll taxes on the amount of deducted.

The vanpool service providers tailor their program offerings and services based on local conditions and partnership arrangements with agency and employers, but generally speaking both offer the following:

- High quality vehicles in a variety of sizes and seating configurations
- Back-up vehicles in the event the primary vehicle is out of service for maintenance or repairs
- Vehicle license and registration fees
- 30 day lease arrangements
- Scheduled and unscheduled maintenance and repair services through a convenient network of approved local service establishments
- Emergency roadside service assistance
- Liability, uninsured motorist, comprehensive and collision coverage with no deductible
- Primary and alternate driver screening process and safety restrictions (driver's license, traffic violation monitoring, 25 year old age requirement, credit check)

- Driver training and orientation
- Individual and employer based vanpool formation and continuity support

Recommended Alternative - New Fixed Routes

Based on the development of alternatives and the likelihood of success based on T-BEST model results, CUTR recommends the following three routes, especially since they achieve very different purposes and all have very different characteristics:

- The **Green** Route, which would operate service internally to most of Garden City;
- The **Blue** Route, which would operate service from Garden City Hall to Downtown Savannah; and
- The **Brown** Route, which does not relate to Garden City but extends the existing transit network westward by operating service on Quacco Road and Pooler Parkway.

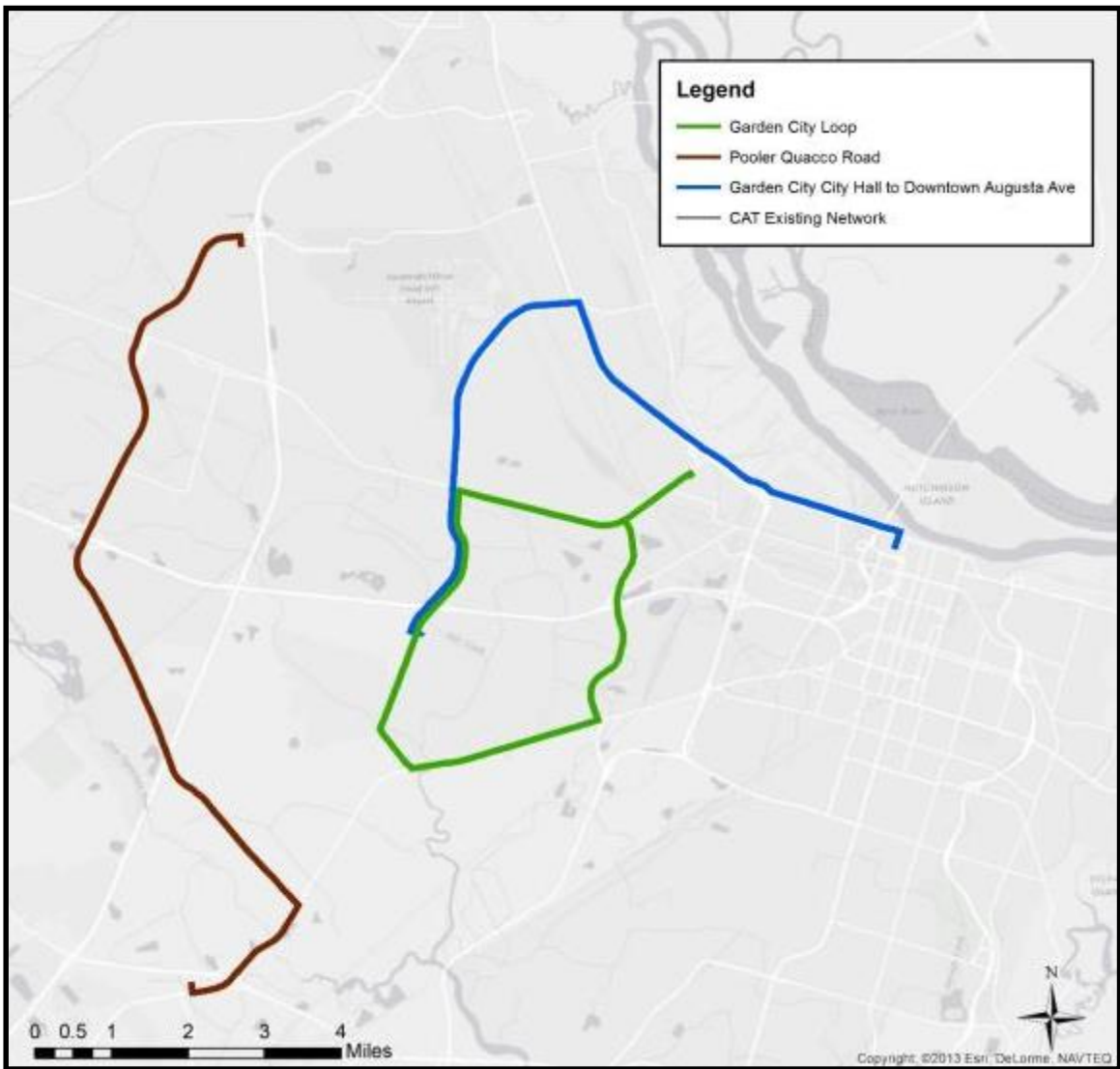


Figure 89. New Fixed Routes

Operating Costs

Fixed Routes

As recommended, the fixed-route improvements will include the extension of the Route 100x, which is already funded and will only experience an incremental increase in cost. With the Blue, Brown and Green Routes, the total daily revenue hours will be 88 and the annual revenue hours will be 32,000. When applying CAT’s fully allocated cost per hour of \$86, the annual cost is projected to be \$2,759,181. Table 7 below displays the detail of the service plan. Table 8 displays the operating costs of the services that are not recommended in this study, which consist of the Orange, Pink and Purple routes. Those routes would entail an additional 30,442 annual revenue hours at a cost of \$2,617,926.

