

Final Report  
January 2024

# Comprehensive Operations Analysis



**CTS**  
Clarksville Transit System

CITY OF  
**CLARKSVILLE**  
TENNESSEE

Prepared By:

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# Clarksville Transit System (CTS) Comprehensive Operations Analysis

***Prepared for:***

*Clarksville Metropolitan Planning Organization (CUAMPO)*

*Clarksville Transit System (CTS)*

*City of Clarksville, TN*

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*This report was prepared as a collaborative effort between Clarksville Transit System (CTS), the City of Clarksville, and the Clarksville Urbanized Area Metropolitan Planning Organization (CUAMPO).*



# Contents

- 1. Introduction..... 1
- 2. Regional and Local Development Patterns ..... 2
  - 2.1. Regional and Local Plans ..... 2
    - 2.1.1. Clarksville Urbanized Area Metropolitan Planning Organization ..... 2
    - 2.1.2. Clarksville-Montgomery County Regional Planning Commission ..... 3
      - 2.1.1. Clarksville Transit System..... 8
      - 2.1.2. Fort Campbell ..... 8
  - 2.2. Study Area..... 9
- 3. Study Area Demographics ..... 10
  - 3.1. Older Adults..... 11
  - 3.2. Persons with a Disability ..... 12
  - 3.3. Minority Population ..... 13
  - 3.4. Low-Income Households ..... 14
  - 3.5. Zero-Vehicle Households..... 15
  - 3.6. Transit Propensity..... 16
- 4. Systemwide Services Evaluation ..... 17
  - 4.1. Trend Analysis..... 17
    - 4.1.1. General Service Measures ..... 17
    - 4.1.2. Service Productivity Measures..... 18
    - 4.1.3. Cost Efficiency and Effectiveness Measures..... 19
  - 4.2. Peer Review ..... 20
    - 4.2.1. Peer Selection Process ..... 20
    - 4.2.2. General Service Measures Peer Analysis..... 21
    - 4.2.3. Service Productivity Measures Peer Analysis ..... 22
    - 4.2.4. Cost Efficiency and Effectiveness Peer Analysis ..... 23
- 5. Public Involvement Summary..... 24
  - 5.1. Stakeholder Meetings ..... 24
    - 5.1.1. City of Clarksville Mayor ..... 24
    - 5.1.2. Clarksville Housing Authority ..... 24
    - 5.1.3. Regional Planning Commission ..... 24
    - 5.1.4. Clarksville Area Chamber of Commerce ..... 24
    - 5.1.5. Nashville State Community College ..... 24
  - 5.2. Public Survey..... 25
  - 5.3. Public Meeting..... 25
- 6. Route-by-Route Service Characteristics ..... 26
  - 6.1. Service Area Description and Evaluation ..... 26



- 6.2. Services Evaluation ..... 27
- 7. Short and Long-Term Service Alternatives..... 40
  - 7.1. Proposed Service Modifications..... 40
    - 7.1.1. Preliminary Short-Term Proposed Modifications ..... 40
    - 7.1.2. Proposed Final COA Short-Term Service Changes ..... 51
    - 7.1.3. Preliminary Long-Term Proposed Modifications..... 51
- 8. Implementation Plan ..... 54
  - 8.1. Final COA Short-Term Service Changes ..... 54
  - 8.2. Service Policies ..... 58
    - 8.2.1. Service Policies ..... 58
    - 8.2.2. Infrastructure ..... 59
  - 8.3. Financial Summary ..... 61
    - 8.3.1. Operating Element..... 61
    - 8.3.2. Capital Element ..... 63
- 9. Conclusion..... 66

Figures

- Figure 1: Core Values for the Clarksville Transportation System .....5
- Figure 2: Clarksville Transit System COA Study Area.....9
- Figure 3: Persons Aged 65 and Over by Block Group (2021 ACS 5-Year Estimates) ..... 11
- Figure 4: Persons with a Disability by Block Group (2021 ACS 5-Year Estimates)..... 12
- Figure 5: Persons with Minority Status by Block Group (2021 ACS 5-Year Estimates) ..... 13
- Figure 6: Household Poverty Status by Block Group (2021 ACS 5-Year Estimates) ..... 14
- Figure 7: Zero-Vehicle Households by Block Group (2021 ACS 5-Year Estimates) ..... 15
- Figure 8: Transit Propensity by Block Group Index ..... 16
- Figure 9: Route 1 (Fort Campbell) Profile..... 32
- Figure 10: Route 2 (Tiny Town Road) Profile ..... 33
- Figure 11: Route 3 (Cunningham Loop) Profile ..... 34
- Figure 12: Route 4 (Peachers Mill Road) Profile ..... 35
- Figure 13: Route 5 (Hilldale) Profile ..... 36
- Figure 14: Route 6 (Madison Street) Profile ..... 37
- Figure 15: Route 7 (Governor Square Mall) Profile ..... 38
- Figure 16: Route 8 (Express/Hospital) Profile ..... 39
- Figure 17: Route 1 (Fort Campbell) Preliminary Modifications ..... 42
- Figure 18: Route 2 (Tiny Town Road) Preliminary Modifications ..... 43
- Figure 19: Route 4 (Peachers Mill Road) Preliminary Modifications (Continues to Next Page)  
..... 44

Figure 20: Route 5 (Hilddale) Preliminary Modifications (Continues to Next Page) .....46

Figure 21: Route 5 (Hilddale) Preliminary Modifications .....47

Figure 22: Route 7 (Governor Square Mall) Preliminary Modifications .....48

Figure 23: Route 8 (101 Express/Hospital) Preliminary Modifications (Continues to Next Page)  
.....49

Figure 24: Long-Term Proposed Service Changes .....53

Figure 25: Route 4 (Peachers Mill Road) Final COA Service Changes .....55

Figure 26: Route 5 (Hilddale) Final COA Service Changes .....56

Figure 27: Route 7 (Governors Square Mall) Final COA Service Changes .....57

Figure 28: FY 2022 Operating Revenue Sources.....61

Tables

Table 1: 2020+ Transportation Strategy.....6

Table 2: General Service Measures.....18

Table 3: Service Productivity Measures .....18

Table 4: Cost Efficiency and Effectiveness Measures.....19

Table 5: CTS Peer Agencies Service Areas Characteristics (FY 2021).....20

Table 6: CTS Peer Agencies Service Areas Characteristics Comparisons (FY 2021).....21

Table 7: CTS Peer Agencies General Service Measures (FY2021) .....22

Table 8: CTS Peer Agencies General Service Measures Comparisons (FY2021) .....22

Table 9: CTS Peer Agencies Service Productivity Measures (FY2021) .....22

Table 10: CTS Peer Agencies Service Productivity Measures Comparison (FY2021).....23

Table 11: CTS Peer Agencies Cost and Efficiency Measures (FY2021) .....23

Table 12: CTS Peer Agencies Cost and Efficiency Measures (FY2021) .....23

Table 13: Existing Services Data and Timeframes.....26

Table 14: Route Level of Service (FY 2022) .....29

Table 15: Annual Route Service Statistics (FY 2022).....30

Table 16: Route Performance Measures (FY 2022).....31

Table 17: Proposed Short-Term Route Service Changes .....41

Table 18: Proposed Final COA Service Changes .....51

Table 19: Proposed Long-Term Service Changes .....52

Table 20: Historic 5-Year Operating Expense and Revenue .....62

Table 21: Vehicle Cost and Total Fleet .....63

Table 22: Fixed Route Fleet Replacement Plan .....64

Table 23: Paratransit Fleet Replacement Plan.....65

## 1. Introduction

The Clarksville Transit System (CTS) is the sole provider of public transportation in the Clarksville, Tennessee and Oak Grove, Kentucky urbanized area. The mission of CTS is to plan, implement, maintain, and manage a public transportation system that allows for maximum mobility for the community with an emphasis on safety, quality, and efficiency.

The purpose of this Comprehensive Operations Analysis (COA) is to assess the fixed-route public transportation services for Clarksville, Tennessee, Oak Grove, Kentucky, and the Fort Campbell Military Installation. The primary objectives of the COA are to:

- Identify underutilized areas in need of expanded and/or new service outside and within the CTS service area.
- Analyze and address the needs of CTS customers and stakeholders.
- Assess existing CTS service to years prior and other peer agencies to determine areas of improvement.
- Examine current CTS service and recommend potential improvements to create a more effective and efficient service.

It is the expectation of CTS that the recommendations outlined in this COA will in the short term, allow CTS to maintain service for their existing customer base while promoting enhanced operational efficiency.

Transit agencies such as CTS seek to maximize often limited resources while providing high-quality service to their customers. A COA allows agencies to utilize existing systemwide and route-by-route data, along with feedback from current customers and CTS staff to improve their transit operations. A COA employs these transit planning efforts utilizing two (2) primary lenses of analysis:

1. **A Focus on Short Term Improvements:** Short to mid-term operational improvements (i.e., less than five (5) years) that consist primarily of service changes.
2. **A Cost Neutral Approach:** Implementation of service improvements that do not require additional operating expenditures or require minimal investment.

This COA utilizes the feedback and support of CTS leadership, operators, and passengers to identify actionable and phased implementation of service changes and policies that lead to short term operations improvements with minimal impacts on operating budget. Additionally, long-term service enhancements are included as well to help guide a future vision for more robust transit service for the Clarksville Urban Area.



## 2. Regional and Local Development Patterns

This chapter provides an overview of previous plans, land use and development patterns, major travel nodes and activity centers, regional employment trends, and demographics in order to paint a picture of the study area and its relation to CTS transit services.

### 2.1. Regional and Local Plans

The following plans have been adopted by Clarksville Urbanized Area Metropolitan Planning Organization (CUAMPO), Clarksville-Montgomery County Regional Planning Commission (RPC), the City of Clarksville, CTS, and Fort Campbell for land use and transportation planning. Summaries of these plans are provided as they relate to transit in Clarksville.

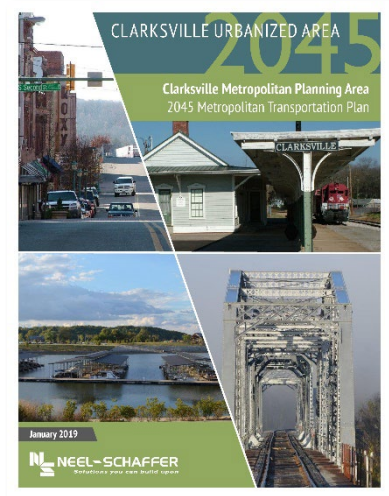
#### 2.1.1. Clarksville Urbanized Area Metropolitan Planning Organization

CUAMPO was formed in 1977 as part of a federal process to conduct local transportation planning in urbanized areas. The federal government requires urbanized areas to establish a planning process that is Comprehensive, Continuing, and Cooperative, the three Cs of transportation planning. Since the creation of CUAMPO, the City of Clarksville has become the fifth largest city in the State of Tennessee. The region is also home to Fort Campbell and Austin Peay State University.

#### 2045 Metropolitan Transportation Plan (2019)<sup>1</sup>

The 2045 Clarksville Metropolitan Transportation Plan (MTP) is the multimodal, long range transportation plan for the Clarksville Metropolitan Planning Area (MPA). The recommendations of the 2045 MTP are the result of public input, technical analysis, and close coordination between local municipalities, counties, CTS, Tennessee Department of Transportation (TDOT), Kentucky Transportation Cabinet (KYTC), and other members of CUAMPO. The Clarksville MPA comprised of the Clarksville, Tennessee urbanized area and nearby areas is expected to urbanize in the next twenty years and is federally required to maintain an MTP with a minimum twenty-year time horizon.

The MTP evaluated the fixed-route service provided by CTS, as well as other services offered within the MPA. Current performance and future needs were assessed primarily by means of the Comprehensive Operation Analysis (2016) conducted by CTS, as well as the current CTS Strategic Plan. These analyses indicated that the CTS met the needs of the current demographics within the MPA. It was noted in the MTP that, future consideration will need to be given to the anticipated increase in elderly persons as well as the 18-34 year-old riders due to Fort Campbell's presence.



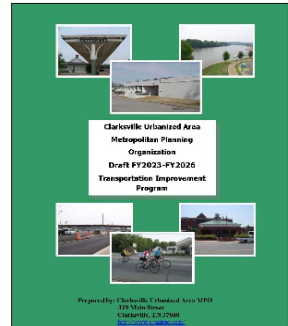
<sup>1</sup> [http://www.cuampo.com/wp-content/uploads/2020/02/Clarksville\\_MTP\\_2045-1.pdf](http://www.cuampo.com/wp-content/uploads/2020/02/Clarksville_MTP_2045-1.pdf)

## 2023-2026 Transportation Improvement Program (2019)<sup>2</sup>

CUAMPO is federally mandated to carry out the planning and programming of federally funded and regionally significant transportation activities within the cities of Clarksville and Oak Grove, Montgomery County, Tennessee, as well as portions of the City of Hopkinsville and Christian County, Kentucky. The FY2023 - FY2026 Transportation Improvement Program (TIP) is a product of the ongoing transportation planning process of CUAMPO.

The TIP identifies the timing and funding of all highways, bridge, transit, bicycle, pedestrian, and other surface transportation projects scheduled for implementation over the next four years that are regionally significant and/or that use federal transportation funds. This TIP identifies planned transportation projects and projected revenues during the time period of FY2023 to FY2026 and ensures coordination of transportation improvements by local, state, and federal agencies.

FY2023-FY2026 Transportation Improvement Program



This report is a preliminary document, prepared in cooperation with a wide range of stakeholders from all or several of the following: Clarksville, Oak Grove, Montgomery County, Tennessee; Hopkinsville, Christian County, Kentucky; and portions of the City of Hopkinsville, Kentucky. The report is a preliminary document and is subject to change without notice. The report is the property of the Clarksville Urbanized Area Metropolitan Planning Organization.

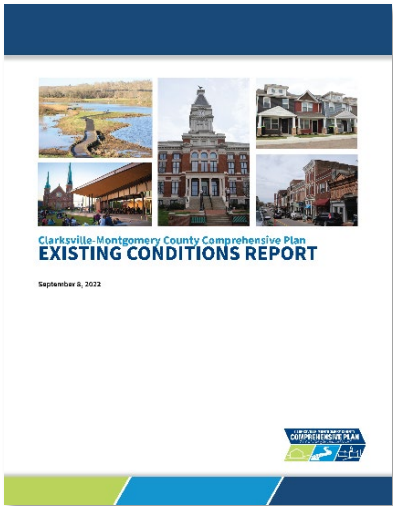
### 2.1.2. Clarksville-Montgomery County Regional Planning Commission

The Clarksville-Montgomery County Regional Planning Commission (RPC) provides technical and planning assistance in coordinating actions among federal, state, regional, and local governments. The basic function and duty of the RPC is to make and adopt a general regional plan for the physical development of the territory of the region. The plan is for the general purpose of guiding and accomplishing a coordinated, adjusted, efficient, and economic development of the region. Other common duties of the RPC include monthly zoning, subdivision, and site plan reviews. The RPC also houses the Common Design Review Board which provides oversight on Historic Zoning cases and design review for Downtown and the Madison Street Corridor in Clarksville. The RPC also houses CUAMPO.

### Clarksville Montgomery County Comprehensive Plan Existing Conditions Report (2022)<sup>3</sup>

The Clarksville Montgomery County Comprehensive Plan Existing Conditions Report (ECR) presents Clarksville-Montgomery County's existing conditions and discusses their influence on the comprehensive planning process with the Clarksville City Council and Montgomery County Commission, the Citizen and Steering Committees, and the Technical Committee. The report is a preliminary step in the planning process and does not contain plan recommendations. Existing conditions, issues, and opportunities identified in the memorandum will guide the Clarksville-Montgomery County Comprehensive Plan.

The ECR presents a demographic and economic profile, providing a picture of influencing factors, trends, and potentials that will inform the plan. It examines the City and County's recent plans and studies, acknowledging that these contain relevant recommendations and policies that should carry forward and adapt for the coming years. Lastly, it summarizes planning topics with concise text and maps that are easy to read and reference.



<sup>2</sup> <http://www.cuampo.com/wp-content/uploads/2020/02/FinalFY2020-FY2023TIP-1.pdf>

<sup>3</sup> <https://www.cmcrcpc.com/wp-content/uploads/2022/09/Clarksville-Montgomery-County-Existing-Conditions-Report-Final.pdf>

The ECR focuses on relevant information that will make the Clarksville-Montgomery County Comprehensive Plan accurate and relevant. The baseline of existing conditions will be built upon and addressed in the plan, informing goals, key policies, and land use recommendations in upcoming stages of the planning process.

#### Transportation 2020+ (2021)<sup>4</sup>

The 2020+ Transportation Strategy is a strategic document designed to guide transportation decisions within the fiscal constraints of the City's budget and limited state and federal funding opportunities. The plan also estimates the costs associated with priority improvements, and clearly outlines options to fund the plan's goals.

As outlined in the 2020+ Transportation Strategy, "Clarksville's transportation network enhances the City's unique character by safely interconnecting our residents, employees and visitors to open spaces, neighborhoods, jobs, downtown and the region through investments that improve roadway capacity, and are walkable, bikeable, transit supportive and sustainable."

The following three mobility challenges are identified in the 2020+ Transportation Strategy:

1. Regional Transportation and Community Quality of Life
2. Community Connectivity, Comfort and Safety
3. Transit Convenience

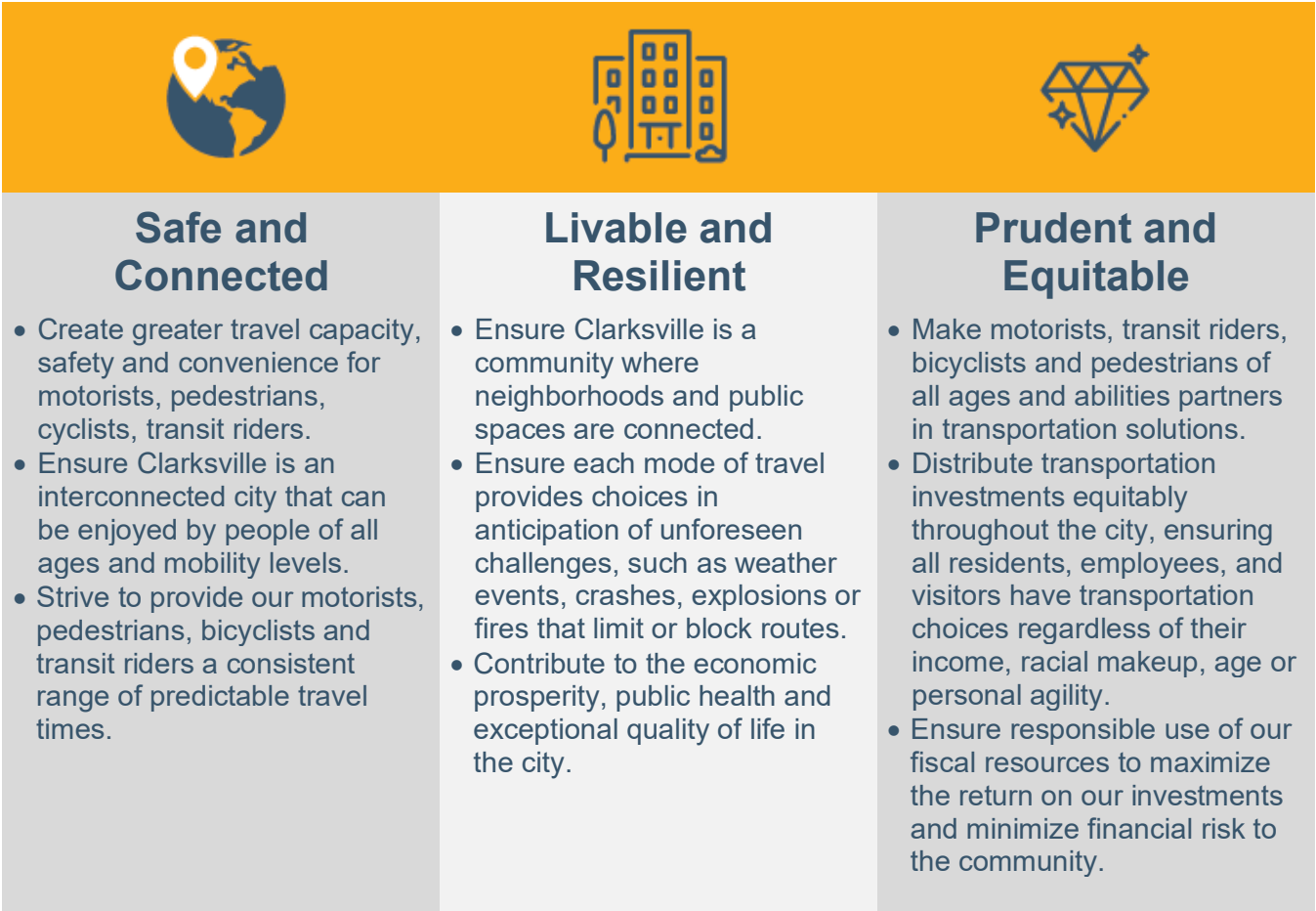
The 2020+ Transportation Strategy outlines the core values for the Clarksville transportation system (**Figure 1**) and identifies Tier 1, 2, and 3 projects. Tier 1 projects are prioritized by their ability to adhere to the City's transportation core values and are ranked as urgently needed to address traffic congestion, promote motorist and pedestrian safety, connect the community, and expand transit service. The transit projects identified in the 2020+ Transportation Strategy are identified in **Table 1**.

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<sup>4</sup> [https://www.cmcrcpc.com/wp-content/uploads/2022/01/07\\_Transportation-2020\\_Plus.pdf](https://www.cmcrcpc.com/wp-content/uploads/2022/01/07_Transportation-2020_Plus.pdf)



Figure 1: Core Values for the Clarksville Transportation System



### Table 1: 2020+ Transportation Strategy



## Tier 1

## Main Transit Station Relocation

This project would replace the existing CTS Transit Center on Legion Street with a larger transit hub at another downtown location. The goal is to reduce transit traffic congestion in the heart of downtown and provide more space for future transit system expansion.

Cost: \$10 million



## Tier 2

## St. Bethlehem Transit Hub

Cost: \$750,000



### Tier 3

## Northside Transit Hub

Cost: \$750,000

## Clarksville Montgomery County Growth Plan (2020)<sup>5</sup>

The Clarksville Montgomery County Growth Plan: A Strategy for Balanced Growth was developed between April and October 2019 and adopted in January 2020. Because Clarksville-Montgomery County experienced tremendous growth over the preceding 20 years, local leadership made the decision in 2019 to update the Clarksville Montgomery County Growth Plan before getting too far behind the anticipated growth that was anticipated when the plan was first adopted in 1999.

As required by Public Chapter (PC) 1101 of 1998 as adopted by the Tennessee State Legislature, the Growth Plan includes three main elements:

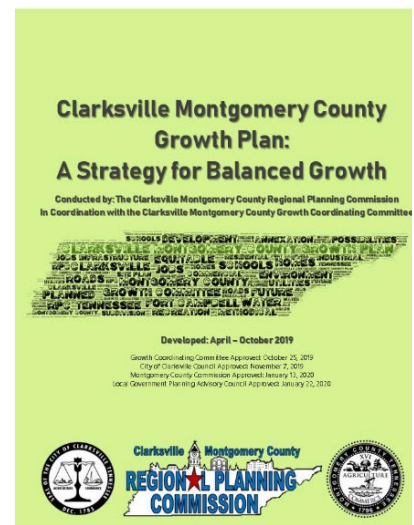
- Urban Growth Boundary (UGB)
- Planned Growth Areas (PGAs)
- Rural Areas (RAs)

As described in the Clarksville Montgomery County Growth Plan, the UGB is the area where a full complement of urban type services are either presently available or have the potential to be available over the 20-year planning period. It is this area that is set aside for the highest densities of residential development. The ability to annex and potential access to sanitary sewer service are some of the primary factors used in the establishment of this boundary.

PGAs are areas that have a history of low to moderate levels of residential development or are in the path of present and projected growth trends in the County. These areas have little likelihood of receiving a full complement of urban services, specifically sanitary sewer, over the 20-year planning period and therefore cannot adequately support higher densities of residential development.

RAs are areas where the lowest densities of residential development are considered to be most appropriate. These areas tend to have the least amount of urban services and infrastructure available and have the least likelihood of receiving them over the planning period. The RA contains over three-fifths of the county's land and is mostly agricultural land, floodplain areas, wetlands, steep slopes, scenic vistas and natural areas.

In comparison to the 1999 plan, the 2000 plan increased the amount of UGB area by 1,512 acres, while the PGA area was decreased by 17,652 acres. This resulted in adding 13,807 acres back to the RA. These changes reflect a desire for more compact development near urban services and in areas where current development trends indicate a need for growth while avoiding difficult to develop land. CTS is discussed within the context of potential planned annexation of unincorporated Montgomery County into Clarksville and the need to evaluate potential future service expansions into those areas. Currently, areas outside of the Clarksville Urbanized Area are ineligible for fixed-route CTS service.



<sup>5</sup> <https://www.cmcrcpc.com/wp-content/uploads/2020/07/Final-2040-Growth-Plan-Adopted-1-22-2020.pdf>



### 2.1.1. Clarksville Transit System

CTS is the sole provider of public transportation for the Clarksville Urbanized Area which includes the cities of Clarksville, Tennessee and Oak Grove, Kentucky, as well as the U.S. Army Fort Campbell Base (Fort Campbell). CTS has developed multiple planning documents in order to assess the current state of transit services as well as future modifications to service. The following plans provide insight into future strategies presented by CTS and its relevant stakeholders in providing transit to current and future riders.

#### Clarksville Transit System 2022 Strategic Plan (2022)<sup>6</sup>

The Clarksville Transit System 2022 Strategic Plan is a planning document that provides updates on the state of the system, goals and objectives, and recommended enhancements for CTS service. High priority strategic options for CTS are identified in this report, specifically, the construction of a new transit center, vehicle expansion, internet connectivity on vehicles, and the development of a Comprehensive Operations Analysis (COA).

#### Clarksville Transfer Center Relocation Feasibility Addendum (2021)<sup>7</sup>

The Clarksville Transfer Center Relocation Feasibility Addendum is an update to the previous transfer center relocation study, that discusses additional candidate sites for the transfer center relocation. The addendum discusses that some candidate sites previously discussed are no longer feasible due to changing conditions in downtown Clarksville and not passing environmental and geological changes. A discussion of challenges associated with future siting and future considerations for relocating the transfer center are also provided.

#### Clarksville Transfer Center Relocation Feasibility Study (2017)<sup>8</sup>

The Clarksville Transfer Center Relocation Feasibility Study was conducted to determine service alternatives for the improvement of the existing downtown transit transfer center that CTS operates. The study identifies three potential sites to be reviewed further for the construction of a new transit transfer center and provides a timeline for its opening.

#### Clarksville Transit System Comprehensive Operations Analysis (2016)<sup>9</sup>

The Clarksville Transit System Comprehensive Operations Analysis was conducted to assess CTS fixed-route transit, allowing for the recommendation of different service alternatives to improve its operational efficiency. This previous COA was reviewed when developing the 2023 COA to compare previous findings and recommendations to ones created for this one.

### 2.1.2. Fort Campbell

Fort Campbell is a U.S. Army Installation located on the state line of Tennessee and Kentucky, near the cities of Clarksville, Tennessee and Oak Grove, Kentucky. Fort Campbell and its active base population have strong ties to the Clarksville Urban Area. Route 1 currently serves Fort Campbell and connects it to downtown Clarksville. In combination with other routes, Route 8 provides Fort Campbell soldiers, staff, families, and retirees with access to the Clarksville Veterans Administration Clinic located on Weatherly Drive, near the Tennova Hospital.

