



Re-imagining Chattanooga's Gateway



CHA AIRPORT DISTRICT MASTER PLAN STUDY

August, 2019





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1 INTRODUCTION

Provides a general overview of the study area and purpose of the study.



▶ CHATTANOOGA METROPOLITAN AIRPORT ENTRANCE

INTRODUCTION



Since 2010, the Chattanooga metro’s population has grown nearly 5.1 percent and it is the 4th largest and oldest city in Tennessee. Chattanooga has a population of approximately 179,000 residents. Due to metro population increases, the Chattanooga Metropolitan Airport has also experienced growth. Passenger boardings in 2017 were a half-million, up 67 percent since the start of the decade. As a result, the Airport has added gates for arriving and departing aircraft, added new security checkpoints to accommodate the increased passenger traffic, and added parking for visitors. Due to the record high traffic for the past few years the Chattanooga Metropolitan Airport Authority is currently updating their Airport Master Plan (airport proper) in an effort to meet the unprecedented growth at Lovell Field and ensure the Airport facilities and infrastructure are adequate for the future. This effort has helped to initiate this study, an opportune time to also investigate the area surrounding the Airport in order to plan compatible future land uses and to assess if additional land is needed for the Airport’s growth and ancillary uses and businesses that could be accommodated in the vicinity. The study provides an opportunity to align regional economic growth with the Airport. As a result, the Chattanooga Airport Authority and the City of Chattanooga hired Stantec & MXD to conduct a Master Plan Study for the area surrounding the Airport.

The Study goal is to provide a comprehensive guide for future development of the properties located within the Chattanooga Airport District with recommendations relating to market strategy, land use and urban design. This master plan for the Airport District will allow the City of Chattanooga to take full advantage of its resources. This plan will also identify opportunities for new housing and a sustainable number of new businesses and jobs which capitalize on the region’s key economic drivers and unique attributes.

The vision for the Chattanooga Airport District Master plan is to create “A Gateway for Chattanooga and a Connected Community”. This can be achieved by considering practical approaches for building upon the assets of the Airport District and making it an even better place to live, work, play, and visit. This Study investigates retail, office, light industrial, hotel, and multi-family residential for redevelopment of parcels in the Airport District. An action plan includes the examination of specific parcel redevelopment and development potential, supported by a retail/market analysis which aims to boost economy activity and inclusivity in the Airport District and better connect it with the booming Chattanooga economy.