Table 7. Operating Costs of Recommended Alternatives

Route Name	Daily Revenue Service Hours	Annual Revenue Hours	Annual Cost at \$86/hour
Route 100X	12.4	4,526	\$ 389,236
Blue Route	27.2	9,928	\$ 853,808
Brown Route	31.1	11,352	\$ 976,229
Green Route	17.2	6,278	\$ 539,908
Totals	87.9	32,084	\$ 2,759,181

*Note: The current 100X is already funded and will only experience an incremental cost increase due to the extension

Table 8. Operating Costs of Alternatives Not Recommended

Route Name	Daily Revenue Service Hours	Annual Revenue Hours	Annual Cost at \$86/hour
Orange Route	27.9	10,184.00	\$ 875,781
Pink Route	21.3	7,775.00	\$ 668,607
Purple Route	34.2	12,483.00	\$ 1,073,538
Totals	83.4	30,442	\$ 2,617,926

Capital

The capital costs for implementing new service is based on the number of buses that would be required if CAT’s current fleet is insufficient to fulfill the need. Table 9 below shows that 6 buses would be required to implement service at a cost of \$500,000 per bus the total would be \$3,000,000. In addition, CAT will make transit improvements in terms of a transit transfer center at Garden City Hall.

Table 9. Summary of Capital Needs

Route Name	Bus Requirement if Service Implemented	Bus = \$500,000
Blue Route	2	\$ 1,000,000
Brown Route	3	\$ 1,500,000
Green Route	1	\$ 500,000
Transit Center Improvements @ Garden City Hall		\$ 100,000
Totals	6	\$3,100,000

Recommended Alternative - Zonal Service

As contemplated in this service plan, there will be two zones established for West Chatham County. One zone will be focused on the area surrounding the Savannah/Hilton Head International Airport. The other zone will be focused in the geographic area surrounding Garden City City Hall. Table 10 below shows that at a cost of \$58 per hour, which was garnered from HART in Tampa, Florida as their own hourly van rate, the annual cost of Zonal Service will be \$677,000 per year.