#### Fort Campbell Green Infrastructure Plan (2014)<sup>10</sup>

The purpose of the Fort Campbell Green Infrastructure Plan is to develop a vision for the future of Fort Campbell and implement its Real Property Vision Statement, “to create an enduring, sustainable, adaptable installation that supports mission readiness and power projection capabilities; Fort Campbell

<sup>6</sup> <https://www.cityofclarksville.com/DocumentCenter/View/7510/Clarksville-Transit-System-2022-Strategic-Plan>

<sup>7</sup> <https://www.cityofclarksville.com/DocumentCenter/View/7222/Transit-Center-Relocation-Addendum-2021>

<sup>8</sup> [http://www.cuampo.com/wp-content/uploads/2020/02/Final-CTS-Transfer-Center-Relocation-Study-Report\\_FINAL-March-2017.pdf](http://www.cuampo.com/wp-content/uploads/2020/02/Final-CTS-Transfer-Center-Relocation-Study-Report_FINAL-March-2017.pdf)

<sup>9</sup> <http://www.cuampo.com/wp-content/uploads/2020/02/Final-CTS-COA-Report-1.pdf>

<sup>10</sup> [https://home.army.mil/campbell/application/files/5615/5112/8009/GIP\\_AUG\\_2014\\_FINALv2\\_signed.pdf](https://home.army.mil/campbell/application/files/5615/5112/8009/GIP_AUG_2014_FINALv2_signed.pdf)

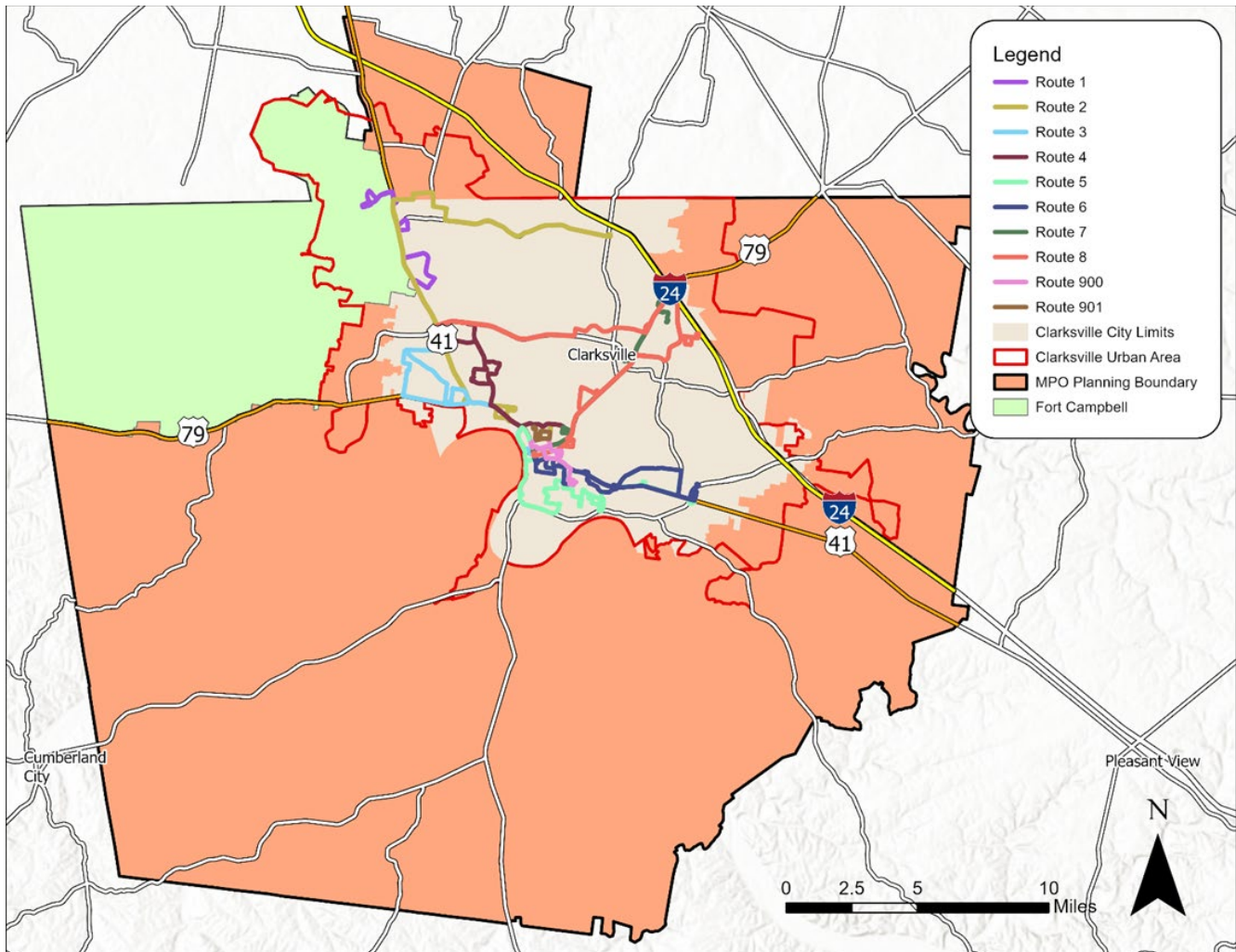
will build campus-like environments with well-connected, safe, healthy, and active communities and a defined sense of place”.

One of the strategies outlined in the plan is focused on promoting multi-modal transportation, including improvement mass transit service. The plan states that the current bus service provided by CTS appears to be sufficient at this time; however, if development expands as shown in the *Town Center Area Development Plan*, the route and stops may need to be re-evaluated. The plan further outlined a preference for Fort Campbell to develop an installation bus service with additional stops serving on base facilities.

## 2.2. Study Area

**Figure 2** shows the general study area for the CTS COA. The CTS service area, where transit services currently operate, is defined as being within the Clarksville Urban Area shown below. The service area serves the City of Clarksville, parts of unincorporated Montgomery County Tennessee as well as a portion of Christian County, KY to the north.

Figure 2: Clarksville Transit System COA Study Area

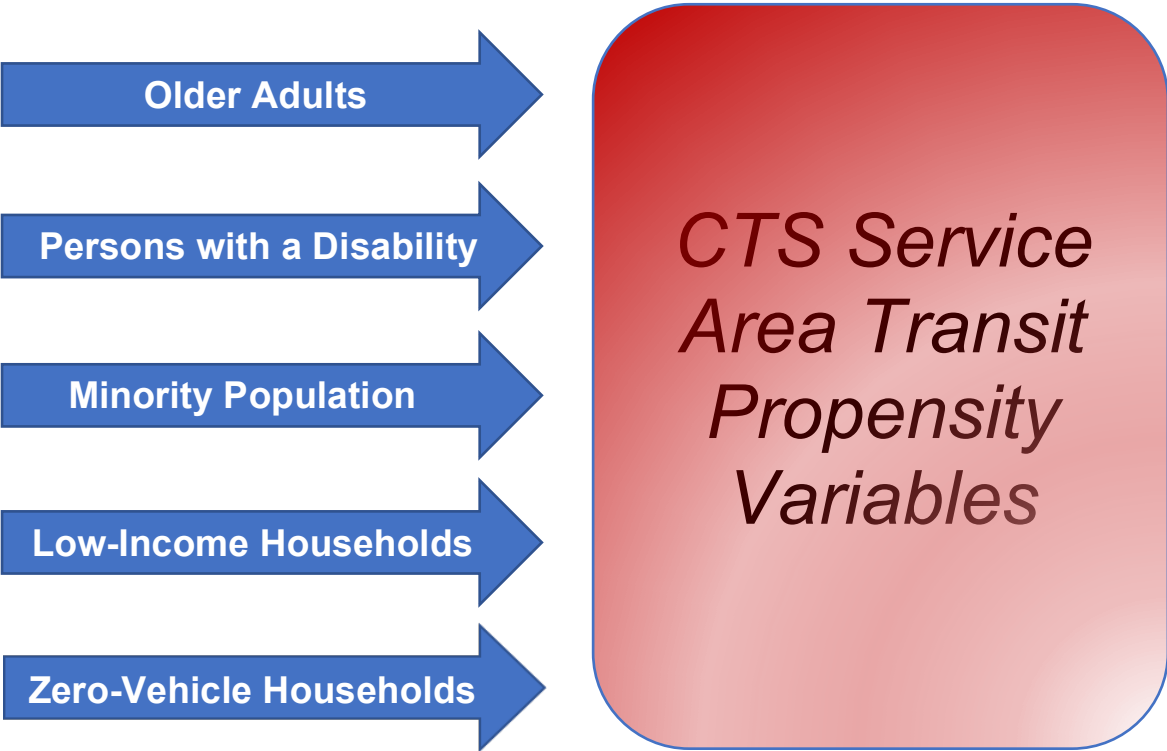


### 3. Study Area Demographics

This section reviews the demographic characteristics of the CTS service area to better understand the geographic dispersion of current and potential CTS customers. This demographic overview provides insight into the transit propensity (geographic dispersion of demographic characteristics more supportive of transit) of the service area that CTS operates within. Demographic data was collected at a Census Block Group level using 2021 American Community Survey (ACS) 5-Year Estimates. For the purposes of this analysis, five (5) distinct demographic characteristics were utilized for this propensity analysis:

- **Older Adults:** Persons aged 65 and older.
- **Persons with a Disability:** Persons with a disability characterized as a difficulty with hearing, vision, cognitive, ambulatory, selfcare, and/or independent living.
- **Minority Population:** Persons self-identifying as White non-Hispanic.
- **Low-Income Households:** Households at or below the federal poverty line.
- **Zero-Vehicle Households:** Households where no individual owns a personal vehicle.

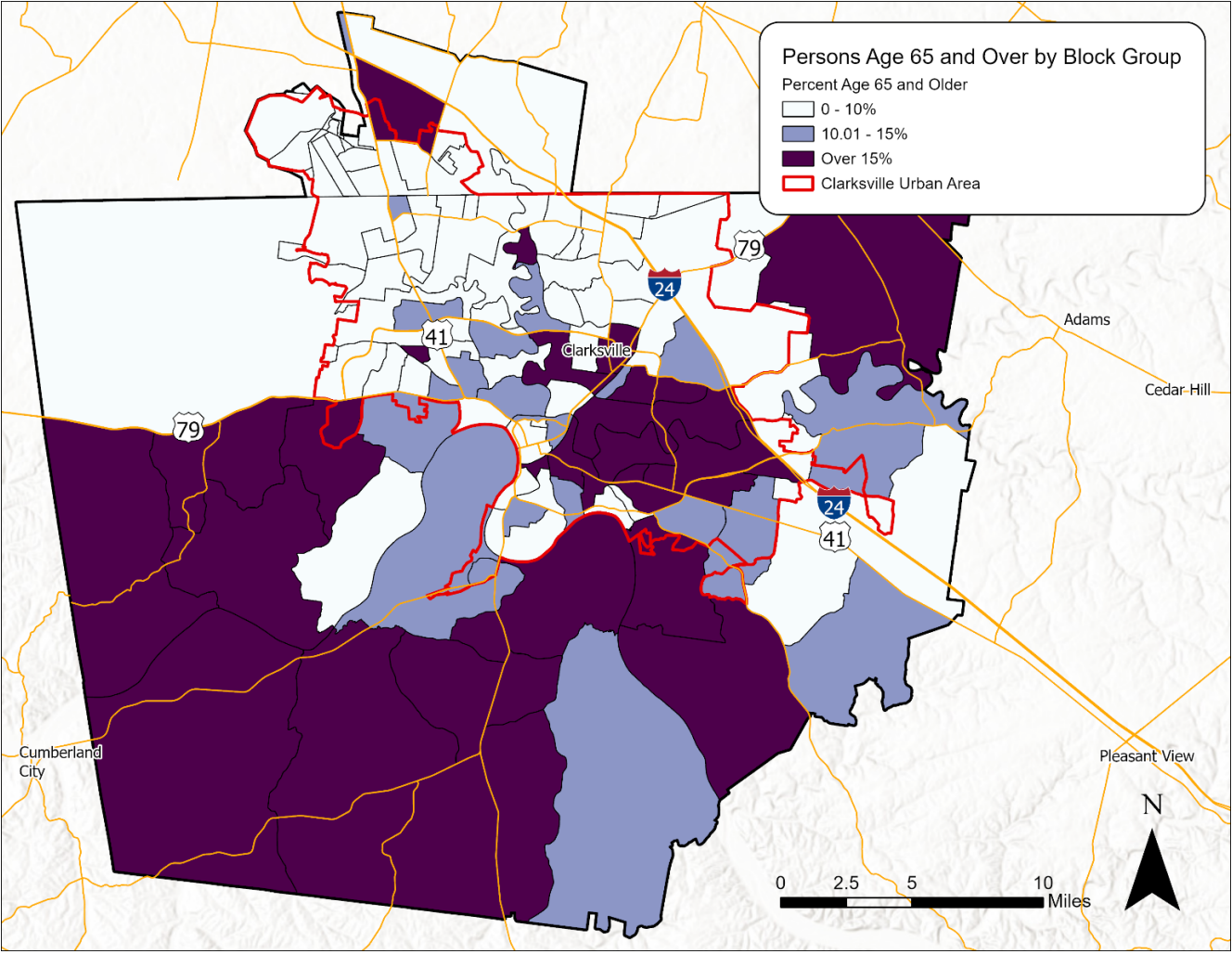
The demographic analysis is presented on the following pages for each of the five demographic characteristics defined above utilizing the aid of map graphics to illustrate the dispersion of these populations within the CTS service area.



### 3.1. Older Adults

**Figure 3** illustrates the percentage of individuals aged 65 and over by Census Block Group in the CTS service area. Approximately 10% of the service area’s population is aged 65 and over and are largely concentrated in the southwest portion of Montgomery County such as Oak Ridge and Palmyra as well as the eastern portion of the Clarksville urban area.

Figure 3: Persons Aged 65 and Over by Block Group (2021 ACS 5-Year Estimates)

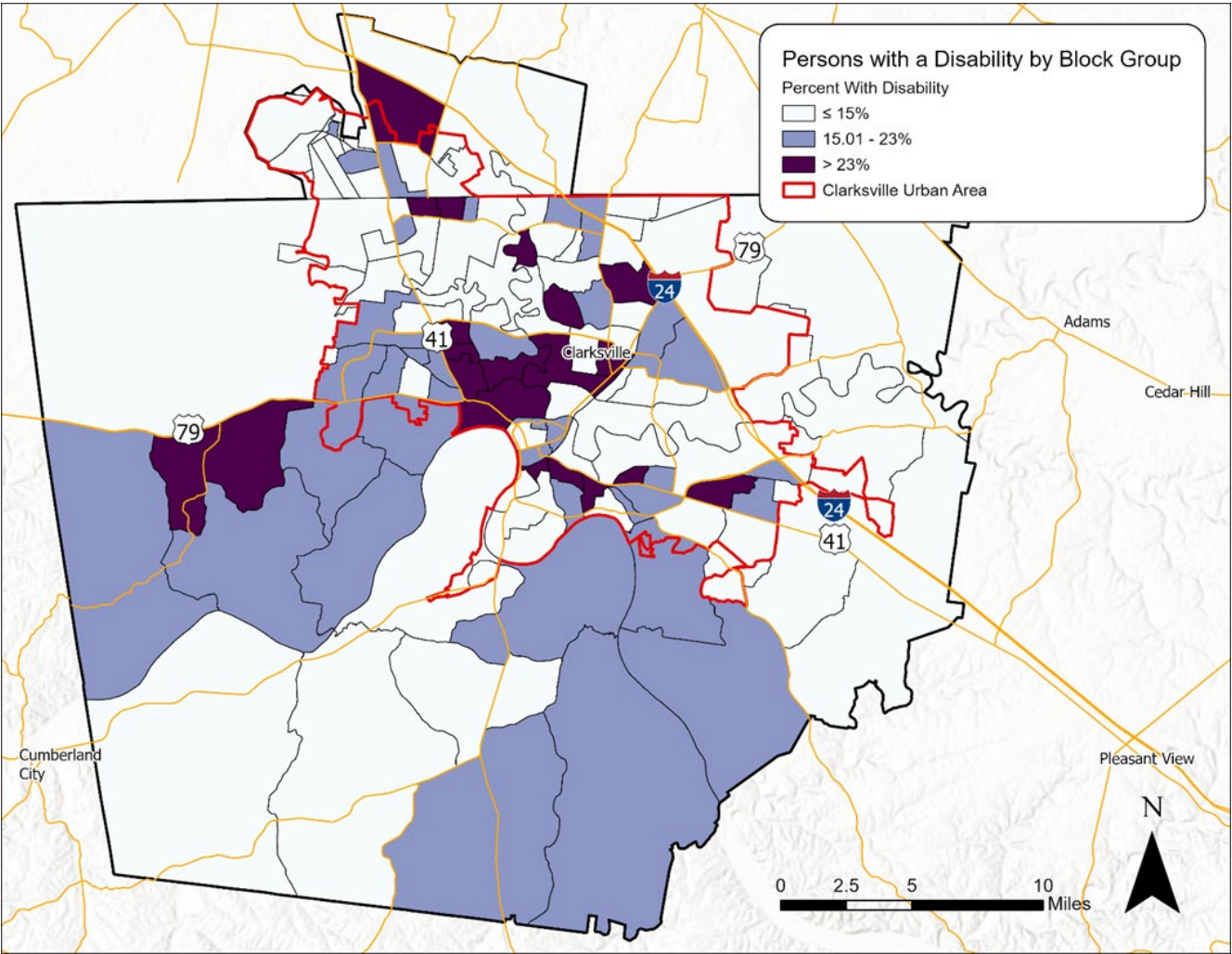




### 3.2. Persons with a Disability

**Figure 4:** Persons with a Disability by Block Group illustrates the percentage of individuals with a disability by Census Block Group in the CTS service area. The ACS defines a disability as a serious difficulty in hearing, vision, cognition, or ambulatory functions. Approximately 15% of the service area’s population identifies as someone with a disability and are largely concentrated in areas near downtown Clarksville, Woodlawn, and Southside.

Figure 4: Persons with a Disability by Block Group (2021 ACS 5-Year Estimates)

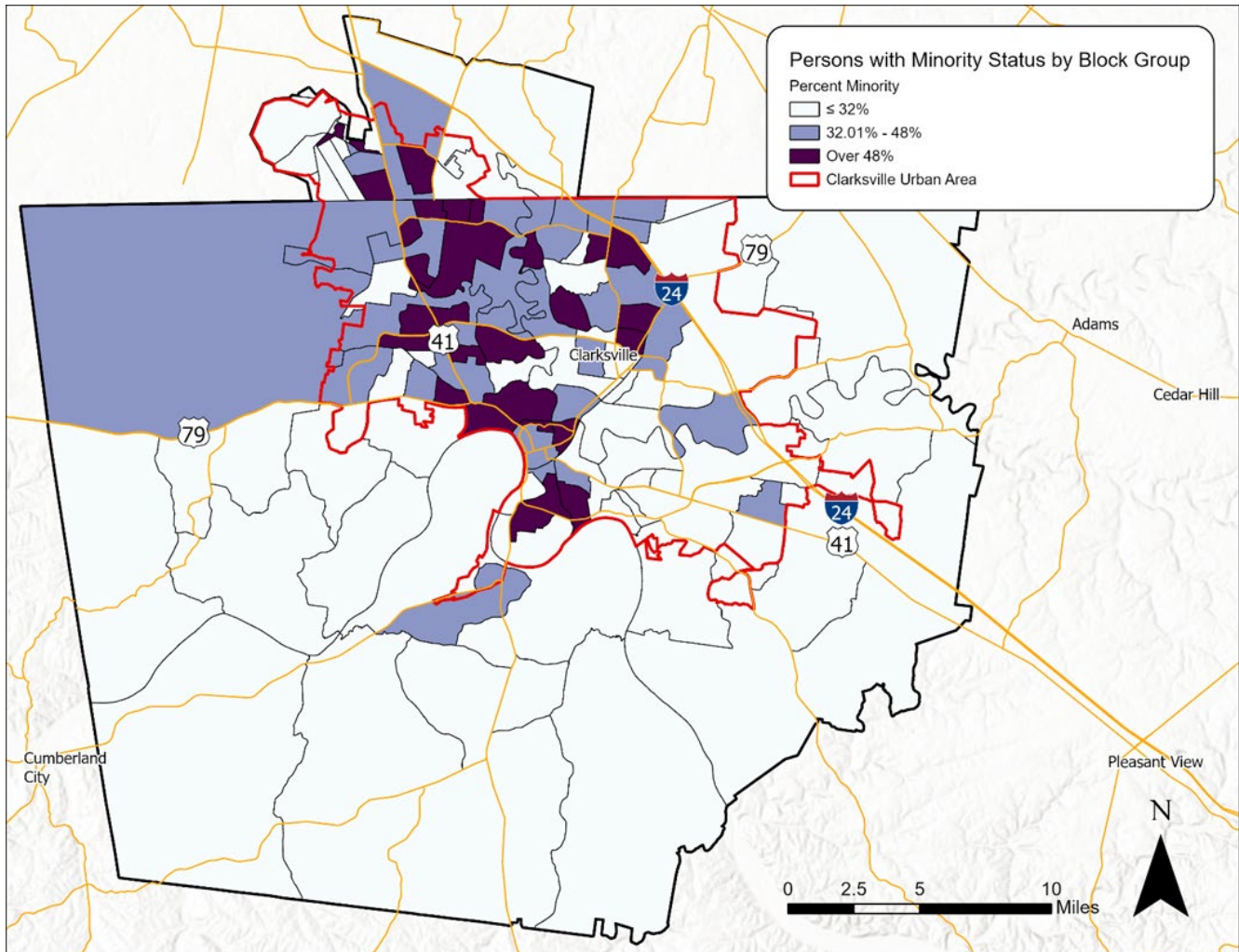




### 3.3. Minority Population

**Figure 5** illustrates the minority population in the Clarksville service area with the percentage persons identifying as a racial or ethnic minority, by Census Block Group in the CTS service area. The ACS defines someone as having minority status if they are non-white and of non-Hispanic origin. Approximately 32% of the service area's population identifies as someone with minority status and are largely located in the northern and western portions of the Clarksville Urban Area as well as the areas near Fort Campbell in Oak Grove, KY.

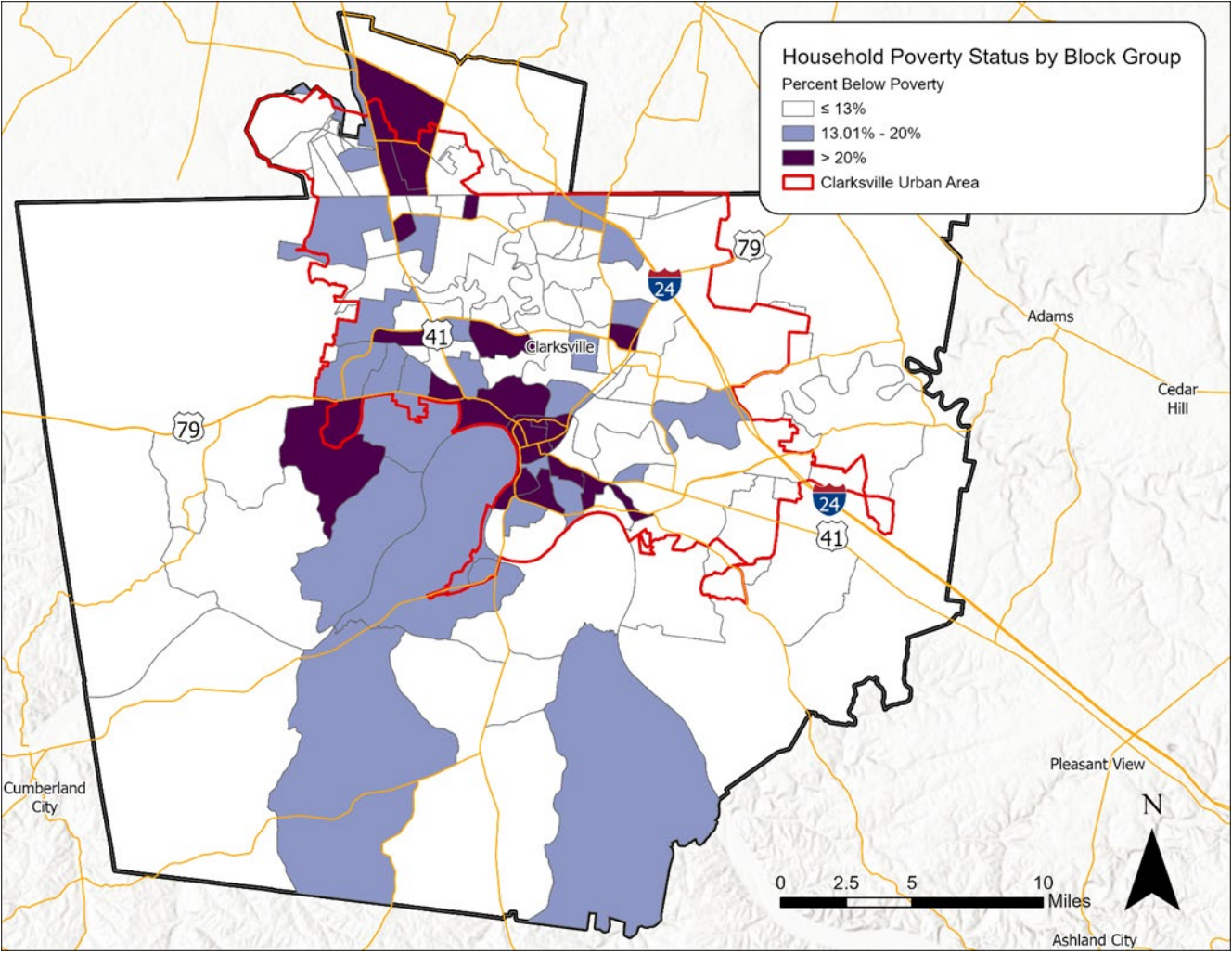
Figure 5: Persons with Minority Status by Block Group (2021 ACS 5-Year Estimates)



### 3.4. Low-Income Households

**Figure 6** illustrates the percentage of households below the Federal Poverty Line by Census Block Group in the CTS service area. Approximately 13% of the service area’s households are below the federal poverty level and are largely concentrated in areas near downtown Clarksville, Cumberland Heights, and Oak Grove, KY.

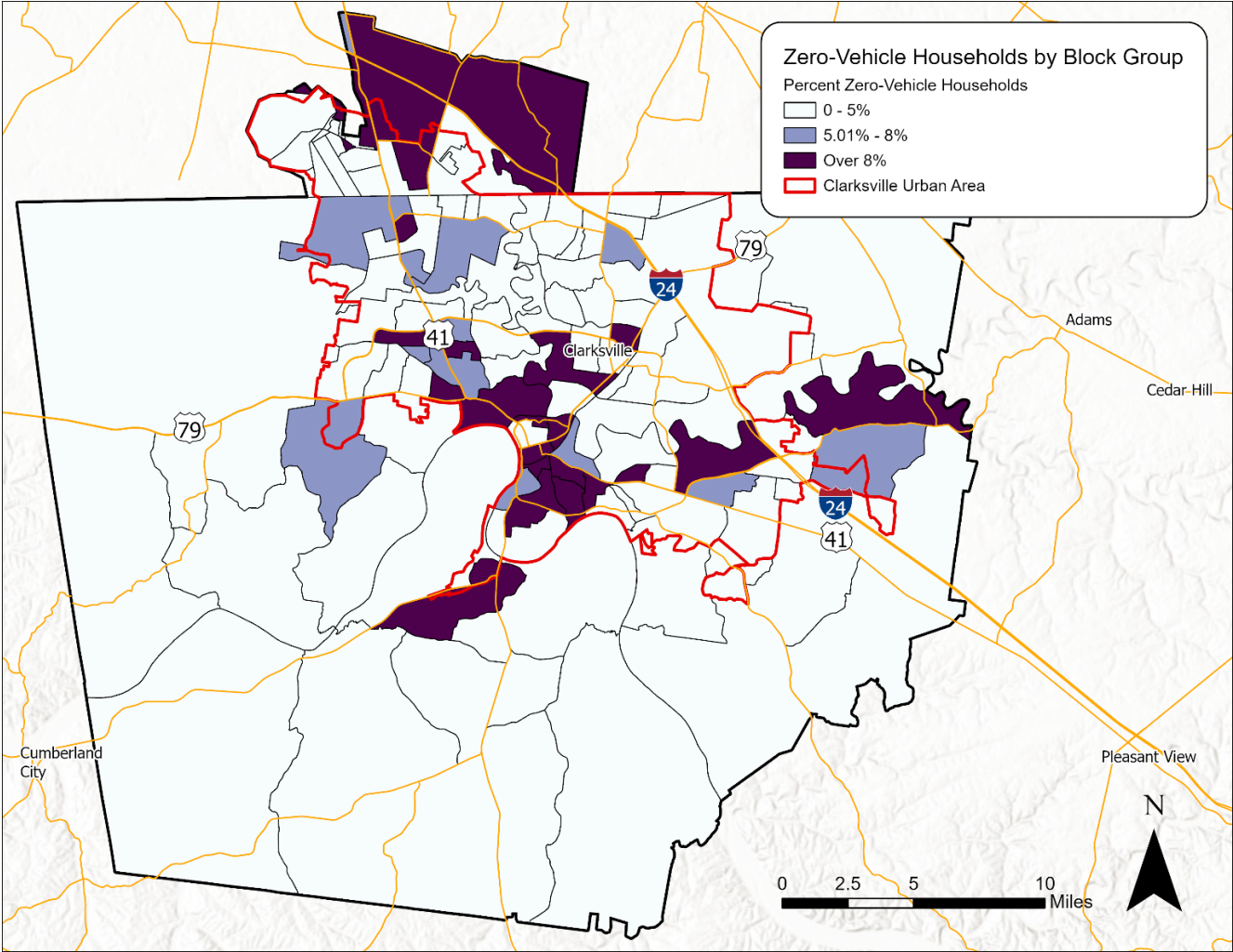
Figure 6: Household Poverty Status by Block Group (2021 ACS 5-Year Estimates)



### 3.5. Zero-Vehicle Households

**Figure 7** illustrates the zero-vehicle households by Census Block Group in the CTS service area. Approximately 5% of the CTS service area is classified as zero-vehicle household and are largely concentrated in areas near downtown Clarksville, Port Royal, as well as Oak Grove, KY near Fort Campbell.