5.1%
**CHATTANOOGA
METRO
POPULATION
GROWTH**

67%
**INCREASE IN
PASSENGER
BOARDINGS 2017**

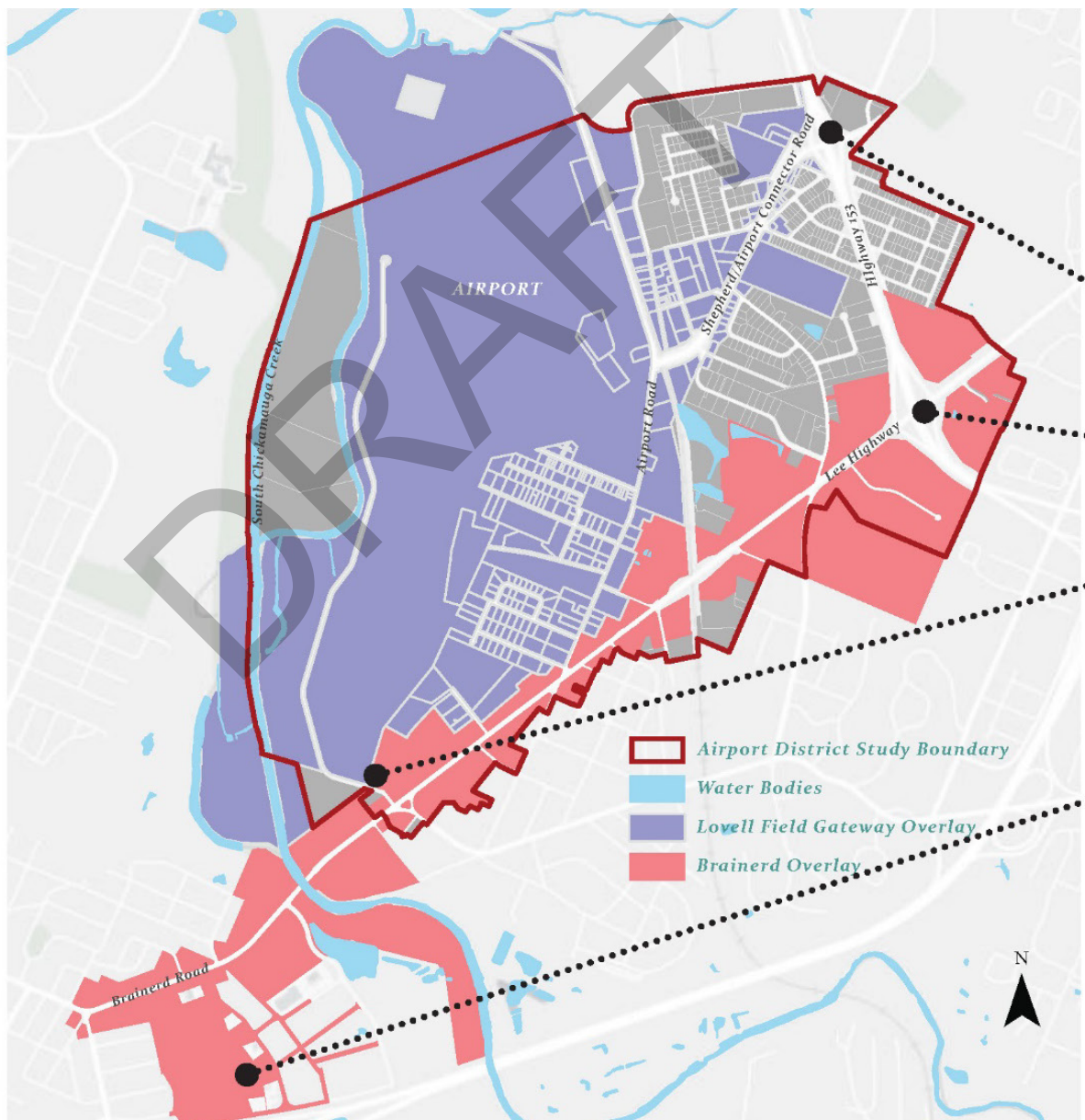
15.6M
**VISITORS TO
CHATTANOOGA -
2017**

1.1 STUDY AREA

The study area includes Lee Highway from the Jubilee Drive intersection in the south, to the Highway 153/ Lee Highway Interchange in the north and Highway 153 between the Lee Highway Interchange and Shepherd Road Interchange. Land uses around the airport only partially support the vision of CHA and the Airport District, representing significant potential for revitalization and redevelopment.

The properties located within the study area boundary are predominantly industrial, low density residential, and strip commercial development. Industrial and residential uses are clustered along Airport Road and Shepherd Road, and the uses along Lee Highway are primarily commercial development.

The Airport is a key gateway to the City of Chattanooga and has seen rapid growth in the past four years. The Airport currently services three major



► STUDY AREA

carriers to six international hubs. Enplanements (passenger boardings) have risen from 309,235 to 484,517 between the years 2013 and 2017, a 56.6 percent increase. In 2008 the direct number of jobs provided by the Airport was 963. The projected number of employees that will be needed by 2028 is 1,600 amounting to a 66 percent increase. A masterplan for the Airport proper is currently being undertaken to assess the Airport infrastructure that will be needed for a 20 year projection. As the

Airport continues to grow as a major employment center and transportation hub, it is estimated that there will be impacts on surrounding infrastructure and economic development. A planning study of the broader Airport area will aid the City in assessing much needed infrastructure improvements and accommodate growth in employment and amenities while protecting existing neighborhoods.