Table 10. Zonal Service

Zonal Service	Daily Revenue Service Hours	Annual Revenue Hours	Annual Cost at \$58/hour
Zonal Service - Two zones	32	11,680	\$677,440

Commuter Assistance

As mentioned earlier in this report, commuter assistance is a mix of products and services serving the commuting market. One product and service is vanpooling. Vanpools occur when participants live in the same general vicinity of each other and work at the same and/or nearby employment site(s). As an example, commuters could work at Gulfstream, the Airport and/or the outlet mall. As with zonal service, this will be a new service in CAT’s family of services as contemplated in Making Connections. There are two options for CAT to consider.

The first option is for CAT to purchase vehicles using Federal Transit Administration (FTA) funds and, when purchased, determine who will pay the monthly costs of insurance, maintenance, parking and fuel. These costs could be covered by CAT, the employer, or the employees participating in the vanpool. As estimated, the capital costs of each vehicle would be \$38,000 with a net cost to CAT of \$30,400 if FTA Section 5307 funds were applied to the purchase at 80 percent. The monthly operating expenses associated are estimated at \$800 per month, or \$9,600 per year.

The second option is to lease vehicles, which entails the full cost of the vehicle purchased by an entity other than CAT. The monthly cost of leasing is estimated at \$1,300 or \$15,600 annually. CAT would then undergo the same process of determining who will pay the monthly leasing cost: CAT, the employer, or the employees participating in the vanpool. Table 11 below displays the options for CAT to consider in establishing vanpools in West Chatham County.

Table 11. Vanpool Options

Capital Expense - CAT Owns Vehicles				
		Total Price	Cost to CAT assuming 80% FTA 5307 Funding	Total Annual Cost
Commuter Van	Purchase	\$38,000	\$30,400	\$7,600
Operating Expense CAT Owns Vehicles				
		Costs	Months	Total Annual Cost
	Monthly cost of maintenance, insurance, fuel, parking	\$800	12	\$9,600
Operating Expense - CAT Leases Vehicles on behalf of Participants				
		Cost	Months	Total Annual Cost
	Monthly cost of lease, maintenance, insurance, fuel, parking	\$1,300	12	\$15,600

Final Recommendations

Upon analyzing the potential need of services, receiving public input concerning mobility issues, developing and modeling fixed route alternatives and recognizing other public transportation services such as commuter assistance services, it has been determined by CUTR that the expansion of the CAT service area to include all municipalities is feasible and beneficial to all residents in Chatham County. A comprehensive mobility system provides travel options to transit dependent and choice riders for commerce, health services, education, and employment. CUTR recommends a county wide coverage of the transit district,

Current understanding, based on records supplied to CAT by the County, is that if CAT's service becomes countywide, the revenue generated would be on the order of \$1.7 million, subject to continued growth in property valuation. CUTR analyzed more than \$6 million in potential improvements for the West Chatham area. Thus service improvements are prioritized based on the greatest likelihood of success. Although the prioritized three fixed route alternatives would come at a cost of \$2.8 million, costs could be scaled back appropriately by providing less service than what the study anticipates, which is 6:00 a.m. to 11:00 p.m. seven days a week at a frequency of one bus every 60 minutes.

CUTR further recommends that zonal service and commuter assistance play a role in serving the West Chatham area. Not only will these services improve travel choices for existing customers, they will go a long way in giving CAT the opportunity to expand its mobility management mission of attracting choice customers. These mobility enhancement service costs are projected to be around \$700,000 with the cost of vanpools contingent on how many vans are placed into service.

CUTR recommends that the CAT Board of Directors consider acceptance of this report. CUTR also recommends that the Board provide direction to staff to incorporate service and associated capital investments into the strategic plan and the MPO process. From there, the Board could consider forwarding the study to the Chatham County Board of County Commissioners to consider the expansion of the Transit District to include all properties within Chatham County. If the Board of County Commissioners considers the matter to the affirmative, then CAT staff will have the direction to develop service improvement priorities and implementation details for new service areas working directly with local governments and partnerships with private sector interests.