Figure 7: Zero-Vehicle Households by Block Group (2021 ACS 5-Year Estimates)

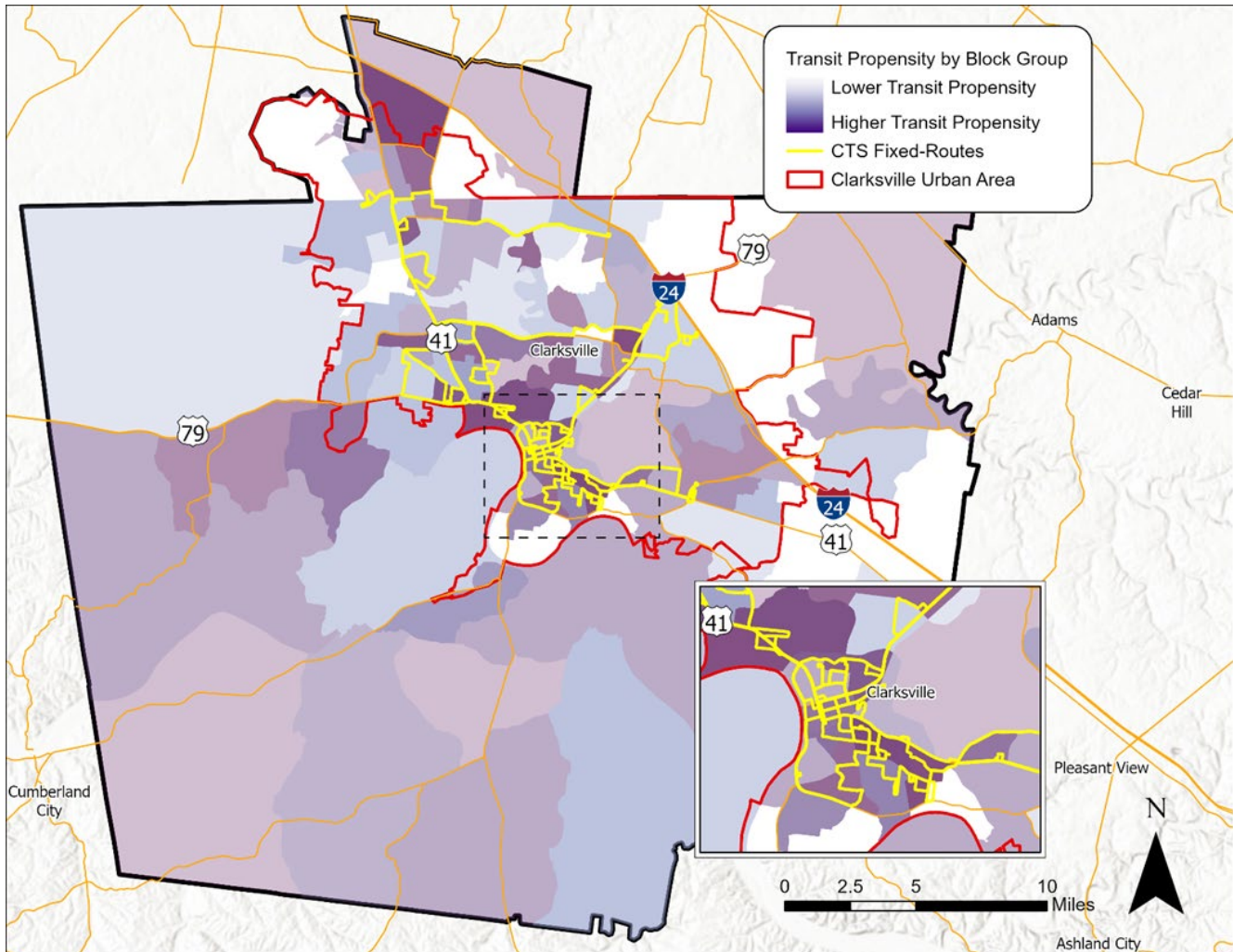




### 3.6. Transit Propensity

Using this demographic information, a transit propensity index overlaying each of the variables can be created to see where residents who are more likely to use CTS fixed-route service may live. **Figure 8** shows where the transit propensity index that was created using the overlay of the demographic variables discussed along with the CTS fixed-route network. Overall, the fixed-route network covers much of the higher transit propensity areas within the Clarksville urban area including areas downtown and north of downtown.

Figure 8: Transit Propensity by Block Group Index



## 4. Systemwide Services Evaluation

The following existing services evaluation for CTS consists of a variety of tasks that are summarized in this section, including a systemwide service analysis. This compiled data along with the route service profiles developed in Section 6, provides the foundation for developing service change alternatives, service policy reviews, and the development of the COA implementation plan.

For the systemwide services evaluation, a trend and peer analysis were completed for CTS using a five-year set of data (FY 2018-2022) to examine select trends for several performance measures. Additionally, a peer review was conducted to compare CTS to similarly situated transit agencies. These assessments provide both timespan-based and cross-sectional overviews of CTS operations that may better inform future service changes.

### 4.1. Trend Analysis

Data obtained from the Federal Transit Administration (FTA) National Transit Database (NTD) for FY 2018 to 2022 was used to examine trends for select performance, service effectiveness, and cost efficiency measures. Three general areas of performance statistics were examined:

- **General Service Measures** – Overall levels of transit service provided by the agency and utilized by its customers.
- **Service Productivity and Coverage** – Number of passengers served per revenue hour of service, how well an agency deploys its resources, and the degree to which service is provided within the service area.
- **Cost Efficiency and Effectiveness** – Assessment of the transit system's financial performance.

This trend analysis spans the COVID-19 pandemic, a significant and disruptive public health emergency where public transit usage across the country declined rapidly. While the recovery is ongoing, the pandemic had considerable impacts on several of the performance measures in this trend analysis. Observed changes between FY 2019 and FY 2021 may relate to the relationship between public policies and customer behavior over the pandemic.

#### 4.1.1. General Service Measures

**Table 2** show the general performance indicators that were measured as part of this analysis. As indicated above, these indicators summarize trends in overall level of service that is provided by CTS. The following trends could be observed using the past 5 years of data:

- **Passenger trips have decreased** by 35.0%, with a significant drop off in ridership occurring in FY20 during the onset of the COVID-19 pandemic and decreasing further since then.
- **Revenue hours have negligibly decreased** by 0.1%, signifying that revenue hours of service have been largely unchanged during the past five years.
- **Total operating expense have increased** by 17.5%, with larger increases being incurred in FY21.
- **Passenger fare revenues have decreased** by 25.9%, with decreases largely mirroring the rate in reductions in passenger trips over the same timeframe.
- **The cost per revenue hour has increased** by 17.7%, with those increases largely mirroring the rate of rises in total operating expense over the same timeframe.



As previously mentioned, public transit use declined significantly during the COVID-19 Pandemic and likely impacted passenger trips between FY 2020 and FY 2021 for CTS. Passenger trips and subsequent fare revenues have not rebounded to their pre-pandemic levels and have continued to decrease. However, the amount of revenue hours of service has remained steady over the same timeframe while operating expenses have increased.

Table 2: General Service Measures

Performance Measure	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Percent Change
Passenger Trips	660,660	648,536	587,661	436,734	429,364	-35.0%
Revenue Hours	71,442	70,801	71,442	72,306	71,374	-0.1%
Total Operating Expense	\$4,805,613	\$4,819,791	\$4,953,922	\$5,366,381	\$5,648,305	17.5%
Passenger Fare Revenues	\$669,191	\$643,263	\$502,675	\$511,398	\$496,071	-25.9%
Cost Per Revenue Hour	\$67.27	\$68.08	\$69.34	\$74.22	\$79.14	17.7%

#### 4.1.2. Service Productivity Measures

**Table 3** shows the service productivity indicators that were measured as part of this analysis. As indicated above, these indicators evaluate how many passengers are served per unit of service, how well resources are deployed, and the overall efficiency of service. The following trends could be observed using the past 5 years of data:

- **Passenger trips per revenue hour have decreased by 35.0%** with decreases in FY20 during the onset of the COVID-19 Pandemic and continuously decreasing the following years.
- **Passenger trips per revenue mile have decreased by 35.9%** mirroring the observed rate of decrease for passenger trips per revenue hour.

These decreases point to decreases in the overall productivity of the CTS fixed-route system, similar to the observed decreases in passenger trips and fare revenue. The decreasing productivity of the CTS fixed-route system has occurred in tandem with the overall increases in total operating budget.

Table 3: Service Productivity Measures

Performance Measure	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Percent Change
Passenger Trips Per Revenue Hour	9.25	9.16	8.23	6.04	6.02	-35.0%
Passenger Trips Per Revenue Mile	0.56	0.55	0.50	0.36	0.36	-35.9%

#### 4.1.3. Cost Efficiency and Effectiveness Measures

**Table 4** shows the cost efficiency indicators that were measured as part of this analysis. As indicated above, these indicators evaluate the system's financial performance in relation to the fixed-route service. The following trends could be observed using the past 5 years of data:

- **Operating expense per passenger trip has increased by 81.0%** signifying that the cost to transport an individual passenger is increasing while the number of passengers is decreasing, with the largest increase occurring between FY20 and FY22.
- **Operating expense per revenue mile has increased by 15.4%** signifying that the cost to operate CTS services per mile has steadily increased over the course of the past five years.
- **Operating expense per revenue hour has increased by 17.6%** mirroring the steady growth in operating expense per revenue mile over the same time frame.
- **Farebox recovery ratio has decreased by 37.0%** showing a steady decrease in the proportion of fares recovered versus CTS's total operating expense.

These indicators show that overall, CTS service is serving fewer potential riders while operating expenses have steadily increased. CTS fixed-route service has trended towards providing service that is less efficient in terms of individual trips, revenue miles, and revenue hours while recovering less operating expenses at the farebox.

Table 4: Cost Efficiency and Effectiveness Measures

Performance Measure	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Percent Change
Operating Expense Per Passenger Trip	\$7.27	\$7.43	\$8.43	\$12.29	\$13.16	81.0%
Operating Expense Per Revenue Mile	\$4.09	\$4.10	\$4.18	\$4.45	\$4.72	15.4%
Operating Expense Per Revenue Hour	\$67.27	\$68.08	\$69.34	\$74.22	\$79.14	17.6%
Farebox Recovery Ratio	13.93	13.35	10.15	9.53	8.78	-37.0%

## 4.2. Peer Review

### 4.2.1. Peer Selection Process

Agency peer reviews are used to assess the efficiency and effectiveness of an agency's operations compared to similarly situated transit agencies. This report compares CTS to six current peers for FY 2021 (the most recent reporting year that data is available for all agencies), based upon existing service characteristics. Peers were determined based on professional judgment of national transit trends and through input from CTS staff. Additional emphasis was placed on finding comparable agencies that operate in similar operating environments. **Table 5** and **Table 6** show the following peers and their service area characteristics that were identified and compared to CTS in terms of general service, service, productivity, and cost efficiency and effectiveness measures:

- Tri-State Transit Authority (TTA): Huntington, West Virginia
- Knoxville Area Transit (KAT): Knoxville, Tennessee
- Fayetteville Area System of Transit (FAST): Fayetteville, North Carolina
- Montgomery Area Transit System (MATS): Montgomery, Alabama
- Greenville Transit Authority (GTS): Greenville, South Carolina
- Waco Transit System (WTS): Waco, Texas

Table 5: CTS Peer Agencies Service Areas Characteristics (FY 2021)

Performance Measure	CTS	TTA	KAT	FAST	MATS	GTA	WTS
Service Area Population	135,471	144,339	190,223	166,900	205,764	202,464	198,361
Service Area Size (Square Miles)	105	92	104	95	135	94	99
Service Area Population Density	1,290	1,569	1,829	1,757	1,524	2,154	2,004
Standard Flat Fare	\$1.50	\$1.00	\$1.00	\$1.25	\$2.00	\$1.50	\$1.50
Fleet Size	18	23	58	18	20	17	16

Table 6: CTS Peer Agencies Service Areas Characteristics Comparisons (FY 2021)

Performance Measure	CTS	Peer Minimum	Peer Maximum	Current Peer Mean	CTS % Difference of Current Mean
Service Area Population	135,471	144,339	205,764	184,675	-26.6%
Service Area Size (Square Miles)	105	92	135	103	1.8%
Service Area Population Density	1,290	1,524	2,154	1,806	-28.6%
Standard Flat Fare	\$1.50	\$1.00	\$2.00	\$1.38	9.1%
Fleet Size	18	16	58	25	-28.9%

#### 4.2.2. General Service Measures Peer Analysis

**Table 7** and **Table 8** demonstrate the general service indicators that were measured as part of this peer analysis. As indicated above, these indicators summarize trends in overall level of service that is provided by CTS and other peer agencies. The following comparisons between CTS's and other peer agencies' general service measures can be observed:

- CTS serves a smaller number of passengers than most of the other peer agencies, despite operating over a similarly sized service area. CTS does however service a less population dense service area than all the other agencies, making it more difficult to reach larger numbers of passengers as compared to the other agencies.
- CTS operates a similar amount of revenue service hours compared to its peers. KAT operates for more than twice the amount of revenue service hours as compared to CTS.
- CTS has the third lowest total operating expense as compared to its peers. Only TTA and WTS have smaller total operating budgets.
- CTS collects a similar amount of passenger fare revenues as compared to its peers, with CTS collecting nearly the same amount as the average fare revenues of its peers combined. FAST in had suspended fare collection during FY2021 but has since reinstated them.
- CTS has a lower cost per revenue hour as compared to all of its peers.

Table 7: CTS Peer Agencies General Service Measures (FY2021)

Performance Measure	CTS	TTA	KAT	FAST	MATS	GTA	WTS
Passenger Trips	436,734	603,743	2,139,001	1,663,501	308,600	558,133	486,612
Revenue Hours	72,306	55,543	204,463	70,189	75,497	64,989	47,180
Total Operating Expense	\$5,366,381	\$4,869,730	\$17,099,118	\$7,550,200	\$6,199,176	\$6,520,536	\$4,230,287
Passenger Fare Revenues	\$511,398	\$789,817	\$460,937	\$3,409*	\$314,393	\$603,028	\$896,489
Cost Per Revenue Hour	\$74	\$88	\$84	\$108	\$82	\$100	\$90

\*Fayetteville Area System Transit (FAST) suspended fares in March 2020 and reinstated them in July 2023.

Table 8: CTS Peer Agencies General Service Measures Comparisons (FY2021)

Performance Measure	CTS	Peer Minimum	Peer Maximum	Current Peer Mean	CTS % Difference of Current Mean
Passenger Trips	436,734	308,600	2,139,001	959,932	-54.5%
Revenue Hours	72,306	55,543	204,463	86,310	-16.2%
Total Operating Expense	5,366,381	\$4,230,287	\$17,099,118	7,744,841	-30.7%
Passenger Fare Revenues	\$511,398	*\$3,409	\$896,489	\$511,346	0.01%
Cost Per Revenue Hour	\$74	\$82	\$108	\$92	-19.6%

\*Fayetteville Area System Transit (FAST) suspended fares in March 2020 and reinstated them in July 2023

#### 4.2.3. Service Productivity Measures Peer Analysis

Table 9 and Table 10 shows the service productivity indicators that were measured as part of this analysis. As indicated above, these indicators evaluate how many passengers are served per unit of service, how well resources are deployed, and the overall efficiency of service. The following comparisons between CTS and its peer agencies can be observed:

- CTS serves less passengers per revenue hour compared to all of its peers other than MATS.
- Similarly, CTS serves less passengers per revenue mile compared to all of its peers other than MATS.

Table 9: CTS Peer Agencies Service Productivity Measures (FY2021)

Performance Measure	CTS	TTA	KAT	FAST	MATS	GTA	WTS
Passenger Trips per Revenue Hour	6.04	10.87	10.46	23.70	4.09	8.59	10.00
Passenger Trips per Revenue Mile	0.36	0.69	0.84	1.63	0.25	0.60	0.66



Table 10: CTS Peer Agencies Service Productivity Measures Comparison (FY2021)

Performance Measure	CTS	Peer Minimum	Peer Maximum	Current Peer Mean	CTS % Difference of Current Mean
Passenger Trips per Revenue Hour	6.04	4.09	23.70	11.29	-39.6%
Passenger Trips per Revenue Mile	0.36	0.25	1.63	0.78	-45.5%

#### 4.2.4. Cost Efficiency and Effectiveness Peer Analysis

**Table 11** and **Table 12** demonstrate cost efficiency and effectiveness measures that indicate how well CTS is able to allocate resources across its fixed-route service. The following comparisons between CTS and its peer agencies can be observed:

- CTS has a higher operating expense per passenger trip compared to its peer agencies, with only MATS being higher.
- CTS has a lower operating expense per revenue mile compared to all peer agencies.
- Similarly, CTS has a lower operating expense per revenue hour compared to its peer agencies.
- CTS has a higher farebox recovery ratio compared to most of its peers, indicating that CTS is more reliant on fares compared to most of its peers.

Table 11: CTS Peer Agencies Cost and Efficiency Measures (FY2021)

Performance Measure	CTS	TTA	KAT	FAST	MATS	GTA	WTS
Operating Expense per Passenger Trip	\$12.29	\$8.07	\$7.99	\$4.54	\$20.09	\$11.68	\$8.69
Operating Expense per Revenue Mile	\$4.45	\$5.54	\$6.74	\$7.41	\$5.01	\$7.04	\$5.71
Operating Expense per Revenue Hour	\$74.22	\$87.68	\$83.63	\$107.57	\$82.11	\$100.33	\$89.66
Farebox Recovery Ratio	9.5%	16.2%	2.7%	0.1%	5.1%	9.3%	21.2%

Table 12: CTS Peer Agencies Cost and Efficiency Measures (FY2021)

Performance Measure	CTS	Peer Minimum	Peer Maximum	Current Peer Mean	CTS % Difference of Current Mean
Operating Expense per Passenger Trip	\$12.29	\$4.54	\$20.09	\$10.18	5.2%
Operating Expense per Revenue Mile	\$4.45	\$5.01	\$7.41	\$6.24	-36.8%
Operating Expense per Revenue Hour	\$74.22	\$82.11	\$107.57	\$91.93	-26.0%
Farebox Recovery Ratio	9.5%	0.1%	21.2%	9.1%	2.2%

## **5. Public Involvement Summary**

This chapter details the public involvement efforts that were undertaken during the development of the COA. The public involvement efforts included stakeholder meetings, an on-line and in-person public survey, and a public meeting to present the draft short- and long-term recommendations included in this COA.

### **5.1. Stakeholder Meetings**

A series of stakeholder meetings were held during the development of the COA. The purpose of these meetings was to gather input and feedback from specific stakeholders about the current CTS system and identify future needs for the CTS service. The following summarizes the stakeholder meetings held during the COA process.

#### **5.1.1. City of Clarksville Mayor**

The purpose of the meeting (08/01/2023) was to provide an overview of the COA project and to seek any input on current and future CTS operations. During the meeting additional stakeholders were identified and were subsequently contacted as part of the COA process.

#### **5.1.2. Clarksville Housing Authority**

The purpose of the meeting (08/01/2023) was to ask questions and gain any insight from the Clarksville Housing Authority (CHA) on potential improvements to CTS. The meeting focused on current issues and concerns with CTS service at the residential developments owned and managed by CHA.

#### **5.1.3. Regional Planning Commission**

The purpose of the meeting (08/15/2023) was to ask questions and gain insight about recently approved R1A - R6 zoning cases and new office and commercial development that could potentially attract new transit customers/riders. The meeting focused on recently approved residential and commercial developments, future residential and commercial developments, as well as future land use policies being considered by the Regional Planning Commission.

#### **5.1.4. Clarksville Area Chamber of Commerce**

The purpose of the meeting (08/15/2023) was to ask questions and gain insight about new office, commercial, and industrial development that could potentially attract new transit customers/riders. The meeting involved representatives from the Chamber of Commerce, the Economic Development Council, and the Industrial Development Board. The meeting focused on an interest in providing transit service to the growing industrial area on the northeast side of Clarksville, new development planned in downtown near the recently opened F&M Bank Arena, and anticipated development (including a potential new Veterans Administration Clinic) near the Tennova Healthcare hospital.

#### **5.1.5. Nashville State Community College**

The purpose of the meeting (09/25/2023) was to ask questions and gain insight from Nashville State Community College (NSCC) on how staff and students currently use CTS and provide an opportunity to discuss potential improvements to CTS services. The meeting focused on moving the existing bus stop location onto the NSCC campus to provide easier/safer access to CTS services.

In addition to the above referenced stakeholder meetings, Mike Ringgenberg (CTS Director) also met with the Austin Peay State University Parking & Transportation Office to discuss the Peay Pickup service. Coordination with the Clarksville-Montgomery County School System (CMCSS) was initiated, but it was ultimately determined that there was limited interaction between CTS and CMCSS.

## 5.2. Public Survey

A public survey was posted on the City of Clarksville's website to elicit community feedback on the current CTS service and to help guide the future CTS service. A total of 27 respondents completed the on-line survey between July – November 2023. Sixteen (59%) out of the total 27 respondents indicated that they used CTS services. In addition to the on-line survey, an in-person survey of CTS riders was conducted on Wednesday, August 2, 2023 at the Downtown Transit Center in the morning (9:00 AM – 11:30 AM) and afternoon (1:00 PM – 3:30 PM). A total of 29 people completed the survey. All 29 respondents indicated that they were regular riders of the CTS service.

Based on the survey results, the total survey respondents (19%) and in-person survey respondents (25%) were most interested in earlier or later service. The on-line survey respondents (16%) indicated other reasons that would make them use CTS or use CTS more frequently.

The responses from all 56 on-line and in-person respondents is summarized in Appendix A.

## 5.3. Public Meeting

A public meeting was held on Tuesday, December 19, 2023 from 5:30 PM – 7:30 PM in the Small Meeting Room at the Clarksville-Montgomery County Public Library (350 Pageant Lane, Suite 501, Clarksville, Tennessee 37040) which is served by both CTS Routes 5 and 6. The purpose of the public meeting was to discuss the proposed short- and long-term recommendations included in the draft COA. A public notice of the meeting was published in the *Leaf Chronicle* newspaper and online at [www.theleafchronicle.com](http://www.theleafchronicle.com). In addition, emails were sent in advance of the meeting to the stakeholders identified earlier in this section. A copy of the public notice and advertisement are included in Appendix B.

The public meeting was an open house format that allowed community members to come and go during the two-hour duration of the meeting. Mike Ringgenberg (CTS Director), several CTS staff, and members of the consultant team were present to answer questions from the public and stakeholders. Large display boards provided an overview of the short- and long-term recommendations that were proposed for inclusion in the COA. Copies of the display boards are included in Appendix B.

## 6. Route-by-Route Service Characteristics

Analyzing the operating characteristics at a route level to understand their proficiencies and deficiencies is a central component to developing service alternatives, policies, and an implementation plan at the core of a COA. Individual service profiles present key service statistics and performance indicators as a visual summary of strengths and weaknesses for each route in the CTS system. **Table 13** summarizes the data that was collected and utilized for the purposes of both systemwide and route-by-route operating characteristics for the CTS fixed-route system.

Table 13: Existing Services Data and Timeframes

Route-Specific Data	Timeframe
Service Period	FY2022
Frequency	FY2022
Ridership	FY2022
Revenue Hours	FY2022
Vehicle Requirement	FY2022
Operating Expense	FY2022
On-Time Performance	May – July 2023
Trips per Hour	May – July 2023
Cost per Trip	May – July 2023
Average Fare	May – July 2023
Subsidy per Trip	May – July 2023

### 6.1. Service Area Description and Evaluation

The CTS existing fixed-route bus service network consists of 8 total routes that serve the Clarksville Urban Area. The Clarksville Urban Area consist largely of the Cities of Clarksville, TN and Oak Grove, KY, along with the Fort Campbell Military Installation. Additionally, CTS operates an Americans with Disabilities Act (ADA) compliant paratransit service (“The Lift”) that serves qualified disabled and elderly passengers within ¾ miles on either side of the CTS fixed-route system.

Service is provided Monday-Saturday all year round. Typical weekday service begins between 4:40 A.M. to 6:30 A.M. and ends between 8:20 P.M. to 8:50 P.M. Saturday service is similar to weekdays, only with the Route 1 beginning at 6:40 A.M. instead of 4:40 A.M. and the Route 8 ending at 7:50 P.M. instead of 8:50 P.M. Additionally, Routes 3 and 6 operate at a 60-minute Frequency all day on Saturdays compared to 30-minute frequencies on weekdays. A summary CTS’s individual route levels of service is provided in **Table 14**.

## 6.2. Services Evaluation

The evaluation of existing services is presented in a series of tables and graphics, showing the route-by-route service characteristics for CTS fixed-routes. Tables and graphics are organized into two (2) major categories:

- Annual Performance by Route
  - **Table 14:** Route Level of Service
  - **Table 15:** Route Service Statistics
  - **Table 16:** Route Performance Measures
- Individual Route Profiles:
  - Page 32 - 39 (**Figure 9** to **Figure 16**)

Understanding each route's individual operating characteristics is central to the COA process. It provides an understanding of how different routes compare to one another and provide a baseline of where potential improvements can be made. Additionally, each route profile provides a stop-by-stop visualization of the average daily boardings (on's) and alightings (off's). This shows where areas of higher activity exist along each route. The aim of these route profiles is to provide CTS staff and leadership diagnostic information that can inform future service operations and planning decisions. Some key questions, typically inquired upon during the COA process, can be informed throughout this process:

- Where is service performing well and underperforming?
  - Routes that have higher trips per hour and/or lower costs per trip indicate better performing routes in relation to others. Additionally, route segments that contain stops or segments of stops that have higher daily activity in terms of on's and off's indicate where service is more utilized and should be further targeted for service enhancements.
- What stops are most productive in terms of average daily activity?
  - As previously mentioned, each route profile demonstrates the average total activity for each of its stops. The activity represents only the on's and off's for that particular route in instances where different routes share the same stop (i.e., transfer points, CTS Downtown Station). This data can allow for future decisions to be made regarding enhancements for high activity stops or the removal of low activity ones.
- Is CTS service reaching transportation disadvantaged communities?
  - Each route profile is overlaid with the transit propensity index that was described in Section 3 of this report. By doing this, the distribution of historically transportation disadvantaged groups can be understood in relation to each route. Assessments can be made as to whether individual routes are reaching those groups or if more efforts need to be done by CTS.

Through answering these questions, potential route realignments and the reallocation of transit services can be more finely targeted, allowing for a more efficient delivery of transit services. The data discussed as part of these route profiles is defined below to aid in understanding each route profile. Several of these definitions are drawn from a variety of sources such as State DOT transit planning reports and other publications.



## Route Profile Characteristics

- *Route Level of Service*
  - **Service Period (i.e., service span):** The daily hours of service for a specific route.
  - **Service Frequency (i.e., headway):** How often a vehicle arrives at a location within a given timeframe.
  - **Number of Trips:** The number of individual roundtrips that a bus makes for a given route within a specified timeframe in a day.
- *Annual Route Service Statistics*
  - **Ridership:** The Annual number of passengers that board onto a route's transit vehicle. Trips are counted each time a passenger boards a bus on the CTS system.
  - **Revenue Hours:** The total number of hours a revenue service vehicle (i.e., a bus on a route) operates during a route's service span.
  - **Operating Expense:** The reported total administrative, maintenance, and operations costs that go into an individual route's operations.
  - **Revenue:** The total money that is generated by fares, subsidies, and non-transportation funds per route.
  - **Vehicle Requirement:** The total number of vehicles needed to operate on a route given route frequencies and trip lengths.
- *Route Performance Measures*
  - **On-Time Performance (OTP):** The percentage of arrivals and/or departures for stops along a specific route that are within a transit agency's OTP standard. In the case of CTS, an arrival time at a stop is considered on-time if it is within the range of one minute early or five minutes late.
  - **Trips per Hour:** The ratio of a route's annual ridership and its annual revenue hours of service. This metric is utilized as a key indicator of a route's productivity.
  - **Cost per Trip:** The operating expenditures divided by the total annual ridership per route. This metric is utilized as a key indicator of a route's cost efficiency in transporting passengers.
  - **Average Fare:** The ratio of systemwide passenger fare revenues divided by the total number of systemwide passengers.
  - **Subsidy per Trip:** The difference between a route's cost per trip and the systemwide average fare. This is utilized to represent the cost per passenger trip that the transit agency needs to expend.
  - **Route Length (Miles):** The roundtrip length in miles for a route. This length along with speed assumptions for the route can help inform whether service changes are feasible for a route's trip to continue to operate within its service period.