**ACRES:
2416 ACRES INCLUDING AIRPORT PROPER
1880 ACRES EXCLUDING AIRPORT**

**JUBILEE DRIVE TO 153 LEE HIGHWAY
INTERCHANGE UP TO SHEPHERD ROAD 153
INTERCHANGE**

EASTGATE MALL TOWN CENTER

1.2 EXISTING PLANNING STUDIES & ZONING

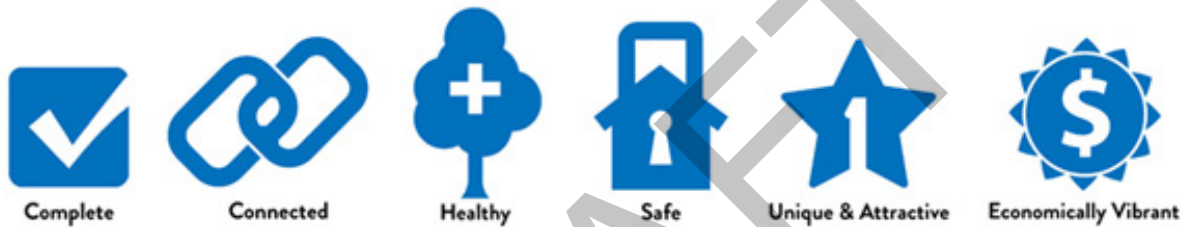
The City of Chattanooga and the Chattanooga-Hamilton Regional Planning Agency have conducted a number of planning studies for the area over the years. Summaries of these studies are discussed below:

1.2.1 COMPREHENSIVE PLAN UPDATE 2030

The City of Chattanooga has a Comprehensive Plan initially prepared in 2009 and amended by the RPA in 2016 and 2018. The purpose of the comprehensive plan, *Renewing Our Vision*, is to provide guidance

for responsible and proactive development decisions. The plan focuses on physical development countywide and incorporates previous planning efforts, professional planning principles, current and projected socioeconomic data, public input, and an analysis of transportation infrastructure and natural resources. The policy recommendations in the plan are based upon six guiding principles.

This Airport District Master Plan seeks to foster these goals by concentrating on redevelopment efforts in the study area that will enable economic growth and encourages a change of public perception of the district.



The Brainerd...A Vision for Today establishes the overall vision for the Brainerd Area and was adopted by the Chattanooga City Council in 2011. The Master Plan outlines what makes a great community and is based upon four primary guiding principles:

- Connectivity
- Diversity
- Durability
- Community

The Master Plan contains an analysis of existing conditions and plan recommendations for redevelopment in the Brainerd Area. The goal is to create a vibrant town center along Brainerd Road and to provide connections to adjacent neighborhoods (Figure 1-1).



FIGURE 1-1 MASTER PLAN

1.2.3 ZONING DISTRICTS & DESIGN GUIDELINES

Three overlays are established within the Airport District. The Brainerd Overlay Zone (adopted in 2011) was written to realize the primary objectives set forth in the Brainerd: A Vision for Today (2011) community plan. In 2018, the Lovell Field Gateway Overlay Zone was added to extend the overlay standards to parcels abutting Airport and Shepherd Road. The third Overlay Zone is the Airport District which was written to conform parcels in the District to FAA regulations limiting heights, uses, setbacks, and landscaping.

LOVELL FIELD OVERLAY DISTRICT

The Lovell Field Overlay Zone (Figure 1-2) was adopted by the Chattanooga City Council in 2011 and amended in March 2018. The purpose of the overlay zone was to adopt zoning regulations that implement the “Brainerd...A vision for Today” Community Master Plan that was adopted by Council in 2011. The primary goal of this master plan was to create a vibrant town center along Brainerd Road and to enhance the corridor that is a key gateway into the City of Chattanooga. The regulations set forth in the Overlay Zone include streetscaping, parking and parking lots, setbacks, landscaping, building heights, and signage. The Airport District Master Plan has incorporated these regulations in the Conceptual Plans for the District.