Table 14: Route Level of Service (FY 2022)

Route Number	Route Name	Weekday Service Span	Weekday Service Frequency	Weekday Number of Trips	Saturday Service Span	Saturday Service Frequency	Saturday Number of Trips
Route 1	Fort Campbell	4:40 AM - 8:50 PM	60 Minutes	18	6:40 AM - 8:50 PM	60 Minutes	15
Route 2	Tiny Town Road	6:30 AM - 8:20 PM	60 Minutes	13	7:30 AM - 8:20 PM	60 Minutes	12
Route 3	Cunningham Loop	6:00 AM - 8:50 PM	60 Minutes*	27	7:00 AM - 8:50 PM	60 Minutes	14
Route 4	Peachers Mill Road	6:00 AM - 8:50 PM	60 Minutes	15	7:00 AM - 8:50 PM	60 Minutes	14
Route 5	Hilldale	5:20 AM - 8:50 PM	60 Minutes	17	6:20 AM - 8:50 PM	60 Minutes	16
Route 6	Madison Street	6:00 AM - 8:50 PM	30 Minutes (6:00 AM - 6:00 PM) 60 Minutes (6:00 PM - 8:50 PM)	27	7:00 AM - 8:50 PM	60 Minutes	14
Route 7	Governor Square Mall	6:00 AM - 8:50 PM	30 Minutes (6:00 AM - 6:30 PM) 60 Minutes (6:30 PM - 8:50 PM)	28	7:00 AM - 8:50 PM	30 Minutes (6:00 AM - 6:30 PM) 60 Minutes (6:30 PM - 8:50 PM)	26
Route 8	101 Express/Hospital	5:00 AM - 8:50 PM	60 Minutes	16	6:00 AM - 7:50 PM	60 Minutes	13

\*As of November 13, 2023, Route 3 operates every 60 minutes instead of every 30 minutes due to an on-going CTS bus operating staff shortage. This change will be reevaluated at a later date by CTS operations staff.

Table 15: Annual Route Service Statistics (FY 2022)

Route Number	Route Name	Ridership	Revenue Hours	Operating Expense	Revenue	Vehicle Requirement
Route 1	Fort Campbell	62,680	9,733	\$ 770,270	\$ 72,708.80	2
Route 2	Tiny Town Road	48,492	7,918	\$ 626,631	\$ 56,250.72	2
Route 3	Cunningham Loop	57,907	8,116	\$ 642,300	\$ 67,172.12	2
Route 4	Peachers Mill Road	23,961	4,570	\$ 361,670	\$ 27,794.76	1
Route 5	Hilldale	50,537	10,817	\$ 856,018	\$ 58,622.92	2
Route 6	Madison Street	74,397	8,116	\$ 642,300	\$ 86,300.52	2
Route 7	Governor Square Mall	59,527	8,782	\$ 695,007	\$ 69,051.32	2
Route 8	101 Express/Hospital	33,949	9,519	\$ 753,294	\$ 39,380.84	2

Table 16: Route Performance Measures (FY 2022)

Route Number	Route Name	On Time Performance	Trips Per Hour	Cost Per Trip	Average Fare	Subsidy Per Trip	Route Length (Miles)
Route 1	Fort Campbell	76%	6.4	\$ 12.29	\$ 1.16	\$ 11.13	32.04
Route 2	Tiny Town Road	66%	6.1	\$ 12.92	\$ 1.16	\$ 11.76	39.47
Route 3	Cunningham Loop	77%	7.1	\$ 11.09	\$ 1.16	\$ 9.93	16.86
Route 4	Peachers Mill Road	78%	5.2	\$ 15.09	\$ 1.16	\$ 13.93	16.59
Route 5	Hilldale	67%	4.7	\$ 16.94	\$ 1.16	\$ 15.78	30.68
Route 6	Madison Street	70%	9.2	\$ 8.63	\$ 1.16	\$ 7.47	16.39
Route 7	Governor Square Mall	61%	6.8	\$ 11.68	\$ 1.16	\$ 10.52	16.61
Route 8	101 Express/Hospital	64%	3.6	\$ 22.19	\$ 1.16	\$ 21.03	38.60

Figure 9: Route 1 (Fort Campbell) Profile

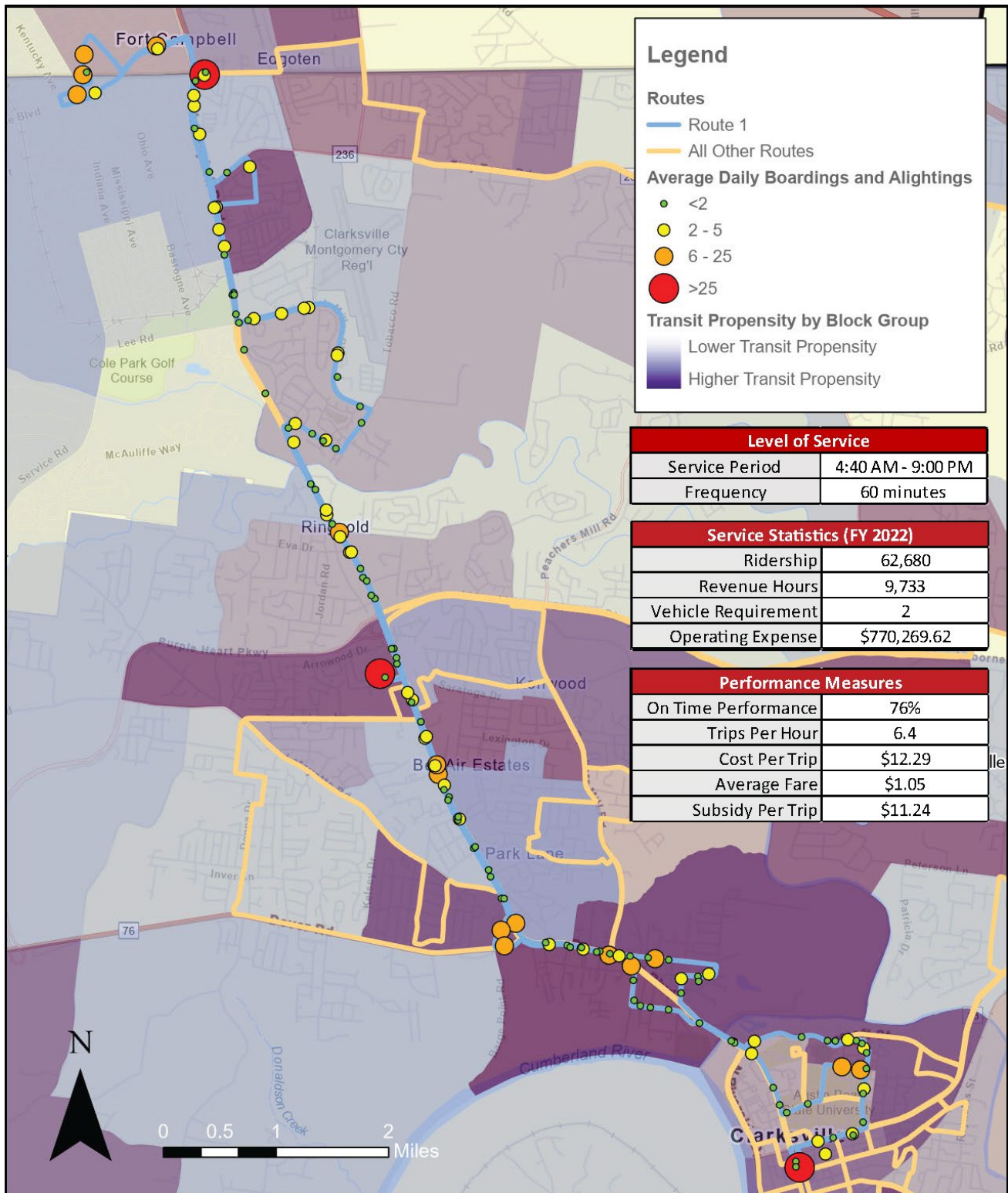




Figure 10: Route 2 (Tiny Town Road) Profile

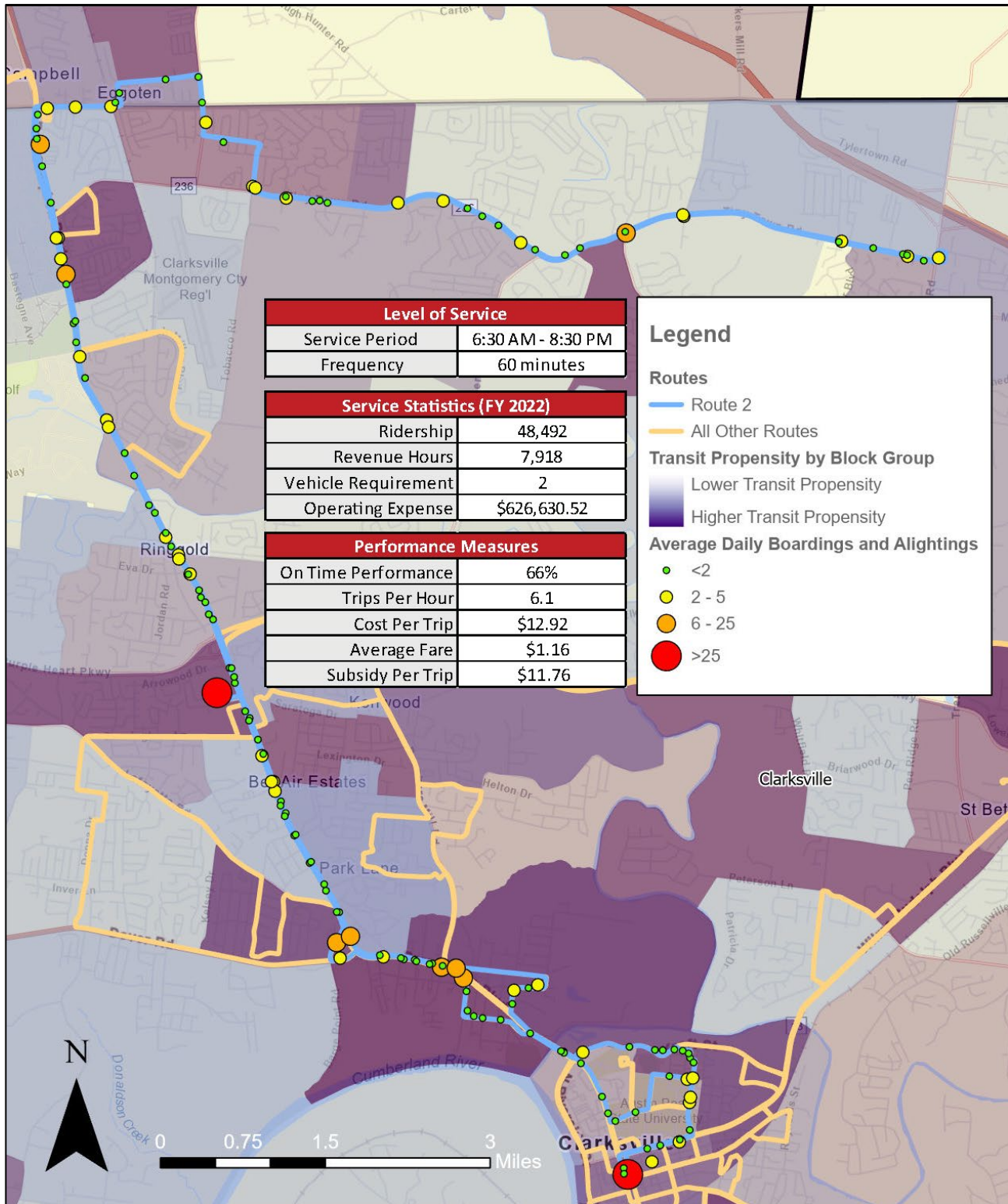


Figure 11: Route 3 (Cunningham Loop) Profile

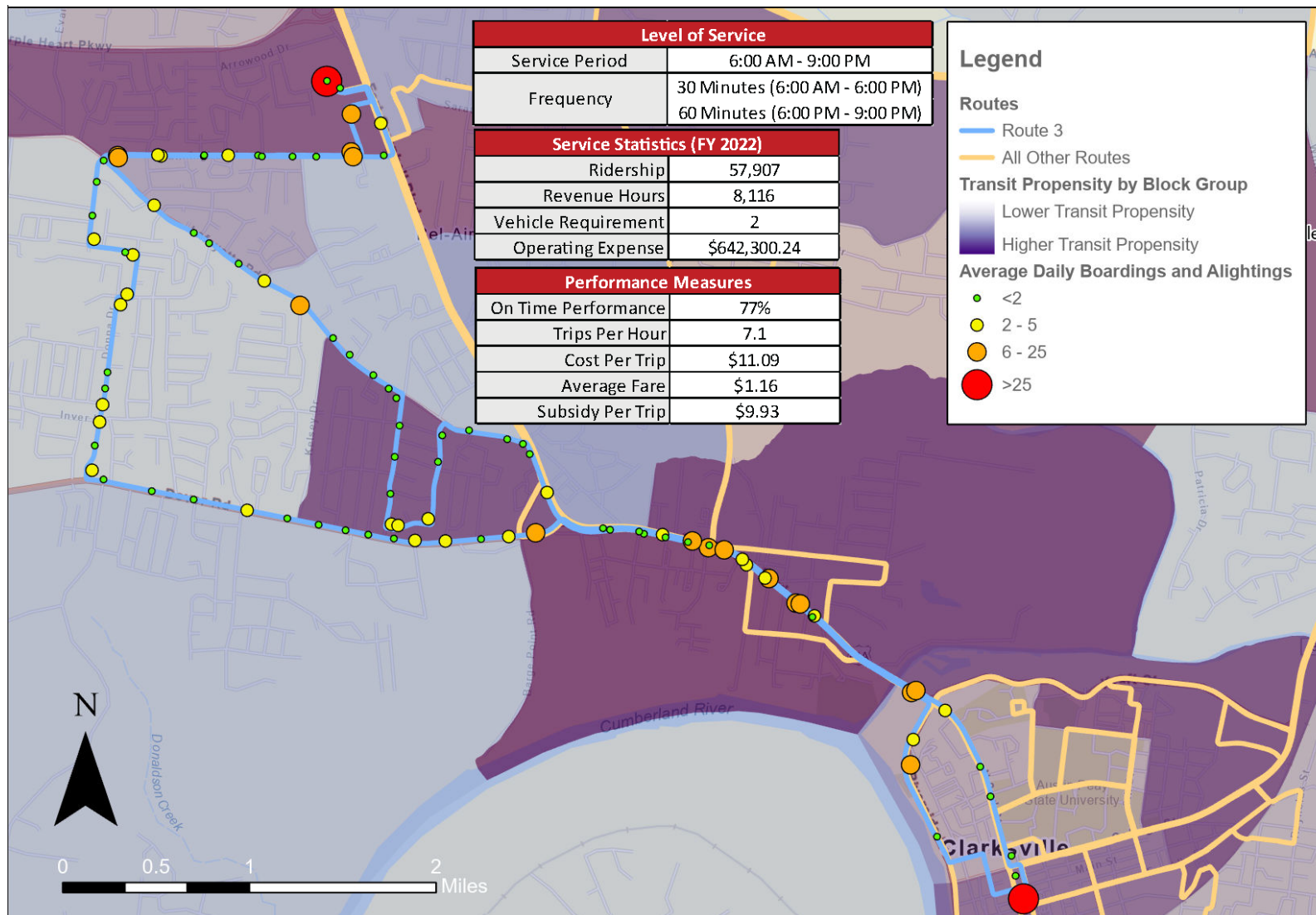


Figure 12: Route 4 (Peachers Mill Road) Profile

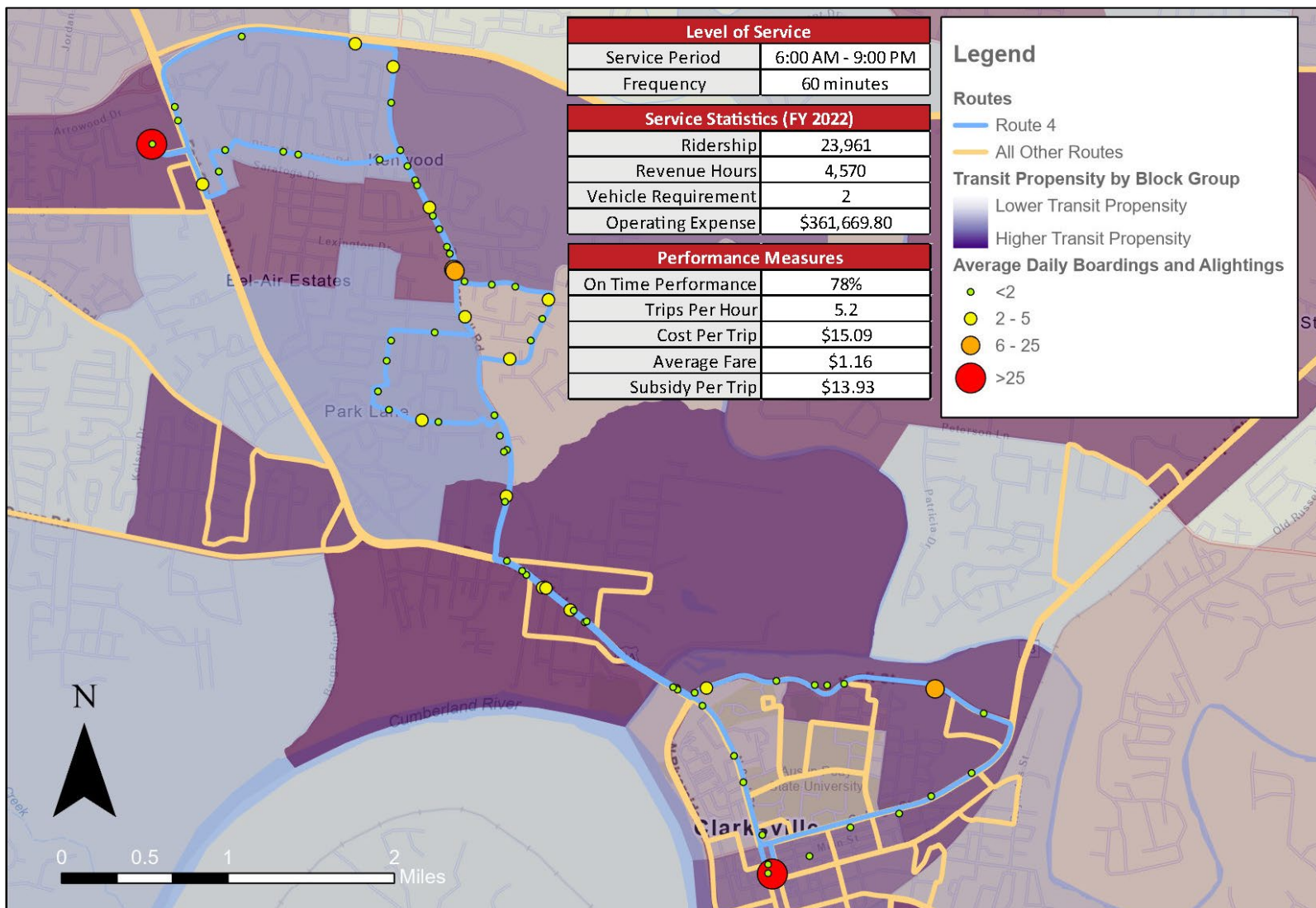










Figure 15: Route 7 (Governor Square Mall) Profile

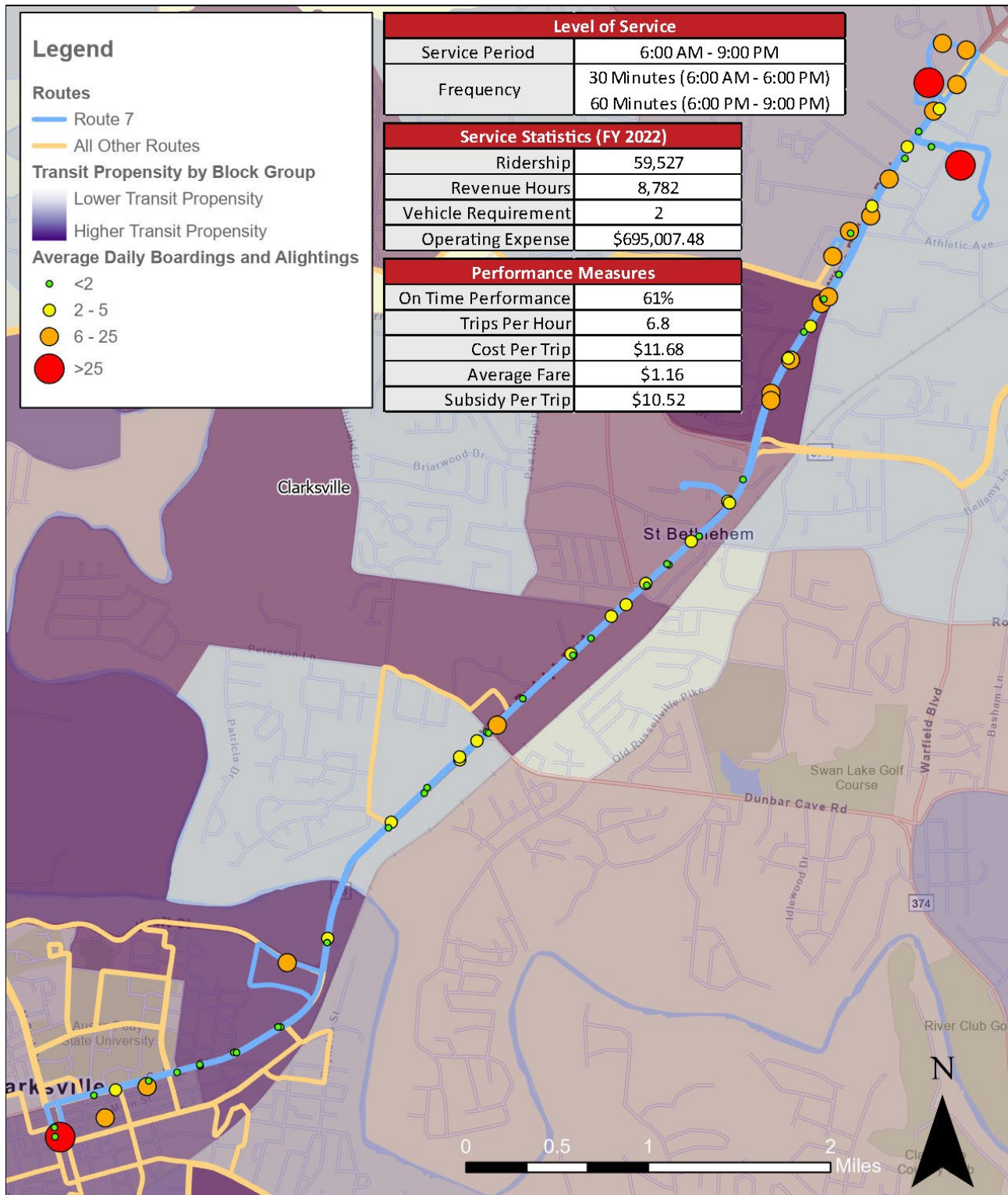
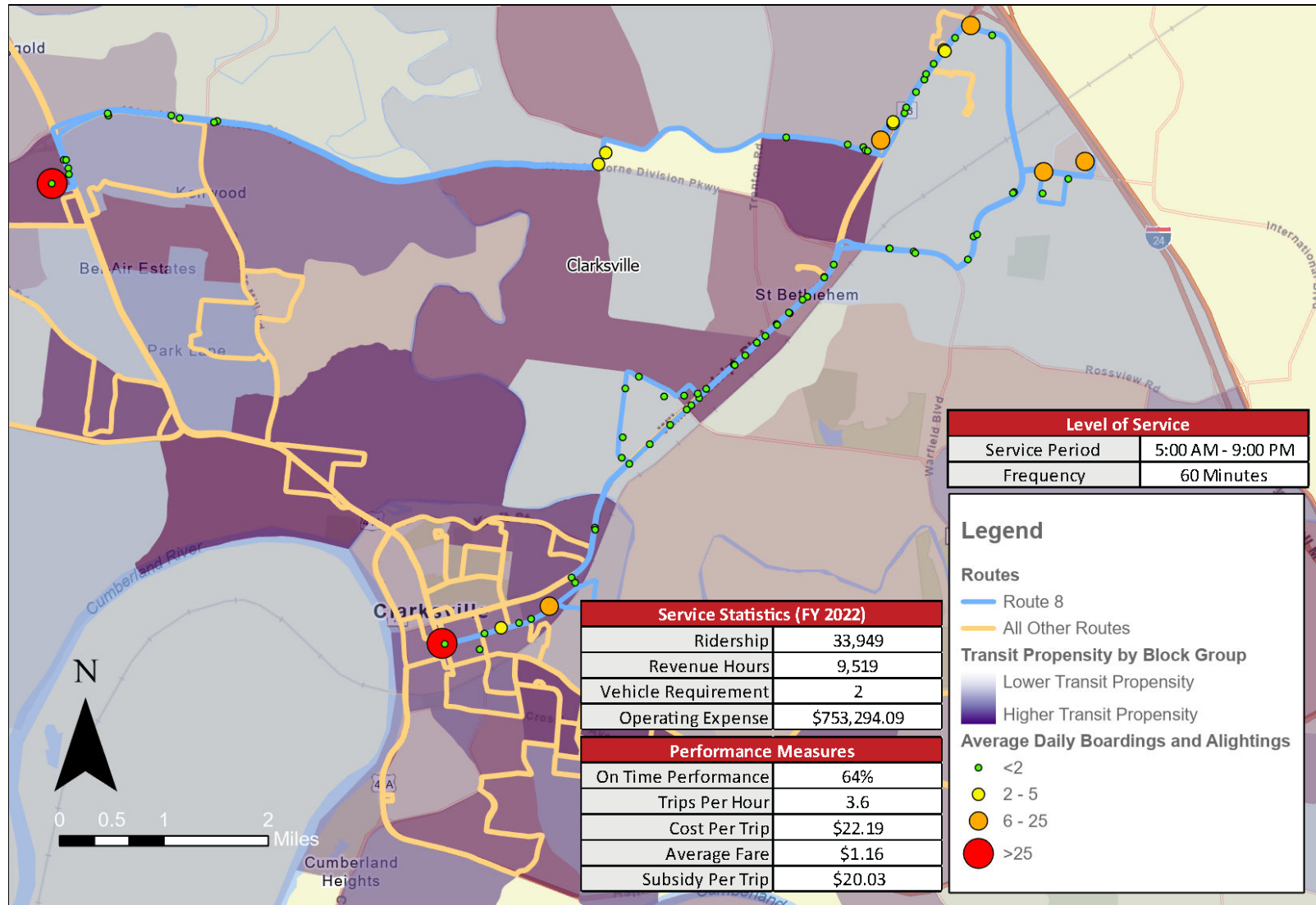


Figure 16: Route 8 (Express/Hospital) Profile



## 7. Short and Long-Term Service Alternatives

The short and long-term service alternatives discussed in this COA were developed through an extensive process of existing conditions review, stakeholder engagements, and an analysis of route-by-route performance indicators. The primary goal of the short-term service alternatives was to consider changes that would help more efficiently deploy CTS resources across its system while ensuring that existing CTS riders still have reliable service to the places they need to go. The short-term changes that were proposed were cost neutral overall, meaning there were no significant changes in revenue hours or total operating costs.

Additionally, long-term service alternatives were proposed to consider future service expansions to CTS operations. Proposed route extensions and new services were considered to provide greater connectivity across the Clarksville Urban Area. Service expansions including added Sunday service and earlier and later route operating hours were also considered to provide CTS riders greater flexibility in travel and potentially attract new riders as well.

### 7.1. Proposed Service Modifications

Preliminary service recommendations were prepared and are summarized in **Table 17**. Using the information collected from the systemwide and route-by-route analyses, proposed route configuration changes were developed that emphasized prioritized service along high activity route segments and trip generators while reducing service on low activity ones. To this end, the route profiles providing key route performance indicators and stop-level ridership were essential in determining these recommendations. Long-term service recommendations were developed using insights from key community stakeholders and public engagement that identified visions for service enhancements for the CTS system.

#### 7.1.1. Preliminary Short-Term Proposed Modifications

The preliminary short-term service changes were developed on a route-by-route basis and are presented graphically below in **Figure 17** through **Figure 23**. On October 5, 2023, and November 2, 2023, CTS staff workshops were held to refine these lists. Route modifications were made for 6 of the 8 primary CTS routes, with no changes being proposed for Route 3 (Cunningham Loop) and 6 (Madison Street).

Table 17: Proposed Short-Term Route Service Changes

Route Number	Route Name	Proposed Route Modifications
Route 1	Fort Campbell	<ul style="list-style-type: none"> <li>Keep service on Downtown/Campus Deviations</li> <li>Remove service on Oak Street and B Street</li> <li>NB travels via Market &amp; Chapel SB travels via Fort Campbell Blvd.</li> </ul>
Route 2	Tiny Town Road	<ul style="list-style-type: none"> <li>Remove Austin Peay University and Kraft deviations</li> <li>Enter/Exit via 2<sup>nd</sup> Street</li> <li>Remove Pembroke &amp; County Line Deviation (Eliminated service in Oak Grove/Fort Campbell)</li> </ul>
Route 3	Cunningham Loop	<ul style="list-style-type: none"> <li>No route changes proposed</li> </ul>
Route 4	Peachers Mill Road	<p><b>Option A:</b></p> <ul style="list-style-type: none"> <li>Connect to Neighborhood Walmart (Meet with Route 8)</li> <li>Remove Pollard Loop</li> <li>Remove Pine Mountain deviation</li> <li>Remove service on College/Kraft</li> </ul> <p><b>Option B:</b></p> <ul style="list-style-type: none"> <li>Two-way service on Kraft</li> <li>Remove Pine Mountain deviation</li> </ul>
Route 5	Hilldale	<p><b>Option A:</b></p> <ul style="list-style-type: none"> <li>Remove Golf View Place, McCan Drive, Glendale Drive, and Vista Lane</li> <li>Remove Woody Hill Loop</li> <li>Remove Senior Center Loop – Ajax Turner Center after hours</li> </ul> <p><b>Option B</b></p> <ul style="list-style-type: none"> <li>Same changes as Option A route changes</li> <li>Remove operations on 2<sup>nd</sup> and Riverside loop</li> <li>Extend to Exit 11 (Greyhound Station)</li> </ul>
Route 6	Madison Street	<ul style="list-style-type: none"> <li>No route changes proposed</li> </ul>
Route 7	Governor Square Mall	<ul style="list-style-type: none"> <li>Discontinue Industrial Loop</li> <li>Discontinue service at Kmart (At Home) shopping center later in day</li> <li>Enter/Exit Governors Square Mall NB via Edgewood Place and Best Western Drive</li> </ul>
Route 8	101 Express/Hospital	<p><b>Option A:</b></p> <ul style="list-style-type: none"> <li>Discontinue Driver's License office deviation</li> <li>Serve Nashville State Community College SB</li> </ul> <p><b>Option B</b></p> <ul style="list-style-type: none"> <li>Same changes as Option A route changes</li> <li>No longer run on 101<sup>st</sup> Airborne, serve Tennova Healthcare and At Home then go SB via Wilma Rudolph</li> </ul>



Figure 17: Route 1 (Fort Campbell) Preliminary Modifications

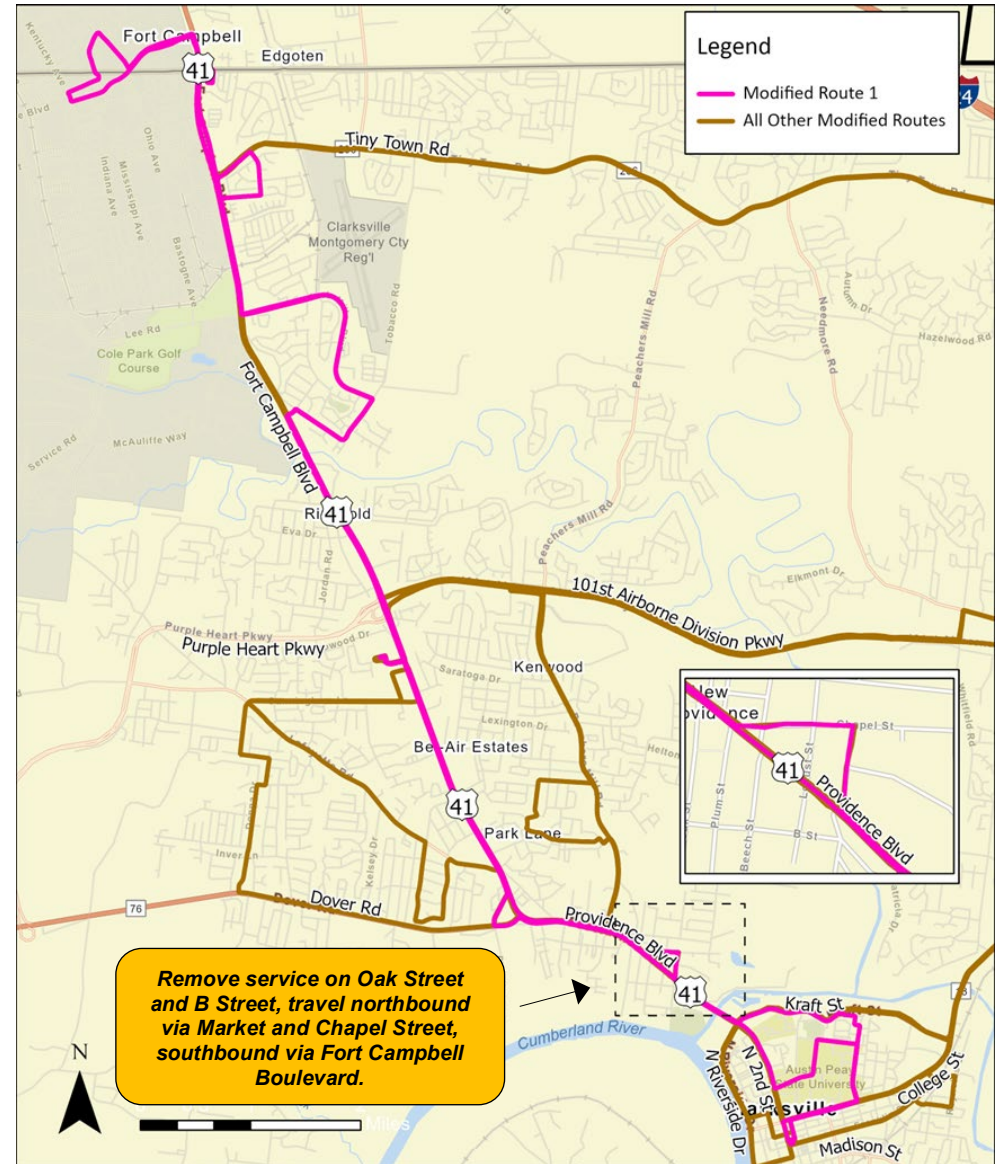
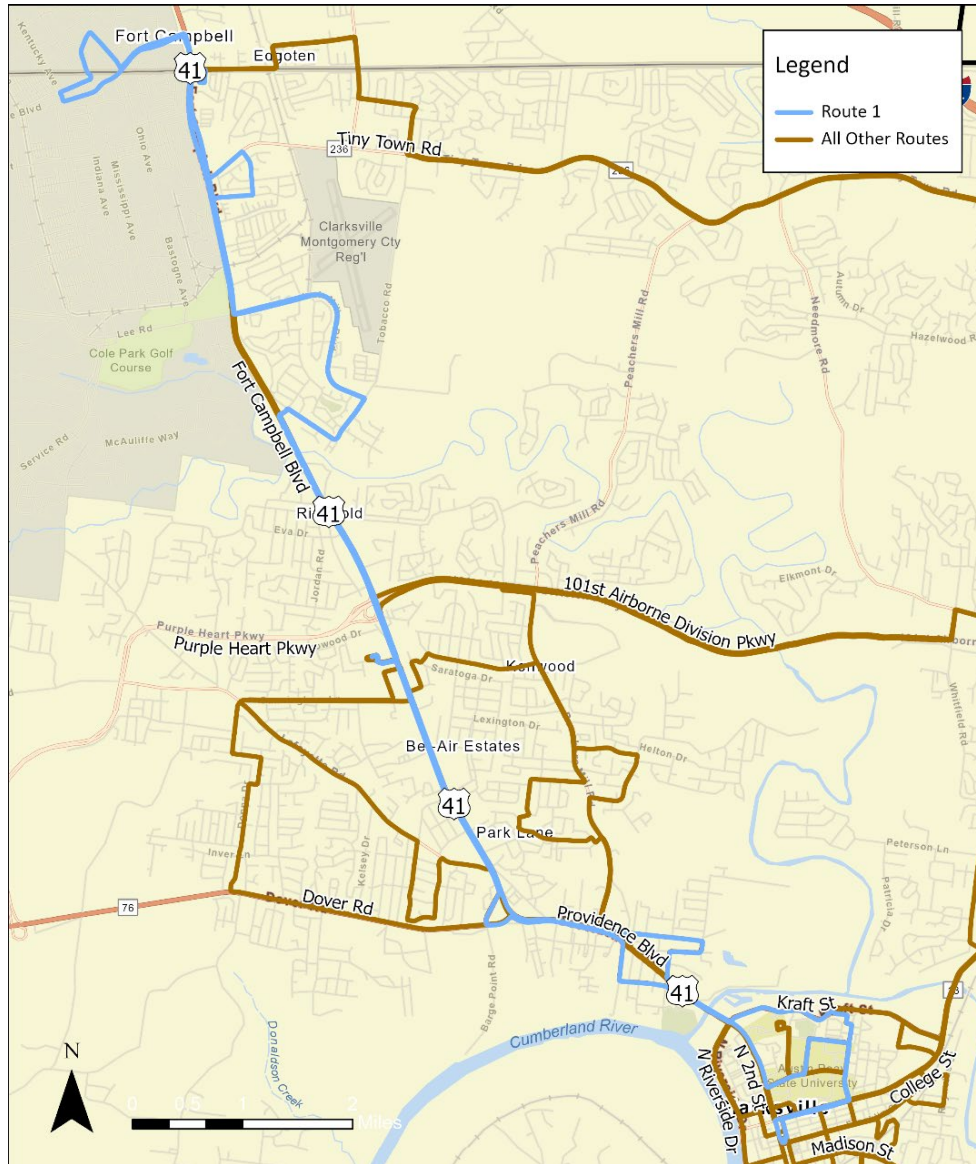




Figure 18: Route 2 (Tiny Town Road) Preliminary Modifications

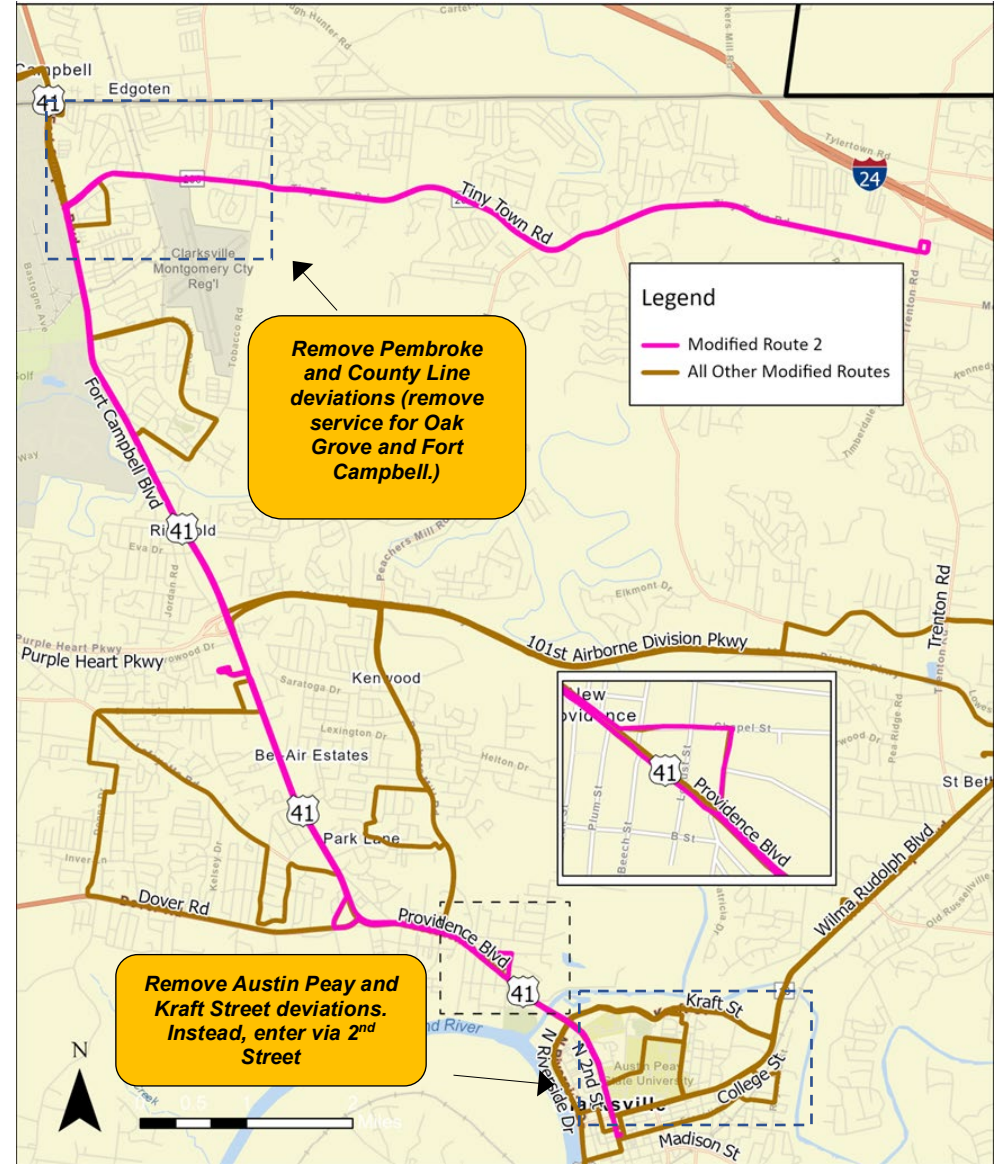
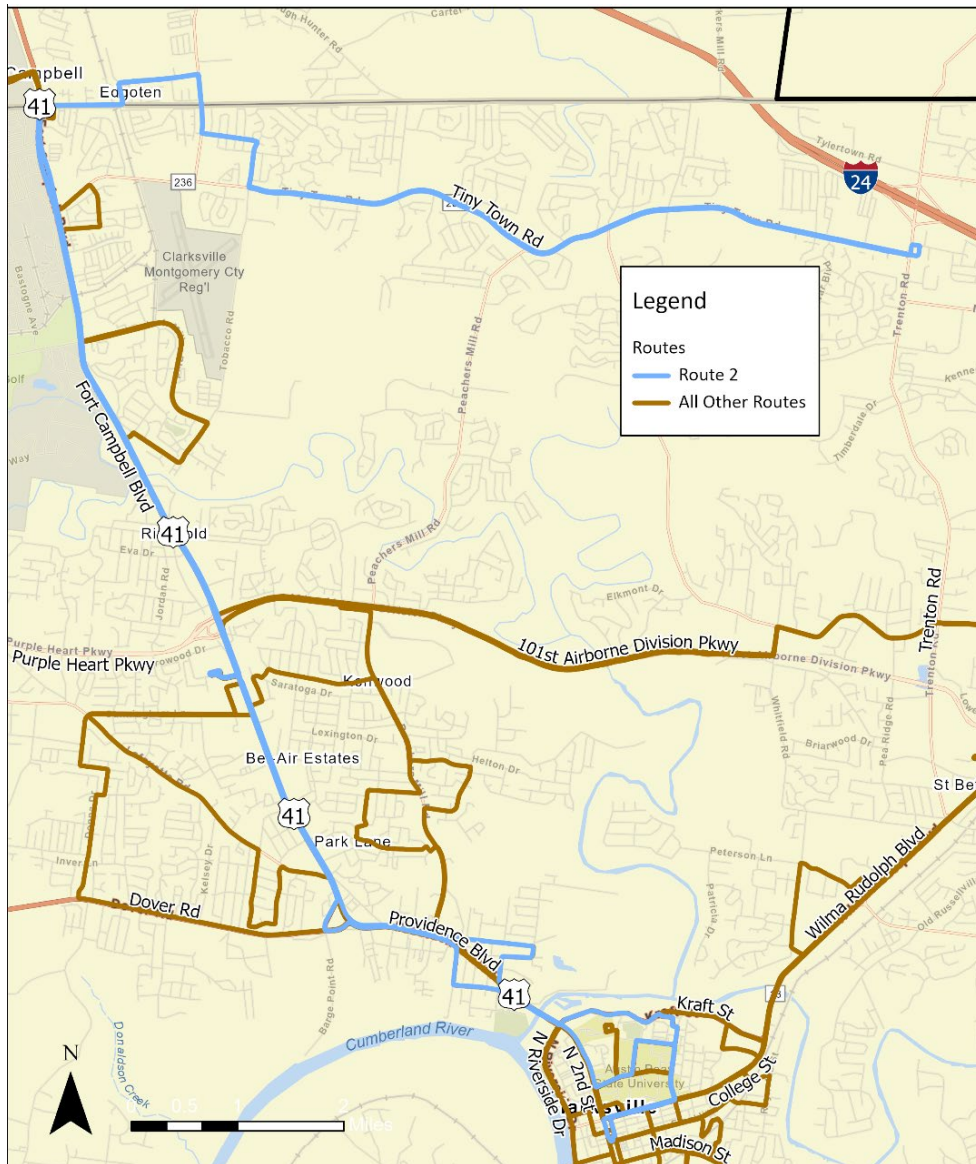


Figure 19: Route 4 (Peachers Mill Road) Preliminary Modifications (Continues to Next Page)

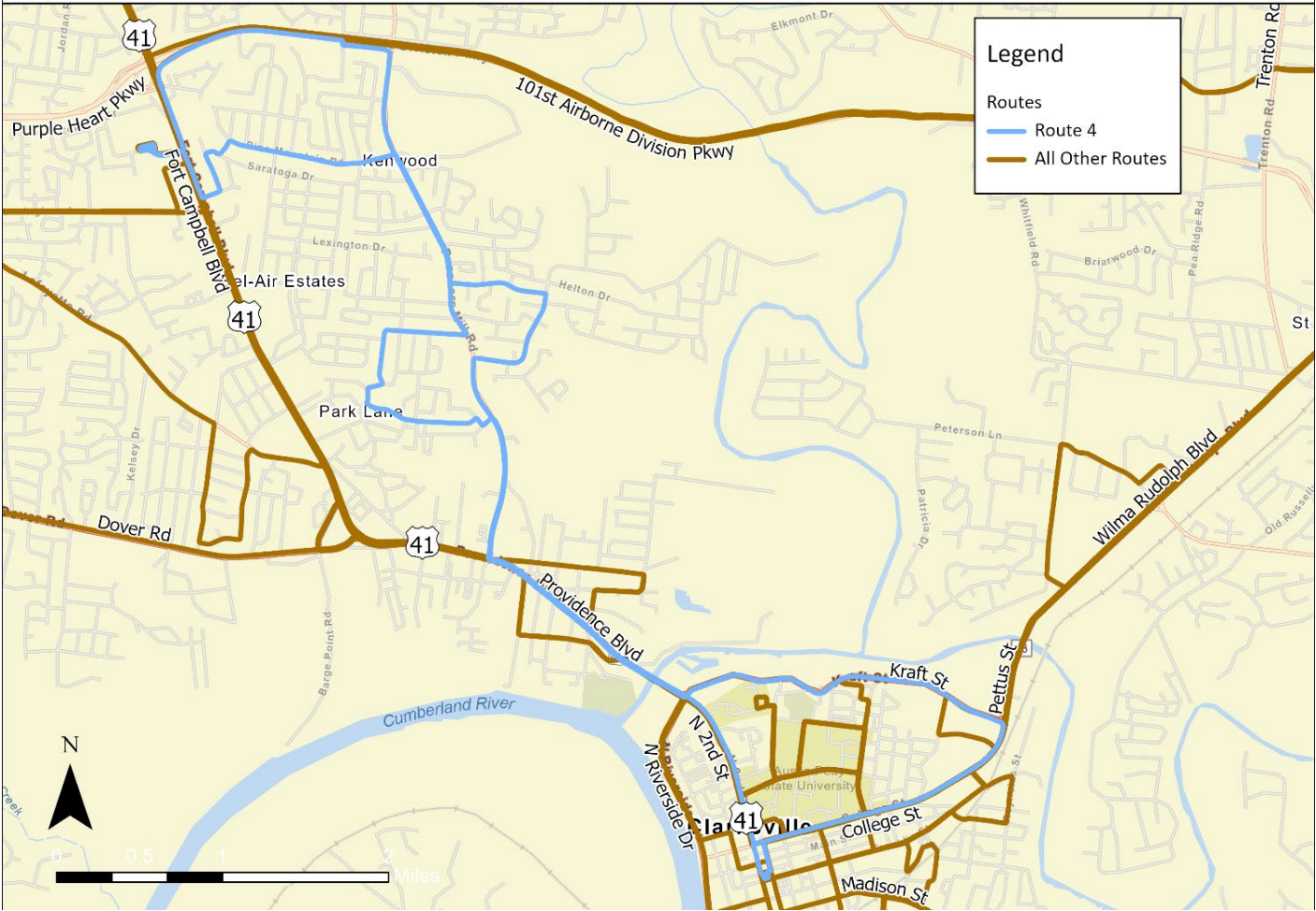




Figure 19: Route 4 (Peachers Mill Road) Preliminary Modifications

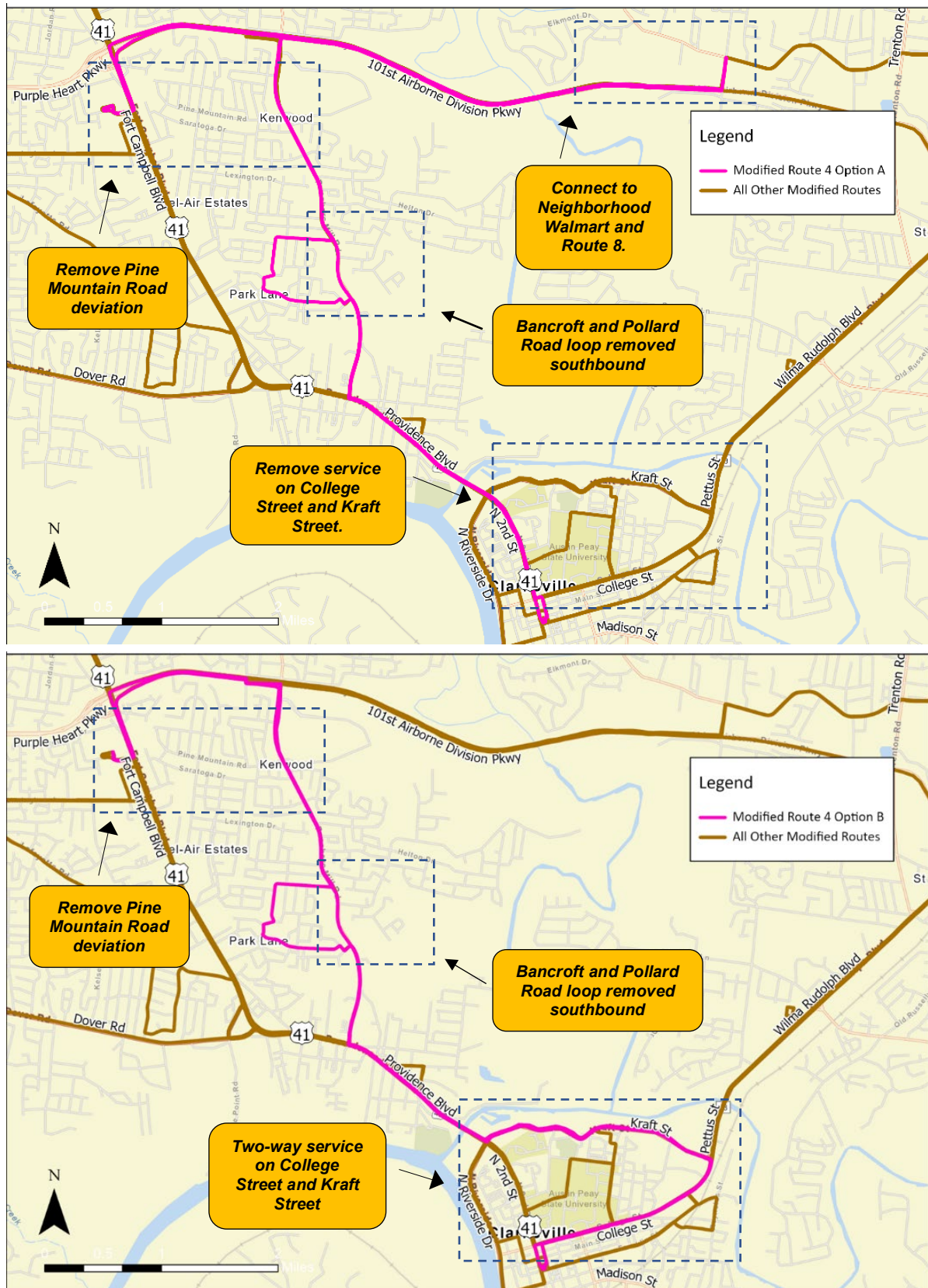










Figure 22: Route 7 (Governor Square Mall) Preliminary Modifications

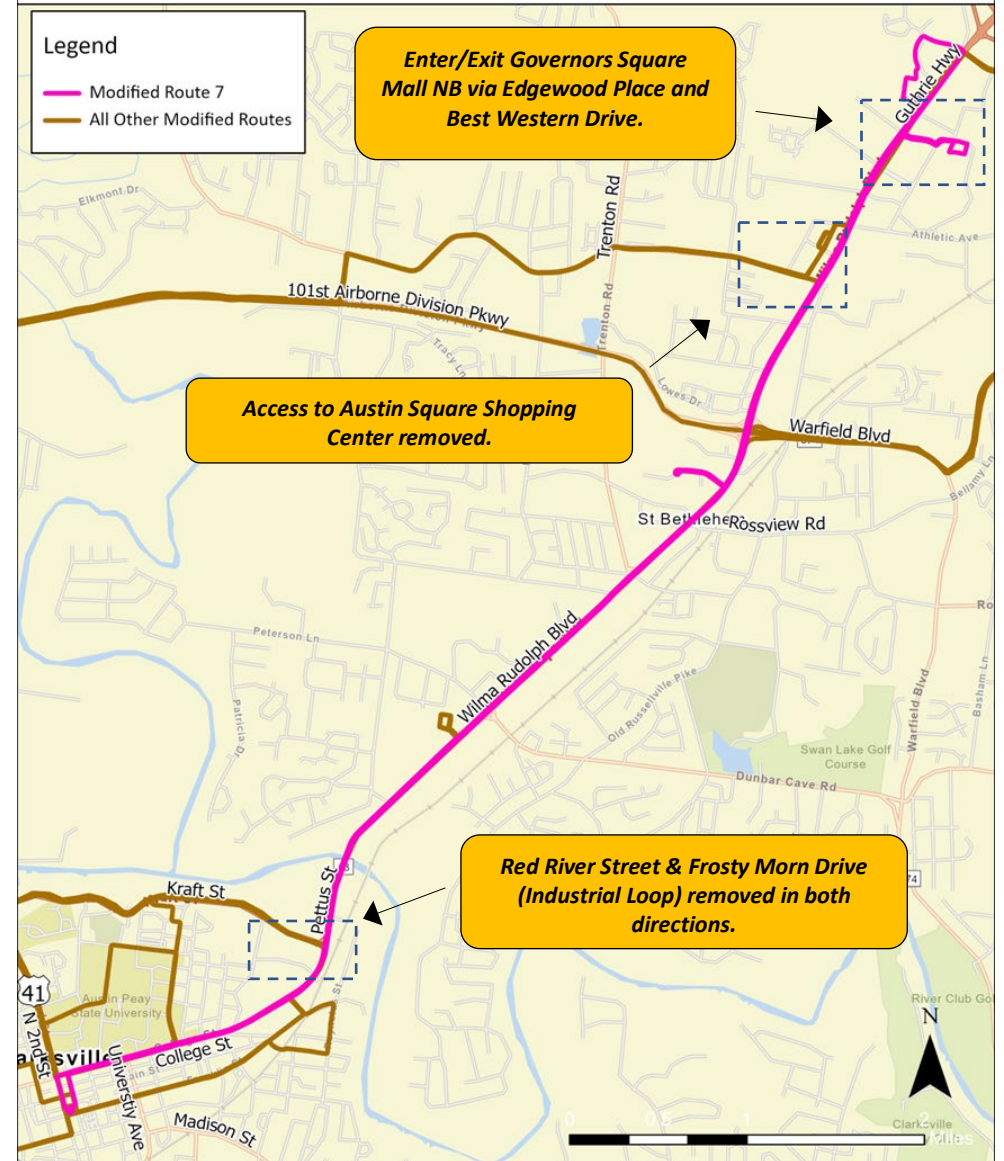


Figure 23: Route 8 (101 Express/Hospital) Preliminary Modifications (Continues to Next Page)