BRAINERD OVERLAY DISTRICT

The Brainerd Overlay Zone (Figure 1-3) was adopted by the Chattanooga City Council in 2011 and amended in March 2018. The purpose of the overlay zone was to adopt zoning regulations that implement the “Brainerd...A vision for Today” Community Master Plan that was adopted by Council in 2011. The primary goal of this master plan was to create a vibrant town center along Brainerd Road and to enhance the corridor that is a key gateway into the City of Chattanooga. The regulations set forth in the Overlay Zone include streetscaping, parking and parking lots, setbacks, landscaping, building heights, and signage. The Airport District Master Plan has incorporated these regulations in the Conceptual Plans for the District.

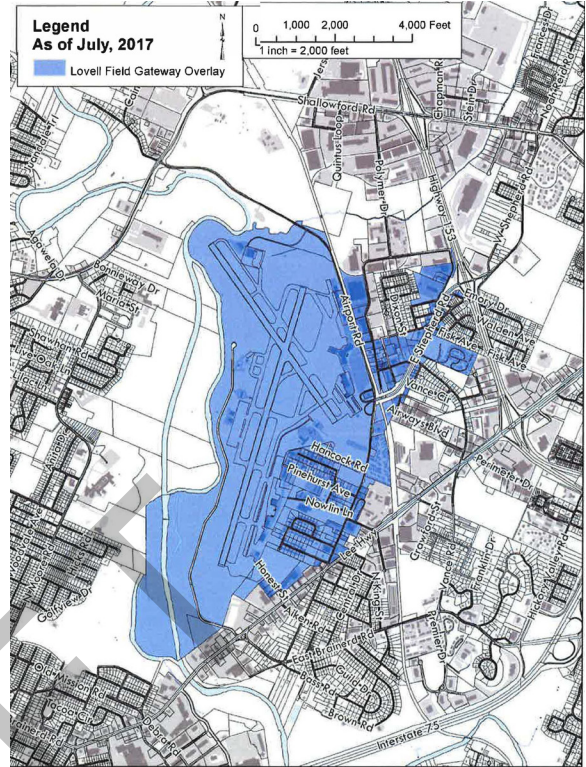


FIGURE 1-2 LOVELL FIELD OVERLAY ZONE

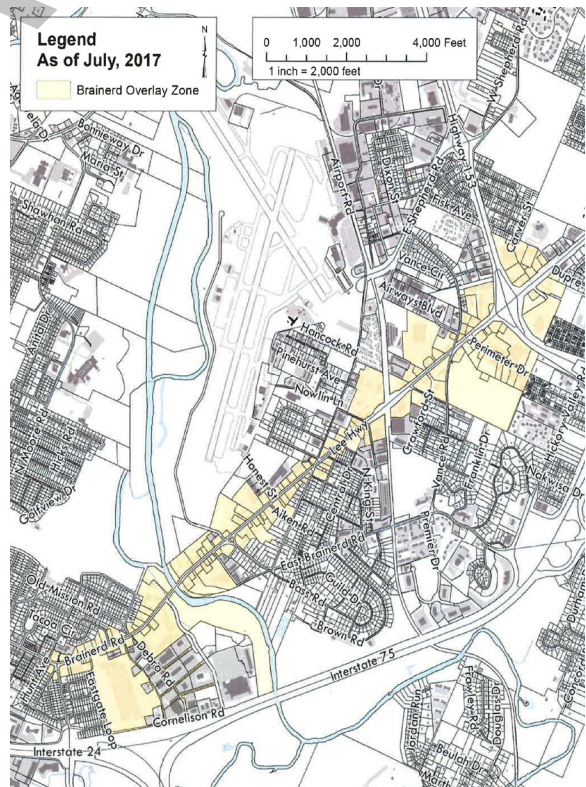


FIGURE 1-3 BRAINERD OVERLAY ZONE

BRainerd TOWN CENTER PLAN & DESIGN GUIDELINES

In 1998, the City adopted the Brainerd Town Center Plan and Guidelines for the former Eastgate Mall site, Brainerd Village, Osborne Office Park, and a golf course bordering South Chickamauga Creek. The adopted plan and design illustrations sets forth a vision for what can be created in this unique location. The main goal of the plan was to keep the mall site and its environs a retail and social center of the community.