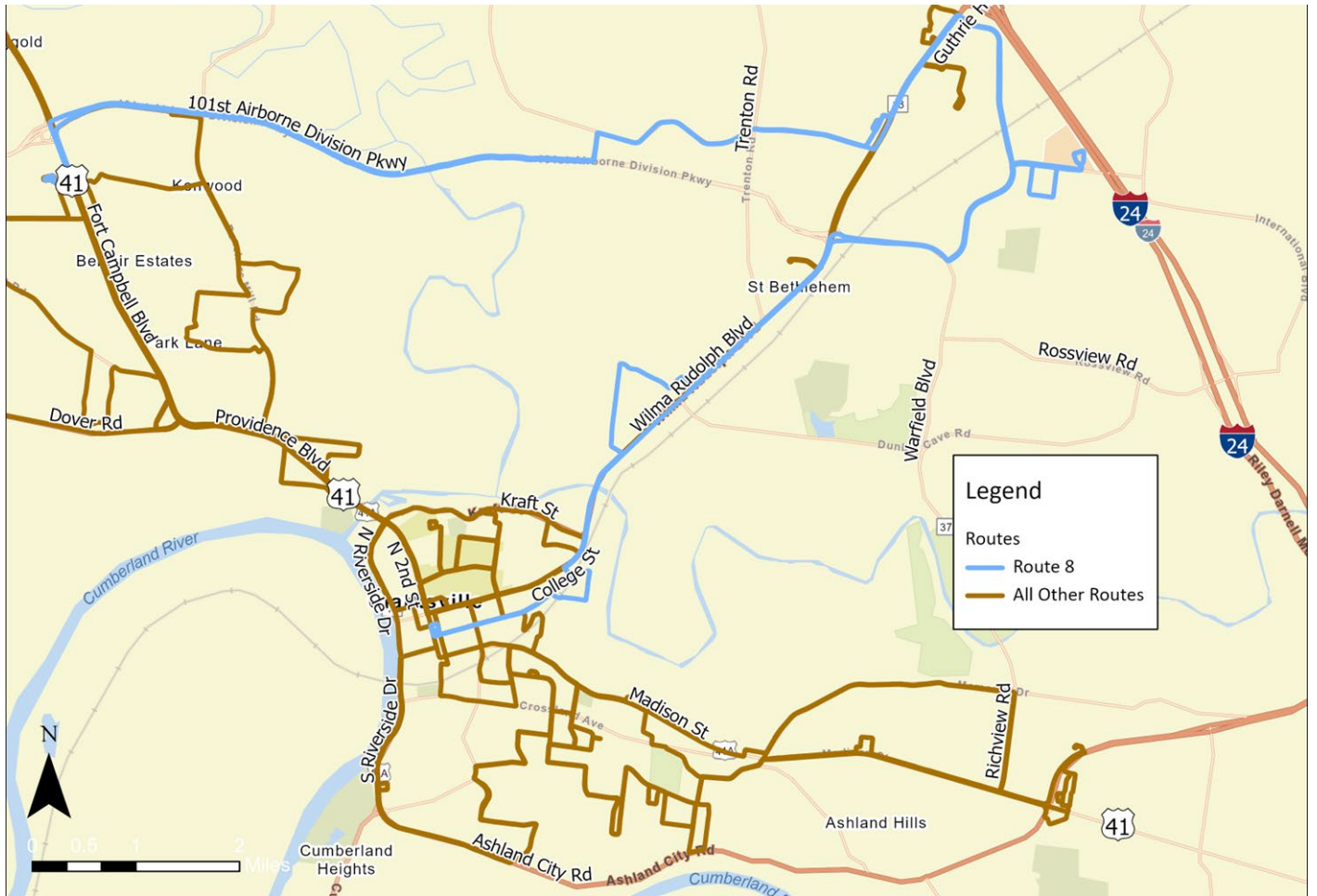
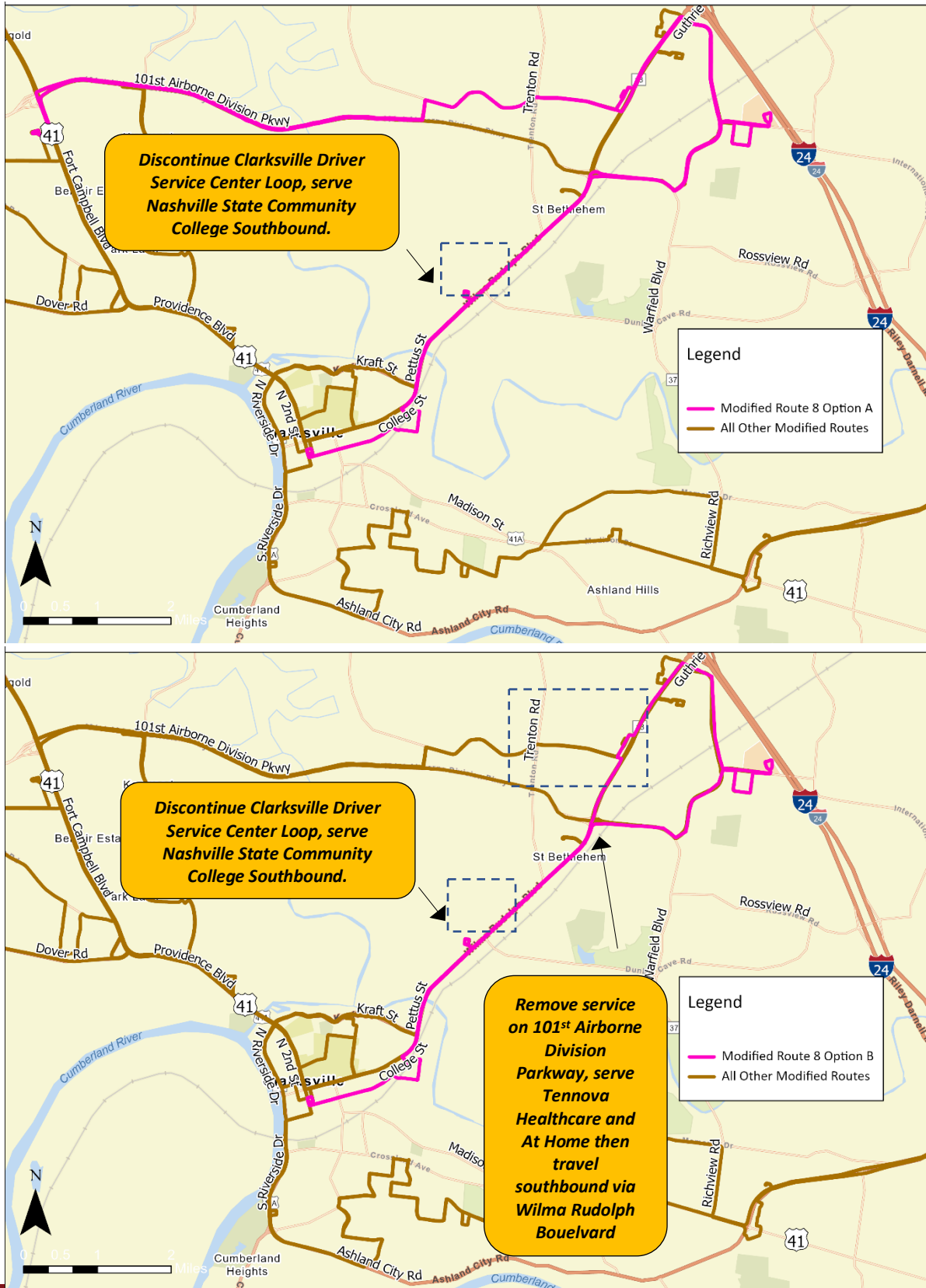


Figure 23: Route 8 (101 Express/Hospital) Preliminary Modifications





### 7.1.2. Proposed Final COA Short-Term Service Changes

The above-mentioned service changes represent an array of options CTS may undertake to modify their existing fixed-route services. These changes are all cost-neutral in their design and are aimed at reducing route run times and improving service for existing high activity stops. An additional CTS staff workshop was held on November 17, 2023, to discuss the specific changes that would be implemented in the short-term.

As of this COA, a recurring challenge faced by CTS, and many other transit agencies across the country is an ongoing bus operator shortage. This shortage requires CTS to carefully utilize their limited resources to ensure that existing services levels can be maintained to best serve its riders. Due to the realities of this operator shortage, it was recommended by staff that a limited number of the proposed short-term service changes be implemented at this time.

Table 18 shows the final list of the COA service changes that are planned to be implemented in the short-term. The service changes to go forward were chosen based on current needs for the CTS system and a desire to maintain existing service levels for CTS riders. Further details on these changes are provided in the “Implementation Plan” section of this COA.

Table 18: Proposed Final COA Service Changes

Route Number	Route Name	Proposed Route Modifications
Route 4	Peachers Mill Road	<ul style="list-style-type: none"> <li>Removal of the Bancroft and Pollard Road loop in the southbound direction.</li> </ul>
Route 5	Hilldale	<ul style="list-style-type: none"> <li>Removal of Woody Hills Drive and East Happy Hollow Drive loop.</li> </ul>
Route 7	Cunningham Loop	<ul style="list-style-type: none"> <li>Removal of Red River Street and Frosty Morn Drive Industrial loop.</li> <li>Removal of Austin Square Shopping Center access in favor of southbound operation via Wilma Rudolph Boulevard.</li> </ul>

### 7.1.3. Preliminary Long-Term Proposed Modifications

While typically COA processes focus on the short-term in terms of route service recommendations, long-term service enhancements were envisioned as well. These long-term service enhancements, while not bound by a timeframe, represent enhancements to the fixed-route system that CTS may undertake to better connect the Clarksville Urban Area and region as a whole.

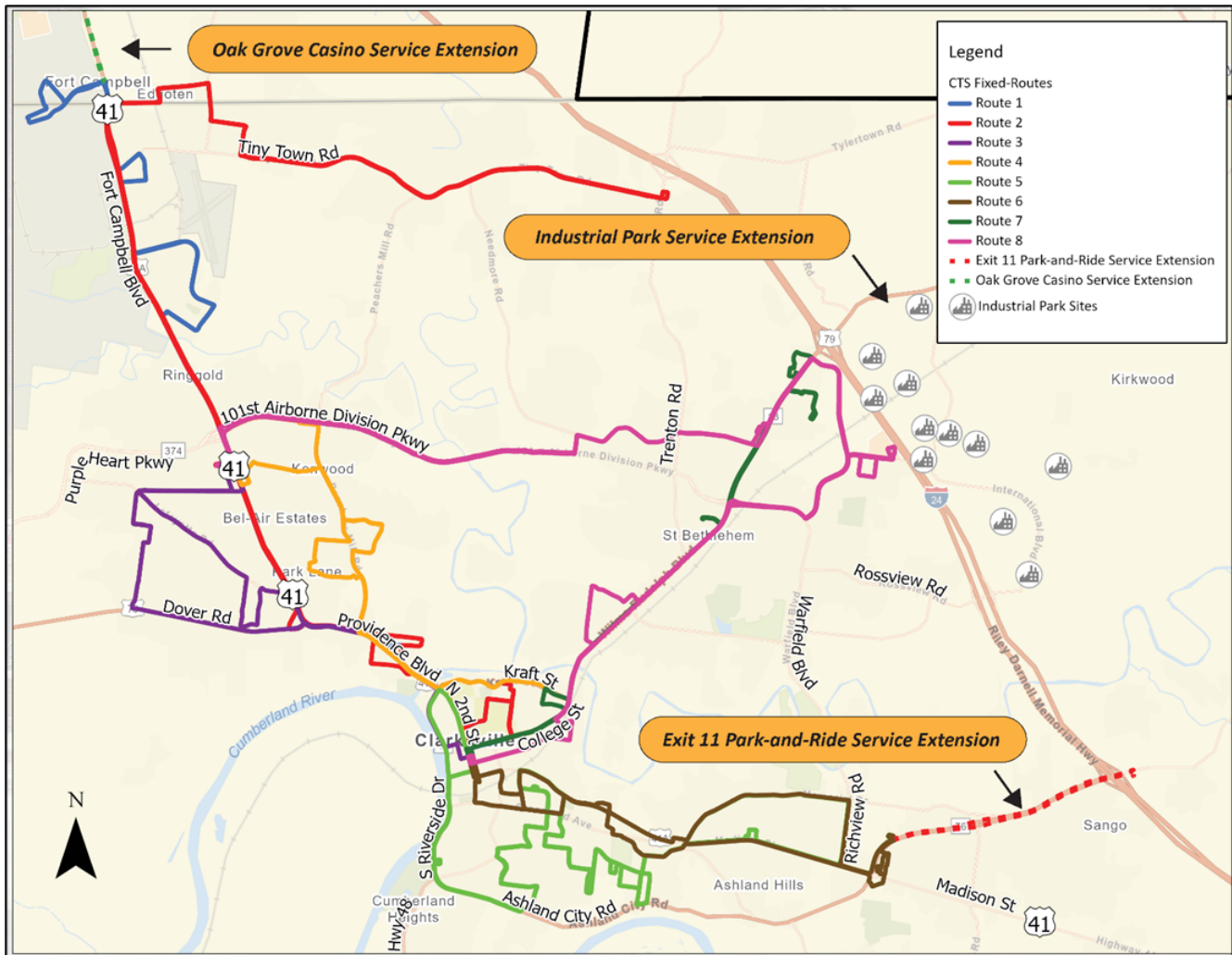
**Table 19** provides an overview of the five long-term service changes recommended for CTS and **Figure 24** shows those changes graphically.



Table 19: Proposed Long-Term Service Changes

Long-Term Recommendation	Description
<b>Exit 11 Extension Park-and-Ride Service Extension</b>	<ul style="list-style-type: none"> <li>Extend Service to the Exit 11 Park-and-Ride to connect with the Route 94X (Clarksville Express) and Greyhound Station.</li> </ul>
<b>Oak Grove Casino Service Extension</b>	<ul style="list-style-type: none"> <li>Extend service to the Oak Grove Casino, north of Fort Campbell.</li> </ul>
<b>Industrial Park Service Extension</b>	<ul style="list-style-type: none"> <li>Extend service to the industrial part sites located in the northeast portion of the Clarksville Urban Area.</li> </ul>
<b>Sunday Service Expansion</b>	<ul style="list-style-type: none"> <li>Expand service on all routes to operate on Sundays (operation seven days a week).</li> </ul>
<b>Earlier/Later Service Hours Expansion</b>	<ul style="list-style-type: none"> <li>Extend service hours on all routes to operate in earlier morning and/or later night times each service day.</li> </ul>

Figure 24: Long-Term Proposed Service Changes



## 8. Implementation Plan

Implementation of the short-term service changes identified in the COA are summarized in this section. As presented, the short-term service changes result in a cost neutral implementation which is consistent with the objectives established for the COA at the onset of the project. In addition to presenting short-term changes, this section also provides a review of several service policies, important considerations for those service policies, and a financial summary consisting of a review of operating expenses by mode, major revenue sources, and fleet replacement plans for both fixed-route and paratransit service vehicles.

### 8.1. Final COA Short-Term Service Changes

As indicated, short term service changes reflect a cost neutral implementation plan and consist primarily of discontinuation of several small segments of service. Each is described below, and illustrations of the service changes are shown in **Figure 25** to **Figure 27**

- **Route 4: Peachers Mill Road** – Removal of the Bancroft Drive and Pollard Road loop in the southbound direction.
- **Route 5: Hilldale** – Removal of the Woody Hills Drive and East Happy Hollow Drive loop.
- **Route 7: Governors Square Mall** – Removal of Red River Street and Frosty Morn Drive Industrial loop. In addition, access to the Austin Square Shopping Center will be discontinued where the Route 7 will continue southbound operation via Wilma Rudolph Boulevard.

Figure 25: Route 4 (Peachers Mill Road) Final COA Service Changes

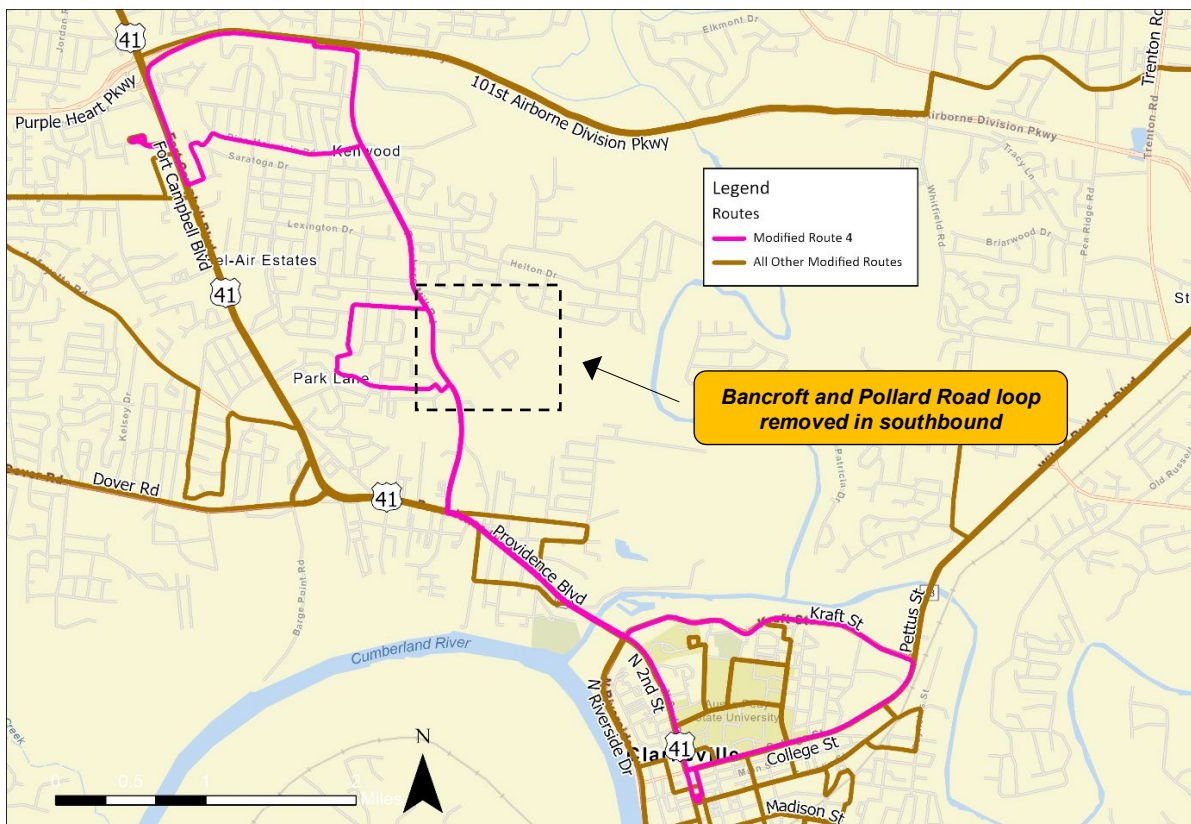
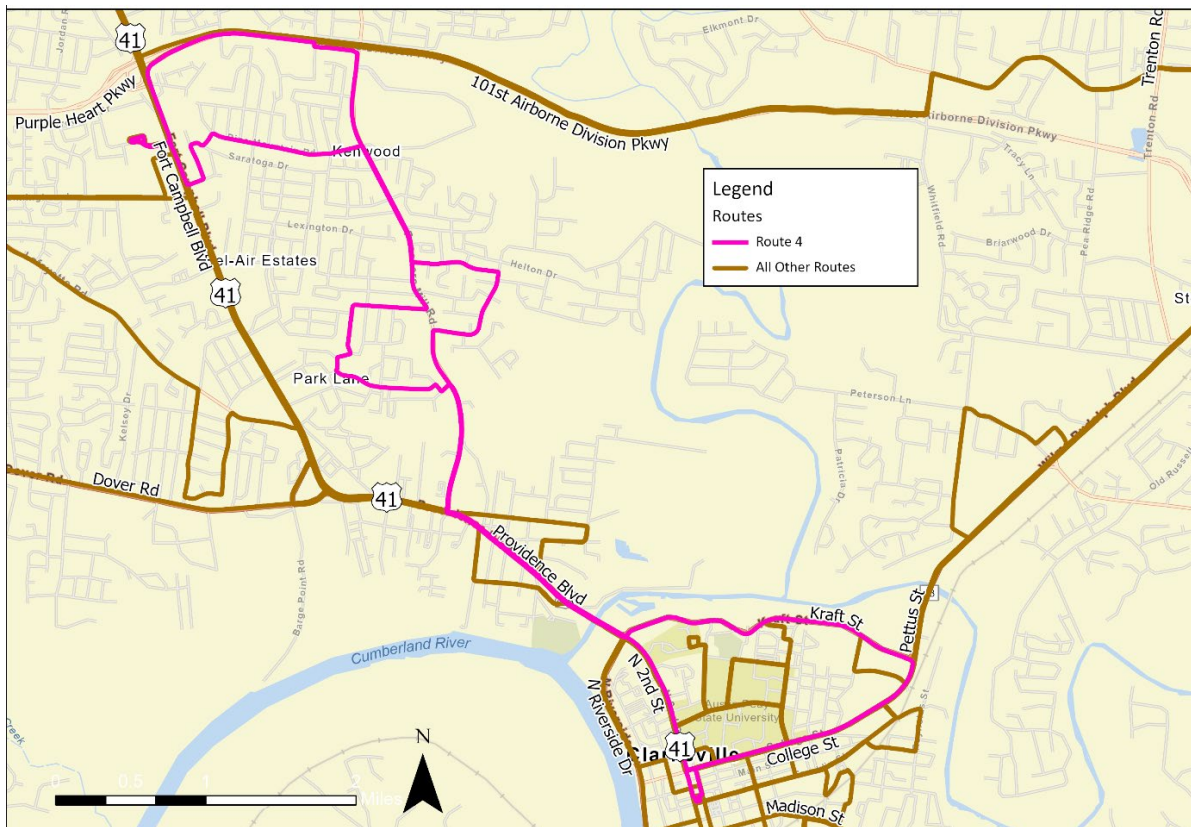




Figure 26: Route 5 (Hilldale) Final COA Service Changes

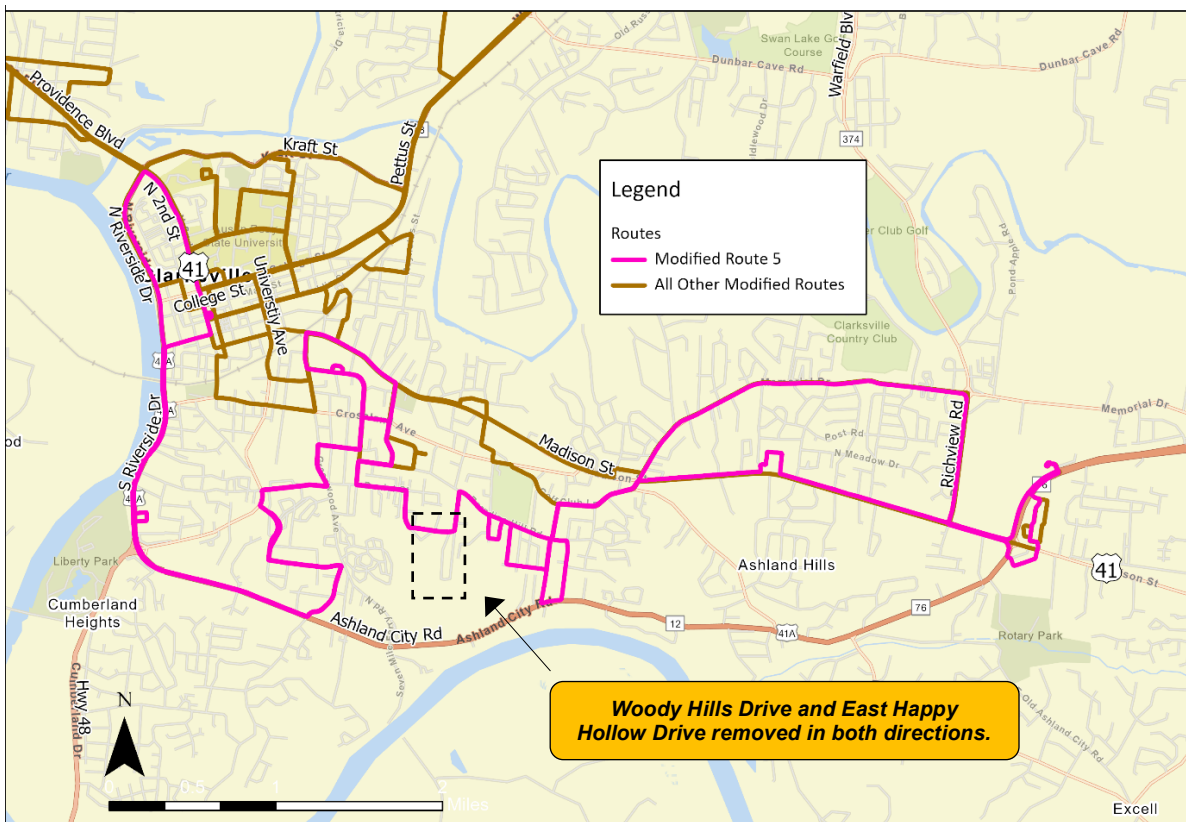
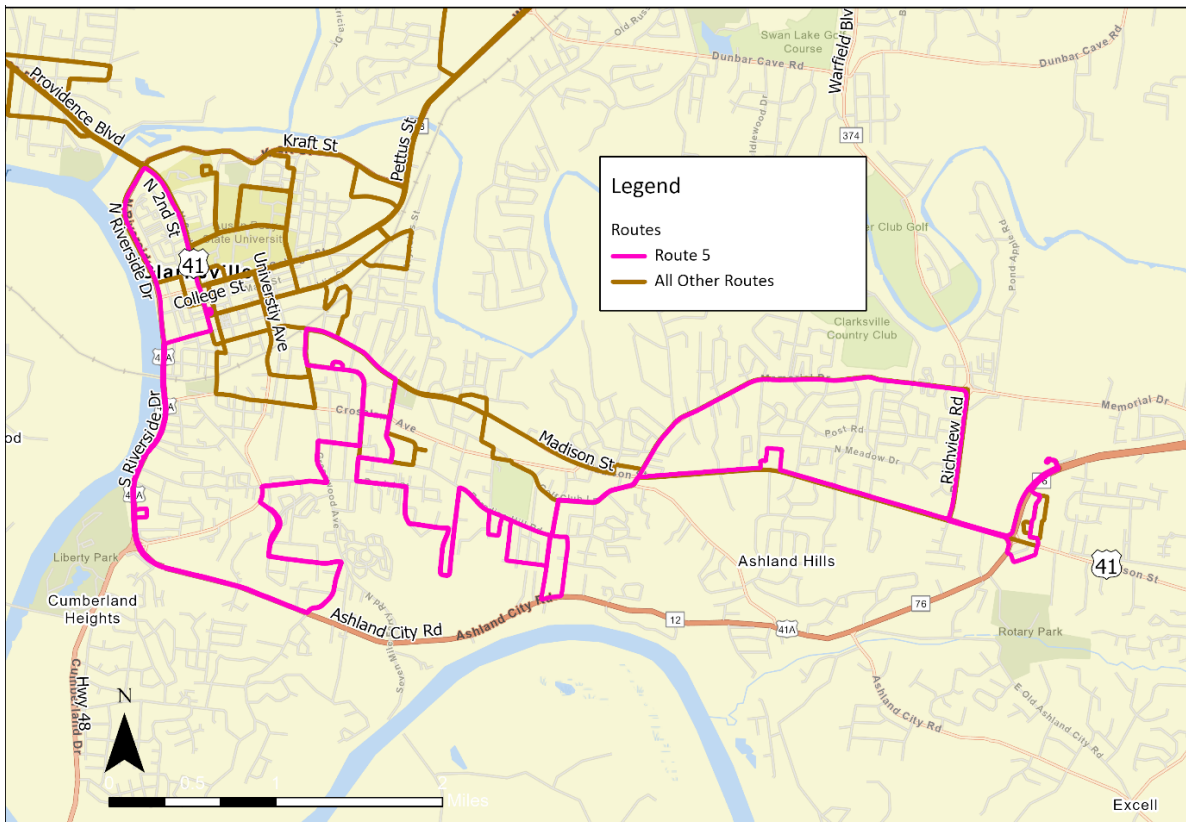
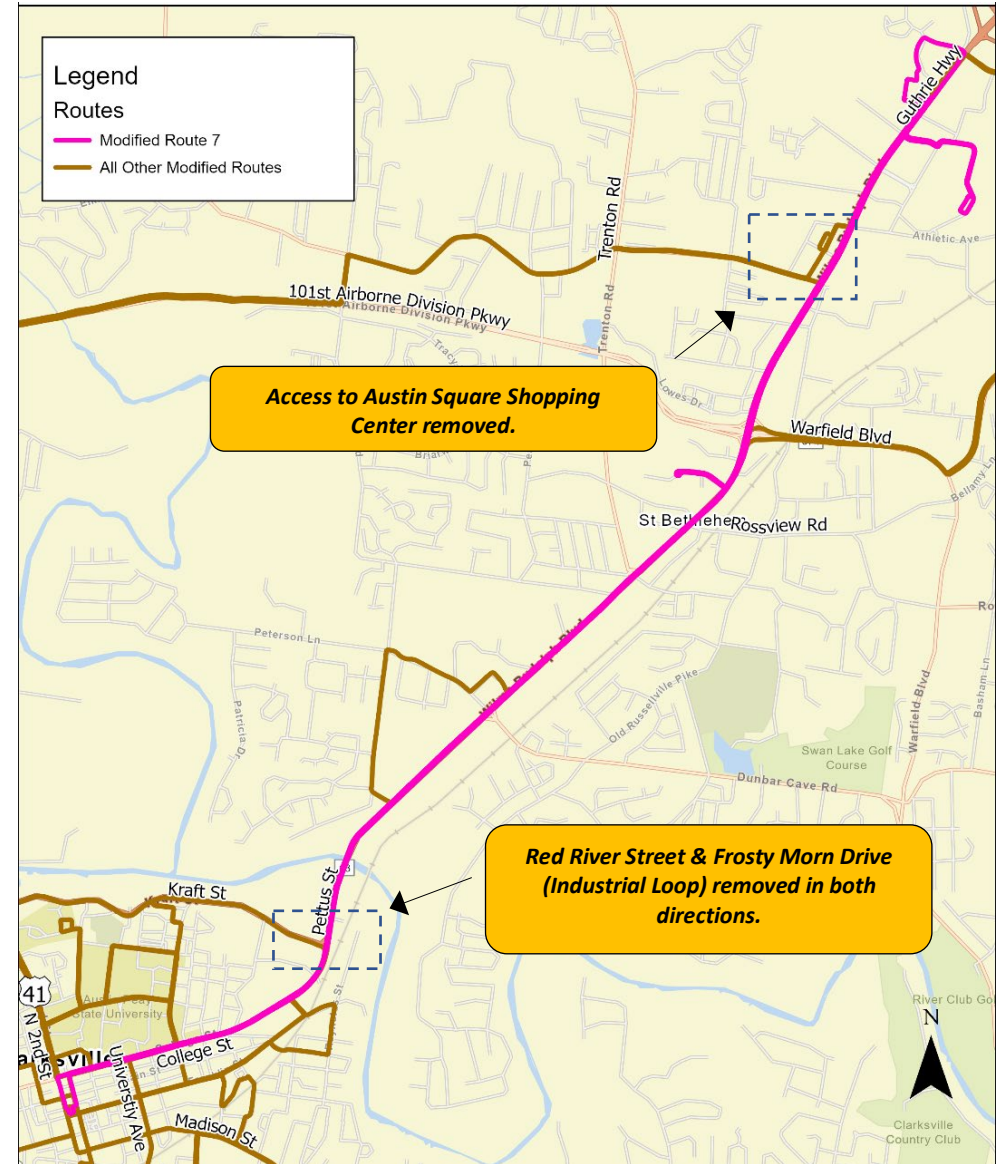
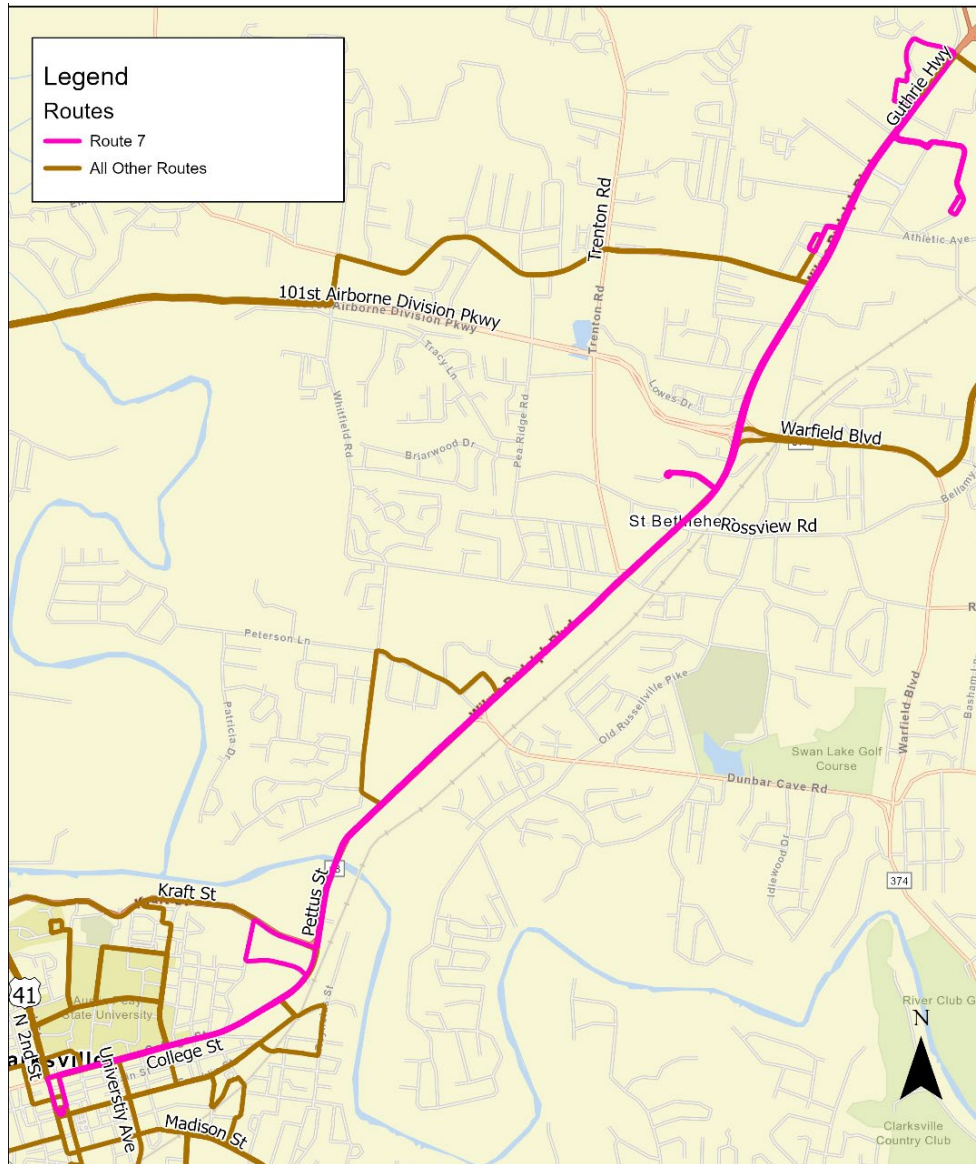