Since 1998, several new developments in the area including a Wal-Mart shopping center on the former golf course, two-story businesses fronting a public square, and a variety of other retail enterprises have been developed. The general design guidelines for the town center include the following:

- A hierarchy of human-scaled streets, blocks, lots, and public spaces.
- Streets that are framed on their sides by buildings, forming well-defined public spaces.
- A fine-grained mix of uses, vertically and horizontally, with everyday needs within a five to ten minute walk.

- Incrementally built buildings of durable, reusable form, with wide architectural variety.
- Residents with a mix of income and ages.
- A variety of housing types and sizes to own and rent.
- A recognizable public plaza or square for each neighborhood, and a central common or green.
- Landscape use as a space-definer in public squares and plazas, as a greenbelt, and for shading and ornament (Brainerd Town Center Plan and Design Guidelines, 1998).

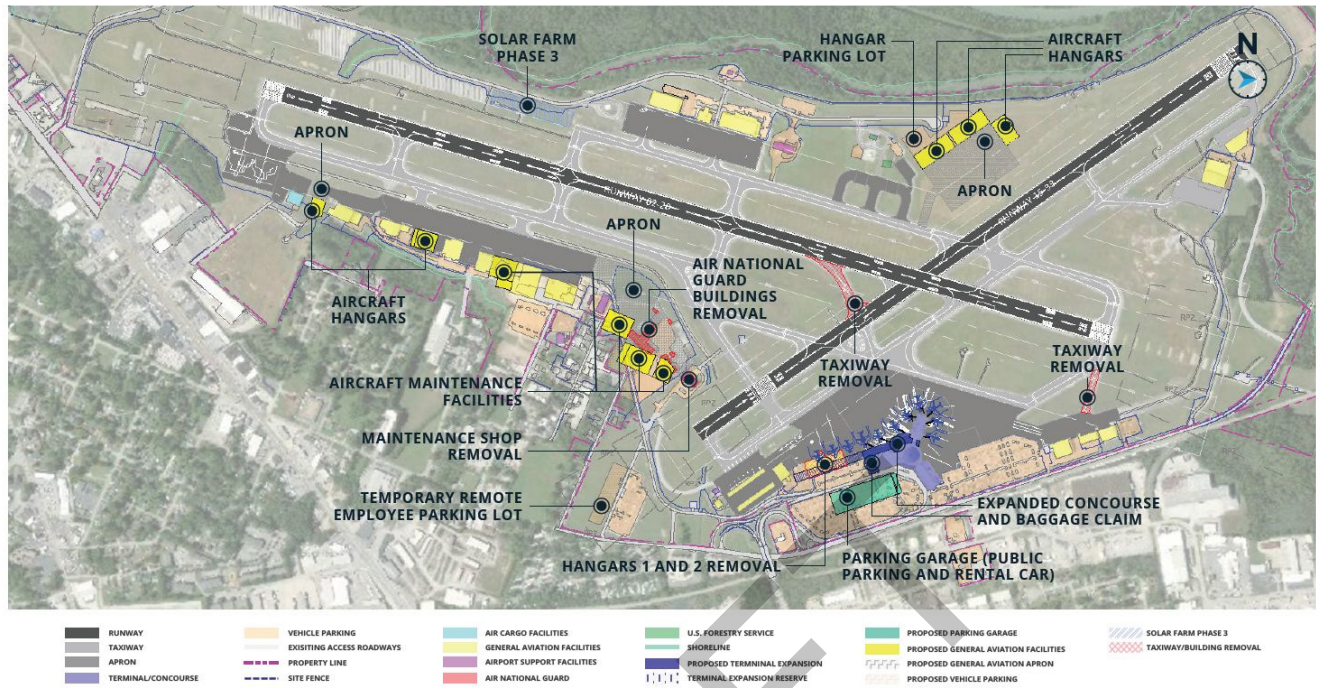
The Airport District Master Plan has incorporated many of these guidelines in the conceptual plans for the catalytic areas and sites within the District.