Figure 27: Route 7 (Governors Square Mall) Final COA Service Changes



## 8.2. Service Policies

The analysis of transit service operations allows for a close examination of several of CTS's operating practices and policies. For CTS, there were no outstanding or egregious practices observed through this review and CTS should be commended for operating a sound transit system, operationally and administratively. Several service policy considerations and infrastructure needs do stand out and have been identified through this effort and that may serve to enhance what CTS is already doing. These policy considerations and needs are organized into two (2) categories: service policies and infrastructure.

### 8.2.1. Service Policies

#### Flag Stops

CTS currently allows for flag stops along streets and roads where the speed limit is less than 25 miles per hour (mph). The policy allows for enhanced access and better customer service, however, in practice, there are instances where customers and operators have fallen into patterns where the speed limit policy is not implemented in a consistent manner. For example, flag stops were observed for "regular" customers and at locations that were not along 25 mph roads (i.e., around the corner or just across the street). Operationally, it is understood that loosely written policies result in practical applications by front line employees, who more often than not, have more pressing and immediate demands that they need to address. For the most part, it appears that the policy works well for customers. CTS may want to consider more fixed stops under the following conditions:

- High ridership areas where shelter and bench infrastructure may be needed
- Locations with safer access where present conditions are unsafe for both operators and bus riders.
- Along routes with on-time performance issues

#### On-Demand Fixed-Route Deviations

Several CTS routes allow for deviations off the fixed-route alignment to nearby locations such as medical facilities. These deviations occur on Routes 5, 6, and 8 and are typically scheduled into service on an on-demand basis. Discussions with staff indicated that requests for such deviations are not prevalent and that the operations teams works to allow for these deviations whenever possible and in a way that doesn't impact schedule adherence. Further examination of fixed-route deviations, in combination with other proposed service cuts defined in this COA, could prove beneficial in reaching areas of the community that have expressed a desire for service (i.e., Route 5, Options A and B). Select routes with deviations at specific times of the day, wherever the service schedule will allow, can allow CTS to expand its geographic coverage as well as assess the demand for service in new areas.



### Big Box Parking Lot Access

CTS operates with a focus on customer service and provides service to the door and within large parking areas of major big box retailers and large shopping centers. Locations include several Walmarts, Food Lion, and Governors Square Mall, among others. As the community continues to grow, traffic conditions will deteriorate, and on-time performance will be impacted. Navigating fixed route buses through parking lots could further contribute to delays as well as create conflicts with pedestrians and private vehicles.

CTS should consider an incremental approach to eliminating direct access to select parking areas over time. The first priority would be to consider routes unable to make timed connections in Downtown Clarksville or transfer points served by multiple routes. With the majority of routes operating on a 60-minute frequency, small delays could equate to missed connections and a long wait for the next bus.



### 8.2.2. Infrastructure

#### Sidewalk Infrastructure/Safe Accessible Paths

Most transit customers arrive to the bus stop on foot, emphasizing the need for safe access to bus stops. It was observed that many areas within the CTS service area lacked supportive pedestrian infrastructure. In many instances, stops lack connecting sidewalks which creates barriers to transit. As a City Department, CTS should consider participation in the development review process. This would allow sidewalk connections to the nearest intersection, bus stops, ADA-accessible concrete pads, etc., to be incorporated into the development of property, or roadway maintenance/reconstruction projects. In this way, sidewalks, signalized pedestrian crossings, and ADA compliant curb, ramp, and detectable warning tiles can be incrementally integrated into the network over time. A regular review of CIP projects, in coordination with CTS Facilities staff, could also facilitate the identification of opportunities for improved infrastructure.





### Stop Amenities and Infrastructure

Stop Amenities refer to shelters, benches, bike racks, lighting, and other features designed to support the needs and comfort of passengers waiting for the bus. Like many small agencies with limited capital budgets, CTS prioritizes amenity placement in locations where they are most needed.

Many stops in the CTS network consist of a bus stop sign post and are not ADA accessible. The lack of prominent and comfortable waiting areas impact the visibility of the service and can make it difficult for passengers to physically access the stops, specifically elderly or disabled persons. To address this issue, CTS could consider going through a process of selecting two vendors: 1) a stop amenities vendor and 2) a construction vendor who would build ADA compliant bus stop boarding and alighting concrete pads along with sidewalk segments connecting to the nearest intersection. Furthermore, as a City Department, CTS could explore how that relationship could be leveraged to help facilitate, or expedite, permitting for small construction activities within City right-of-way, similar to what is needed for bus stops.



### 8.3. Financial Summary

This section summarizes CTS operating expenses and revenues over the last five years and is based on readily available National Transit Database (NTD) information. In addition to a summary of revenue sources, this section also includes fleet replacement plans for both the fixed-route and paratransit fleets. A short description of CTS’s future transition of the Downtown Transfer facility to a new location is also provided.

#### 8.3.1. Operating Element

CTS operations is supported by a combination of federal, state, and local funding sources, in addition to directly generated revenue including fare collection and advertising. As shown in **Figure 28**, over half of the total operating revenue in 2022 was from federal sources. The operating revenue and expense trends from FY 2018 to FY 2022 were analyzed to understand the resources for future fiscal years. As shown in Table 20, federal and state revenue have increased, while local and directly generated revenue has decreased between 2018 and 2022. Directly generated revenue consists largely of farebox revenue and advertising.

As shown in **Figure 28**, approximately 70 percent of FY 2022 CTS revenue came from federal and state funding sources. The overall average annual increase in operating expenses between 2018 and 2022 is 5 percent with the largest annual increase occurring between FY 2021 and FY 2022.

Figure 28: FY 2022 Operating Revenue Sources

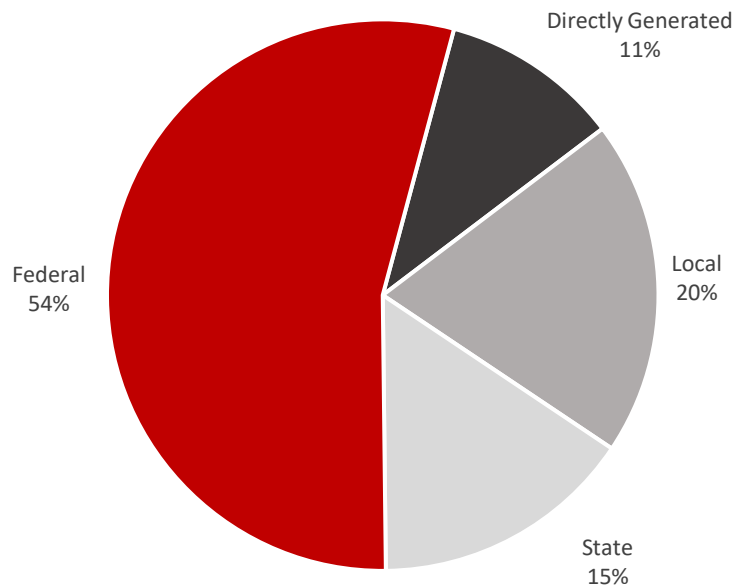


Table 20: Historic 5-Year Operating Expense and Revenue

	2018	2019	2020	2021	2022	Annual Change
<b>Expenses</b>						
Fixed Route	\$4,805,613	\$4,819,791	\$4,953,922	\$5,366,381	\$5,910,734	5%
Paratransit	\$1,439,208	\$1,538,933	\$1,558,118	\$1,493,373	\$1,640,764	3%
<b>Total</b>	<b>\$6,244,821</b>	<b>\$6,358,724</b>	<b>\$6,512,040</b>	<b>\$6,859,754</b>	<b>\$7,551,498</b>	<b>5%</b>
<b>Revenue Sources</b>						
Directly Generated	\$890,189	\$883,235	\$715,229	\$721,779	\$794,163	(3%)
Local	\$1,744,813	\$1,640,971	\$1,253,615	\$877,598	\$1,488,244	(4%)
State	\$1,032,626	\$1,063,136	\$1,089,202	\$403,905	\$1,165,063	3%
Federal	\$2,577,193	\$2,771,382	\$3,453,994	\$4,856,472	\$4,104,028	12%
<b>Total</b>	<b>\$6,244,821</b>	<b>\$6,358,724</b>	<b>\$6,512,040</b>	<b>\$6,859,754</b>	<b>\$7,551,498</b>	<b>5%</b>

### 8.3.2. Capital Element

#### Fleet Replacement Plan

The existing fleet for the fixed route and paratransit service was evaluated for useful life benchmarks based on years in operation. The fleet replacement schedule is in line with FTA useful life guidelines and maintains a high quality of service for CTS riders. Based on the proposed service changes, additional vehicles to support long-term service enhancements are not included. The vehicle cost assumption and the total size of the fixed route and paratransit fleet is shown in **Table 21**. The fleet replacement plan for the fixed route and paratransit fleets including vehicle costs in 2023 dollars is provided in **Table 22** and **Table 23**.

Table 21: Vehicle Cost and Total Fleet

Vehicle	Service	Useful Life Standard (Years)	Vehicle Cost (\$2023)	Fleet Size
Gillig (Heavy Duty)	Fixed Route	10	\$600,000	23
Startrans (Cutaway)	Fixed Route	7	\$150,000	3
Startrans (Cutaway)	Paratransit	7	\$150,000	4
Ford (Van)	Paratransit	5	\$100,000	10
<b>Total</b>				<b>40</b>



Table 22: Fixed Route Fleet Replacement Plan

Agency Fleet Id	Manufacturer	Model	Year	Useful Life	Vehicle Replacement Year					
					2024	2025	2026	2027	2028	2029
725	Gillig	Low floor	2010	10	1					
726	Gillig	Low floor	2010	10	1					
728	Gillig	Hybrid	2010	10	1					
729	Gillig	Hybrid	2010	10	1					
730	Gillig	Hybrid	2010	10	1					
731	Gillig	Hybrid	2015	10		1				
732	Gillig	Hybrid	2015	10		1				
733	Gillig	Hybrid	2015	10		1				
734	Gillig	Low floor	2015	10		1				
735	Gillig	Low floor	2017	10				1		
736	Gillig	Low floor	2017	10				1		
737	Gillig	Low floor	2017	10				1		
738	Gillig	Hybrid	2018	10					1	
739	Gillig	Hybrid	2018	10					1	
740	Gillig	Hybrid	2018	10					1	
741	Gillig	Hybrid	2018	10					1	
742	Gillig	Hybrid	2018	10					1	
743	Gillig	Diesel	2019	10						1
744	Gillig	Diesel	2019	10						1
745	Gillig	Diesel	2019	10						1
746	Gillig	Hybrid	2019	10						1
747	Gillig	Hybrid	2019	10						1
748	Gillig	Hybrid	2019	10						1
600	Startrans	Senator II	2017	7	1					
601	Startrans	Senator II	2017	7	1					
602	Startrans	Senator II	2018	7		1				
<b>Replacement Vehicles</b>					<b>7</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>6</b>
<b>Vehicle Cost (\$2023)</b>					<b>\$3.3 M</b>	<b>\$2.55 M</b>	<b>\$0</b>	<b>\$1.8 M</b>	<b>\$3.0 M</b>	<b>\$3.6 M</b>

Table 23: Paratransit Fleet Replacement Plan

Agency Fleet Id	Manufacturer	Model	Year	Useful Life	Vehicle Replacement Year					
					2024	2025	2026	2027	2028	2029
534	Startrans	Senator II	2015	7	1					
538	Ford	T350	2016	5	1					1
539	Ford	T350	2016	5	1					1
540	Ford	T350	2016	5	1					1
541	Ford	T350	2016	5	1					1
542	Ford	T350	2016	5	1					1
535	Startrans	Senator II	2016	7	1					
536	Startrans	Senator II	2016	7	1					
537	Startrans	Senator II	2016	7	1					
533	Ford	E150	2014	5	1					1
544	Ford	T350	2020	5		1				
545	Ford	T350	2020	5		1				
546	Ford	T350	2020	5		1				
547	Ford	T350	2020	5		1				
<b>Replacement Vehicles</b>					<b>10</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Vehicle Cost (\$2023)</b>					<b>\$1.2 M</b>	<b>\$0.4 M</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0.6 M</b>

### New Downtown Transfer Facility

CTS is involved in an effort to develop a new site for its Downtown Clarksville Transfer Center. The proposed location is less than half a mile from the current site and is situated within walking distance to many Downtown points of interest. Important for efficient operations, the new location keeps buses away from the Downtown core, saving time for routes by facilitating more efficient movement in and out of Downtown Clarksville. The project is anticipated to address the following four priorities:

- Sustain or improve infrastructure, alleviate traffic issues, or enhance mobility.
- Enhance or reinforce public safety.
- Support/increase citizen and community engagement.
- Improve operational efficiency/effectiveness or bolster stakeholder satisfaction.

The total cost of the project, is estimated at \$10 million, including land purchase, design, and construction. Work is estimated to take between three to four years with completion of the project in FY 2027. The new transfer facility location will require an evaluation of route run times and connections to include a review of staff report times and daily operator work assignments. That impact to CTS operations was not evaluated as part of this COA but reflects an important step that will need to be determined as part of the transition to the new location.

## 9. Conclusion

This COA was developed to assess the overall performance and operational health of the fixed-route bus service provided by CTS. Through assessing CTS service on both a systemwide and route-by-route level, short-term and actionable service modifications were discussed and proposed. These modifications were designed with a goal in mind of improving CTS service in a manner that is cost-neutral while improving service to high demand stops and areas along the CTS fixed-route network.

While not unique to CTS, challenges such as bus driver shortages, financial restraints, and the desire to serve those most in need for bus service were considered and discussed. This COA and its findings serve as a look at the state of CTS's current operating conditions and needs. As evidenced by the public outreach process and engagement across CTS staff and stakeholders, there is a vested interest in promoting greater mobility and access for residents in the Clarksville Urban Area. While not every service modification discussed in this COA is to be implemented in the short-term, it is the goal that these changes will be considered when faced with future decision-making and meeting the needs of improved service for current CTS riders and attracting more potential riders in the future.

## **Appendix A**

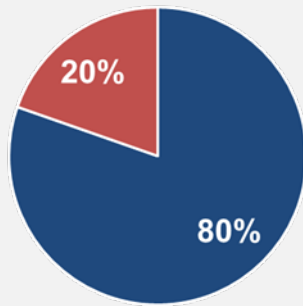
### **Public Involvement Survey Results**



**Question 1: Do you use Clarksville Transit System services?**

Based on the survey results, the majority (80%) of the total survey respondents use CTS services. Approximately 59% of the on-line survey respondents use CTS services and all (100%) of the in-person survey respondents use CTS services.

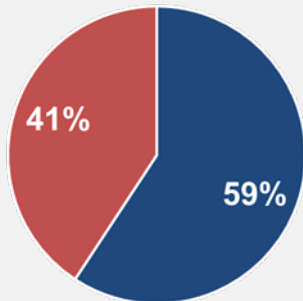
**All Survey Respondents**



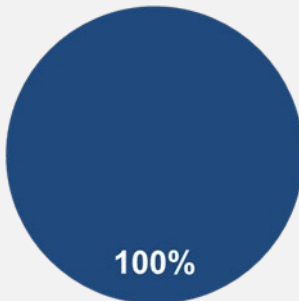
**Legend**

- Yes
- No

**On-line Survey Respondents**



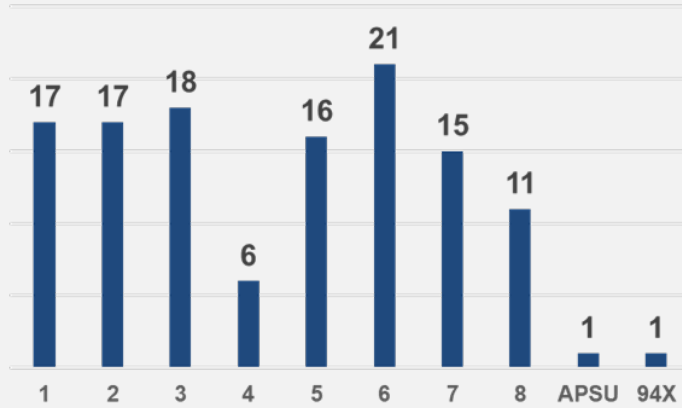
**In-person Survey Respondents**



**Question 2: Which CTS route(s) do you regularly ride (Please select all that apply)?**

Route 6 is the most used route for all survey respondents and in-person survey respondents. The most used routes for on-line survey respondents are Routes 2 and 6, respectively. Route 6 had the highest ridership while Route 2 had the third lowest based on FY 2022 ridership estimates.

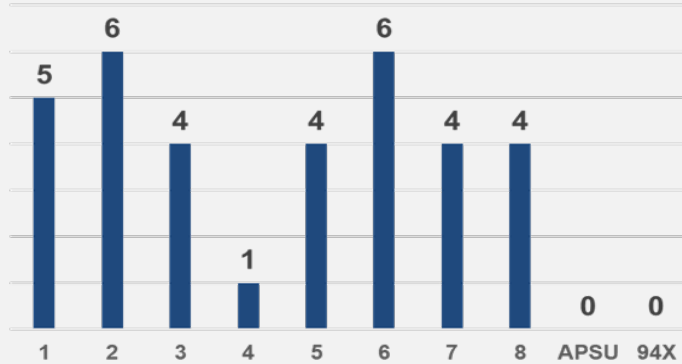
**All Survey Respondents**



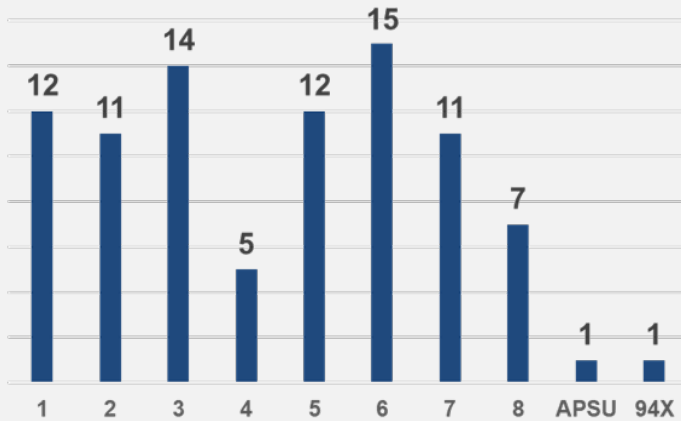
**Legend**

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8
- APSU Route
- 94X RTA Commuter Route

**On-line Survey Respondents**



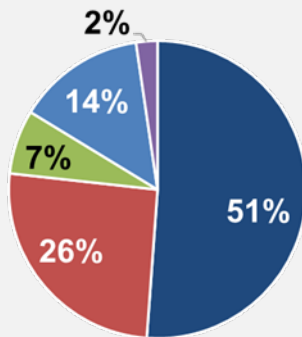
### In-person Survey Respondents



### Question 3: How often do you use CTS?

Based on the survey results, over half (51%) of the total survey respondents use CTS everyday. The on-line survey respondents use CTS less frequently and the in-person survey respondents use CTS more frequently.

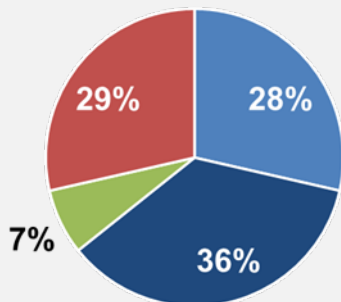
### All Survey Respondents



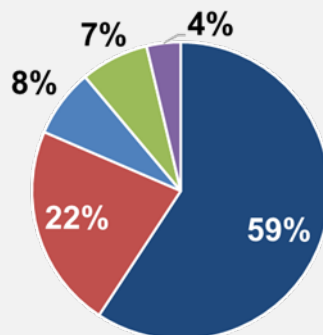
### Legend

- Everyday
- Multiple times a week
- Once a week
- A few times a month
- A few times a year

### On-line Survey Respondents



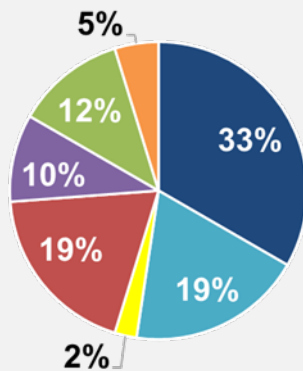
### In-person Survey Respondents



#### Question 4: How do you usually pay for your trip?

Based on the survey results, one third (33%) of the total survey respondents and half (50%) of the on-line survey respondents pay a full fare for CTS trips. In-person survey respondents typically either pay full fare (27%) or have a disabled pass (27%) for CTS trips.

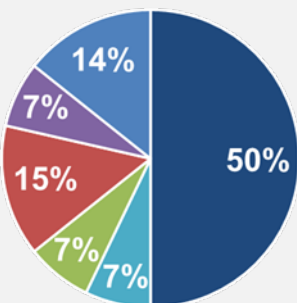
**All Survey Respondents**



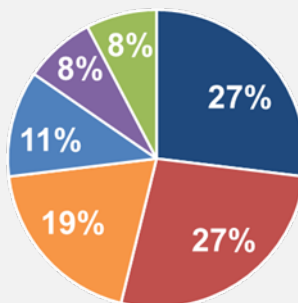
**Legend**

- Full Fare
- Senior (Age 65 and Over)
- Student
- Disabled
- 1-Day Pass
- 31-Day Liberty Pass
- 31-Day Liberty Disabled Pass
  
- Not Selected
- City Employee
- 7-Day Pass

**Online Survey Respondents**



**In-person Survey Respondents**

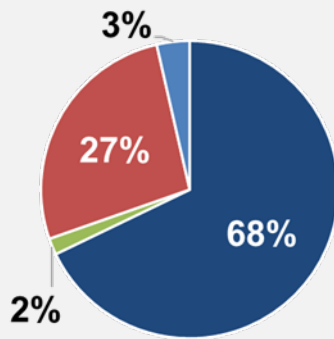




### Question 5: How do you usually get to the bus stop?

Based on the survey results, a majority (68%) of the total survey respondents walk to the bus stop. Approximately 45% of the on-line survey respondents and the vast majority (89%) of in-person survey respondents walk to the bus stop.

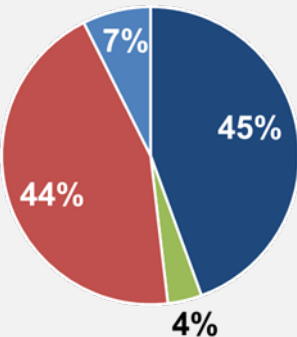
**All Survey Respondents**



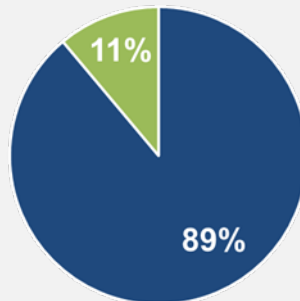
**Legend**

- Walking
- Biking
- No Response
- Other
- Not Selected
- CTS Paratransit

**On-line Survey Respondents**



**In-person Survey Respondents**

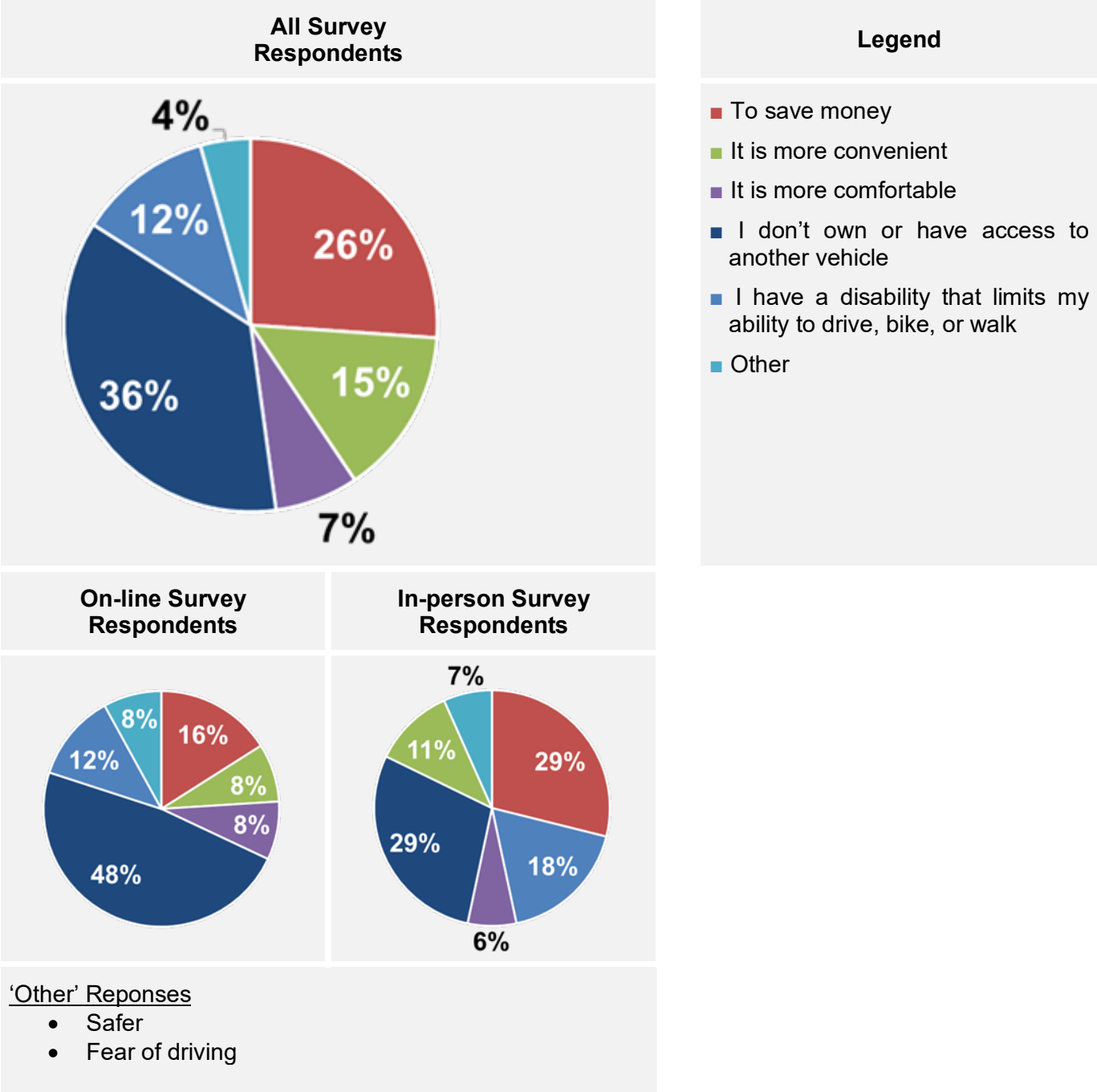


#### 'Other' Responses

- Catch Madison Street in Transit
- In wheelchair

**Question 6: Why do you use CTS over other ways of traveling (Select all that apply)?**

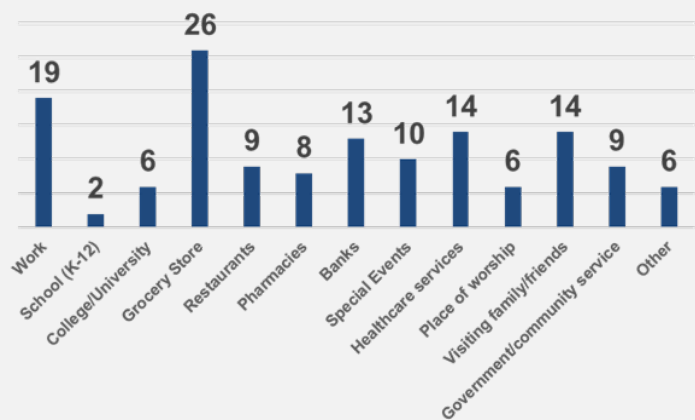
Based on the survey results, over a third (36%) of the total survey respondents and approximately 48% of the on-line survey respondents don't own or have access to another vehicle. The majority of the in-person survey respondents either don't own or have access to another vehicle (29%) or use CTS to save money (29%).



**Question 7: Where does CTS take you to (Select all that apply)?**

Based on the survey results, the most popular destination of the total survey respondents and the in-person survey respondents is the grocery store. The most popular destinations for the on-line survey respondents are either the grocery store or work.

**All Survey Respondents**



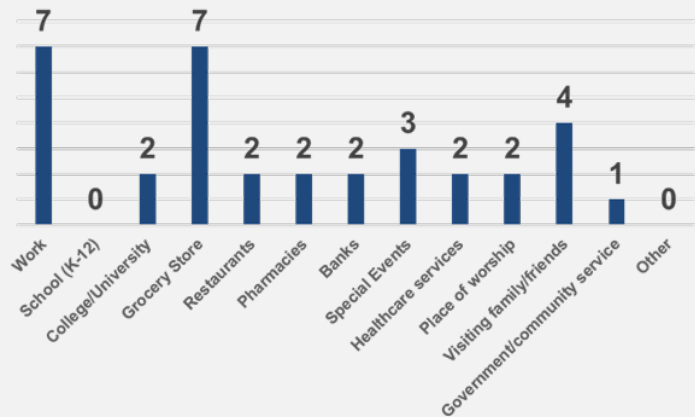
**Legend**

- Work
- School (K-12)
- College/University
- Grocery store
- Restaurants
- Pharmacies
- Banks
- Special events
- Healthcare services
- Places of worship
- Visiting family/friends
- Government / community service
- Other

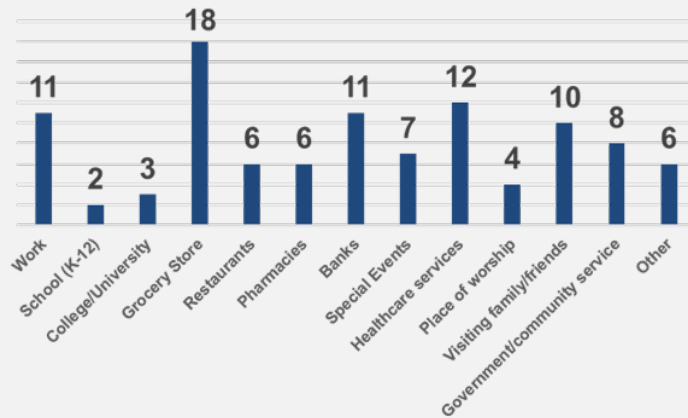
**'Other' Responses**

- Shopping
- Walmart
- Home
- Apartments
- Veterans Center

**On-line Survey Respondents**



### In-person Survey Respondents

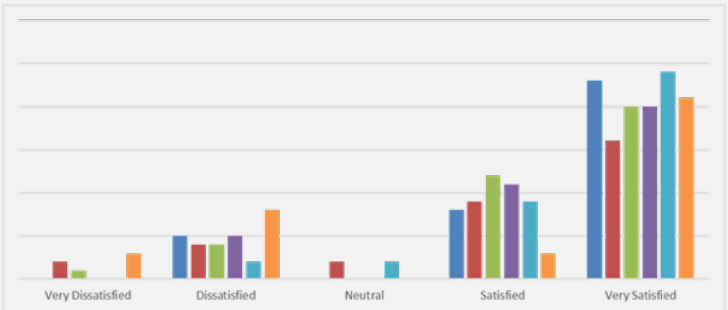




### Questions 8: Satisfaction with CTS Services and Facilities

For Questions 8, survey respondents were asked to rank their satisfaction with CTS services and facilities from ‘Very Dissatisfied’ to ‘Very Satisfied’. Based on the survey results, the majority of the survey respondents were either satisfied or very satisfied with CTS services and facilities.

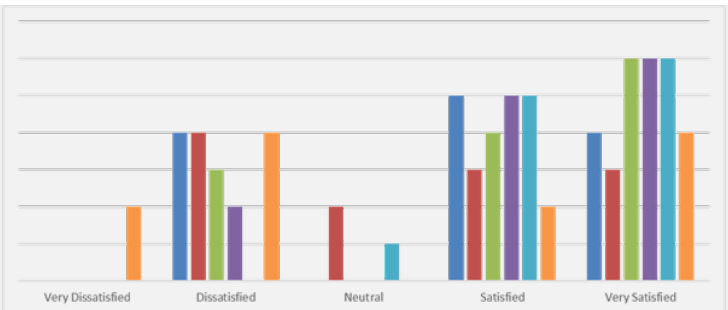
**All Survey Respondents**



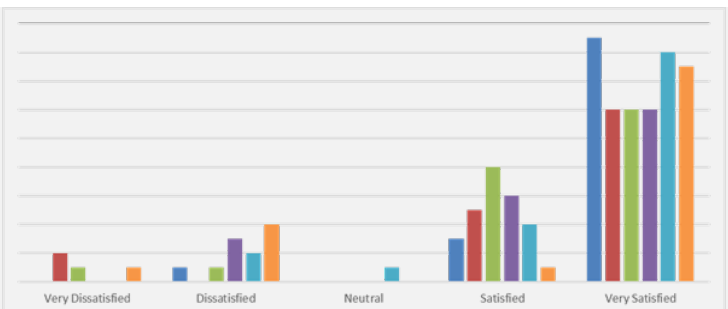
**Legend**

- Reliability of bus service
- Frequency of bus service
- Ease of reaching your destination using bus service
- Ease of using CTS route maps and schedules
- Comfort when riding the bus
- Comfort at bus stops or shelters

**On-line Survey Respondents**

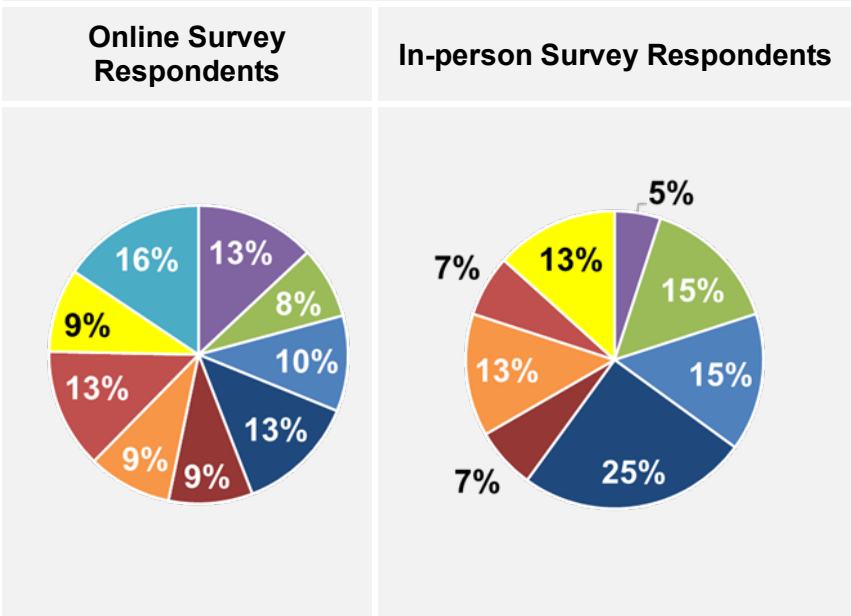
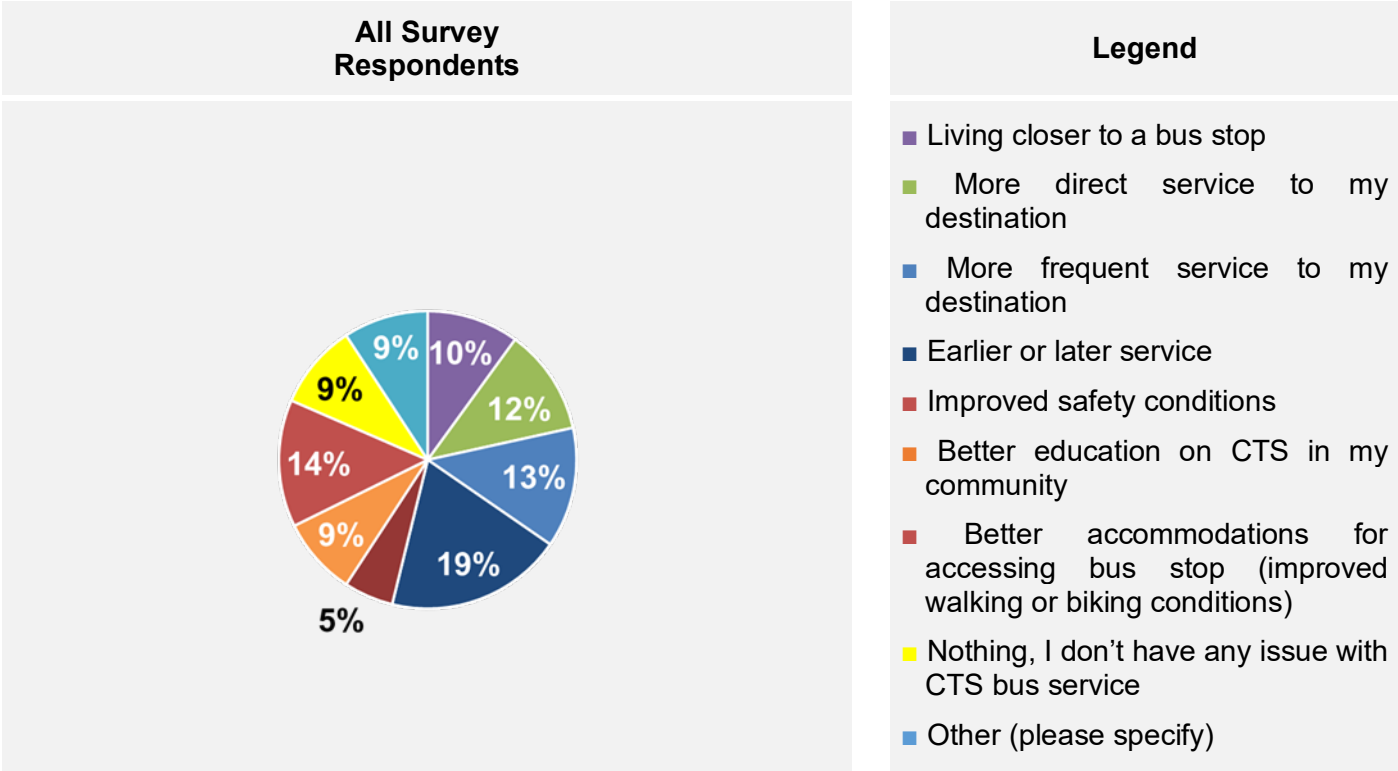


**In-person Survey Respondents**



**Question 9: What would make you use CTS/use CTS more frequently than you currently do? (Please select all that apply)?**

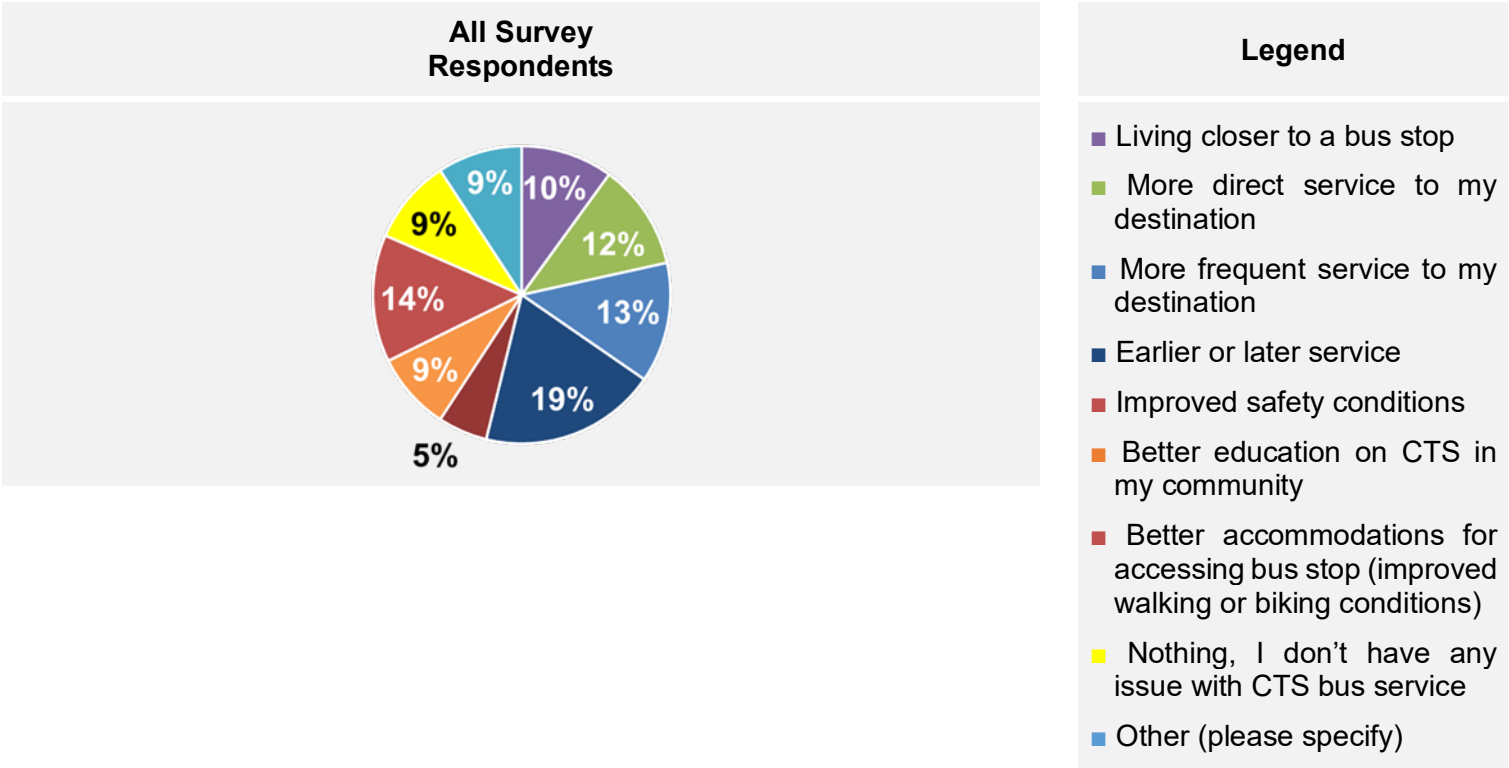
Based on the survey results, the total survey respondents (19%) and in-person survey respondents (25%) were most interested in earlier or later service. The on-line survey respondents (16%) indicated other reasons (listed below) that would make them use CTS or use CTS more frequently.



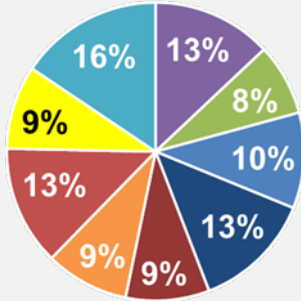
Other' Reponses

- Sunday service
- More shelters, get wet in rain
- More places to sit
- Work
- Sidewalks to Sango Walmart. 7/11 @ Dover - sidewalks to Ft. Campbell
- Expand service to Tennessee Tech
- Sunday service
- To get around.
- Run a half a day on Sunday
- county wide service needed
- Making change, I'm fortunate to live by a car wash My bus runs at 7:30 so finding work is difficult although you schedule says 6:30 ( lack of bus drivers). It would help if we are walking to the bus stop and wave to get picked up. Act like you need the money. Thank you
- Include the county, there are individuals and families who would benefit from service to the city

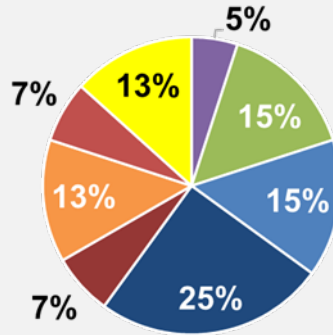
Question 10: What would make you use CTS/use CTS more frequently than you currently do? (Please select all that apply)?



**Online Survey Respondents**



**In-person Survey Respondents**



#### Other' Reponses

- Sunday service
- More shelters, get wet in rain
- More places to sit
- Work
- Sidewalks to Sango Walmart. 7/11 @ Dover - sidewalks to Ft. Campbell
- Expand service to Tennessee Tech
- Sunday service
- To get around.
- Run a half a day on Sunday
- county wide service needed
- Making change, I'm fortunate to live by a car wash My bus runs at 7:30 so finding work is difficult although you schedule says 6:30 ( lack of bus drivers). It would help if we are walking to the bus stop and wave to get picked up. Act like you need the money. Thank you
- Include the county, there are individuals and families who would benefit from service to the city



Question 11: Where does CTS currently not go that you would like it to go? Please provide a destination name and/or address if possible.

The survey included this open-ended response question for survey respondents to identify locations or destinations that CTS does not currently service.

#### Reponses

- South Clarksville
- Edge of Oak Grove – factories
- Everywhere
- Over the river like Central Schools
- Oak Grove
- Extend to Dover Road
- Weatherly Drive
- Cunningham Lane
- Casino
- To the Nashville Exit 11 Park and Ride
- Oak Grove (Walmart)
- Hazelwood Elementary (so I don't have to cross roads)
- Tennessee Tech
- Nashville Park and Ride
- Industrial Park
- Park and ride @ exit 11 (with connection to 94X) Hilltop/Foodlion Hwy 48
- Sam's Club
- Factories, I wish y'all would partner with them to help us schedule work. Thank You
- Montgomery county, service outside of city limits
- TRANE company, it's had crossing the busy street.
- Exit 11, Connect too the greyhound bus
- Pass Walmart on Madison
- Sam's club grocery store on William Rudolph
- The mall.

### Question 12: Is there anything else you would like to say about CTS?

The survey included this open-ended response question for survey respondents to share any additional comments on CTS and CTS services.

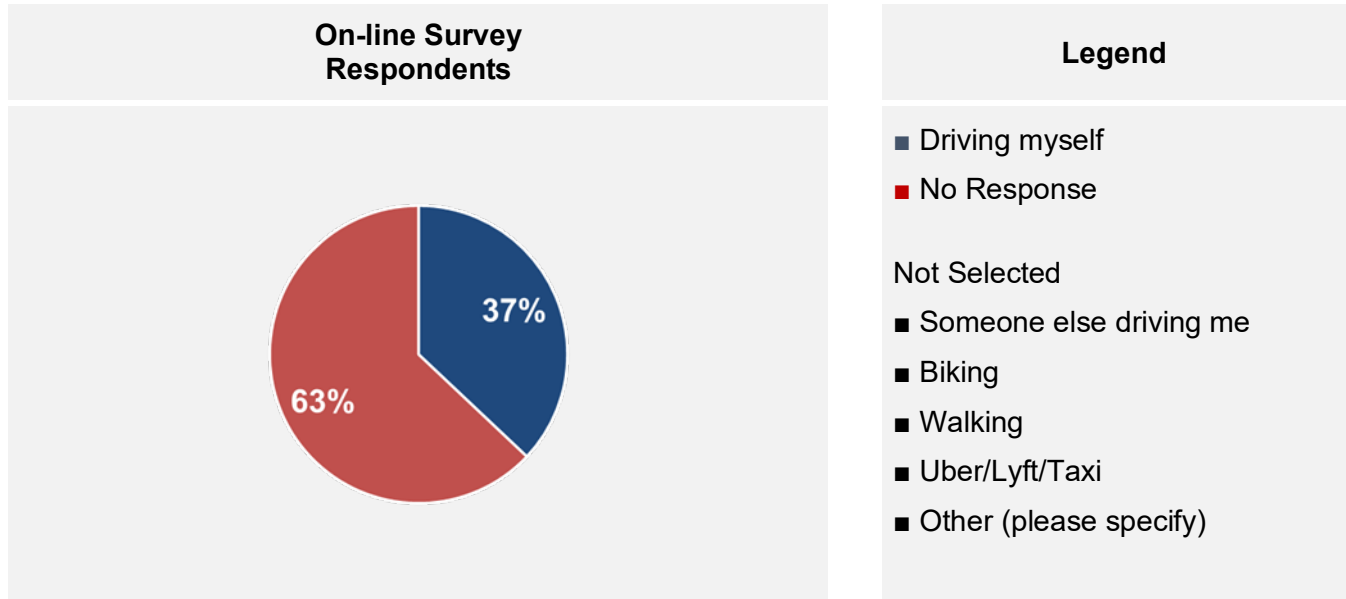
#### Reponses

- I love everybody
- Better driver attitude
- Doing a great job.
- CTS is awesome!
- Awesome
- We need 7 day a week bus routes
- It's cool beans.
- A couple drivers not people-oriented. Kneeling process should be used more frequently.
- They good job
- Please do Question 16
- How people that work at CTS talk to disabled people, we don't understand stuff like other people. Like a hearing impaired person.
- Very convenient, but I wish the stops I used were shaded or maintained regularly.
- Most of the bus drivers are cool
- Good about moving people along. No loitering. No homeless. Very clean.
- It is nice to see the bus stop covers on some stops, but the one at APSU on College Street does not have one. During inclement weather, there is no where for us to stand. Also, there is not a cross walk at that bus location to cross College Street. Many of times, people crossing the street at the bus stop location are taking a huge chance in getting hit by speeding cars.
- Gor drivers not to complain about putting in a wheelchair and correctly straping me in
- When buses are running late and then you have to wait for a hour to get home because the route you live on is only every hour during summer time it is not safe for older people. There should be a van or something for those people to get where they need to be without harm.
- It would be nice if a driver is having a problem with a rider that someone show up to help the driver rather than me the rider have to protect the driver.
- Route 8. Driver did not stop even I pulled the cable 3 times before the bus stop sign Aug 11, 2023 2:50 - 3:20 pm. Driver is not paying attention. Made me walk 23 minutes under the hot sun.
- I would like to say that CTS transit system is a really nice bus station everybody's helpful if you need help with directions they always answer the phone when you need to know what time the bus is coming and they also have an app where you can track the bus down so I think that's pretty cool

The survey also included two additional questions for survey respondents who indicated that they do not use CTS services. All of the in-person survey respondents use CTS services, so responses to these two questions only reflect responses from the on-line survey respondents.

### Question 13: What is your main source of transportation?

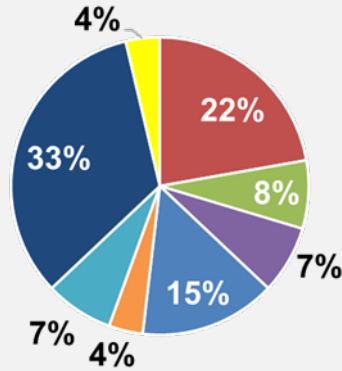
Based on the survey results, 37% of the on-line survey respondents identified 'Driving myself' as their main source of transportation. The remaining on-line survey respondents did not provide a response to this question.



**Question 14: Why don't you currently use CTS to travel? (Please select all that apply)**

Based on the survey results, the on-line survey respondents indicated that they don't currently use CTS services because they prefer using other modes of travel (33%), don't live near a bus stop (22%), or the bus isn't frequent enough.

**Online Survey Respondents**



**Legend**

- I don't live near a bus stop
- The bus doesn't go where I need to go
- The bus isn't fast enough
- The bus isn't frequent enough
- The bus doesn't operate early or late enough to accommodate my schedule
- I don't feel safe or comfortable using bus service
- I prefer using other modes of travel
- Other (please specify)

**Not Selected**

- I transport other people (kids, spouse, etc.) as part of my commute
- Bus fare is too expensive
- I am unfamiliar with bus service



## **Appendix B**

### **Public Workshop Materials**