1.2.4 CHATTANOOGA AIRPORT MASTER PLAN

The Chattanooga Metropolitan Airport has been undergoing an Airport Master Plan update simultaneously with the Airport District Master Plan. The master plan is undertaken by planning firm Intervistas and is to be completed in Spring 2019. The master plan sets out to establish a vision for the fast-growing Airport, focusing on sustainable



RECOMMENDED AIRPORT DEVELOPMENT DRAFT MASTER PLAN 2019



development, fiscal responsibility, and continually improving the customer experience.

The Airport served over 1 million passengers in 2018 and the master plan forecasts that the Airport will serve approximately 1.5 million passengers by the mid 2030's. Aviation operations (landings and takeoffs) continue to grow, up 8 percent between 2017 and 2018, signaling that more aircraft are coming through the Airport and growing the need for future expansion. The Airport will be required to make strategic investments to improve its infrastructure within the passenger terminal building and parking areas.

There are three primary groups of projects that are discussed in the master plan:

1. A new public parking garage that will hold approximately 1,300 public parking spaces and room for upwards of 350 rental cars. The parking garage is to be completed in the next several years.
2. Terminal concourse expansion and more aircraft gates.
3. Continued general aviation development. Additionally, the Airport received \$4 million through a state grant to redevelop the 13-acre

former national guard site located along Rosedale Road, southwest of the main terminal and near the west star aviation campus. West Star aviation is a key employer that is located beside the airside system and recently added new hangar space. The company focuses on maintenance, repair, and overhaul (MRO) and has a goal of employing 225 workers by 2020.

Based on the 2018 master plan, Chattanooga Metropolitan Airport has enough land holdings for its future expansion including the public parking garage and new aircraft gates. There is no indication that there will be future changes to the runway system / noise contours / runway protection zone that could affect a master plan for the surrounding Airport district.

The growth of Chattanooga Metropolitan Airport, from both a passenger and infrastructure point-of-view is beneficial to the re-imagining of the airport district. The activity and energy of a busy and expanding airport can be leveraged to create a proper economic gateway for the city.

Shepherd Community



A HAPPY PLACE TO LIVE

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2 EXISTING CONDITIONS & ANALYSIS

Outlines the existing conditions of the Chattanooga Airport District lands in regard to existing land uses, infrastructure and transportation network.

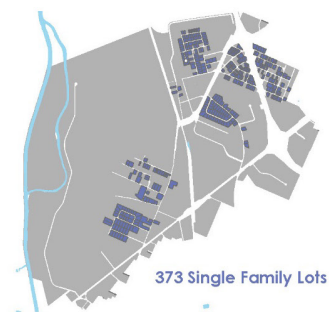
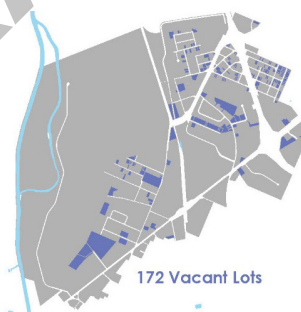
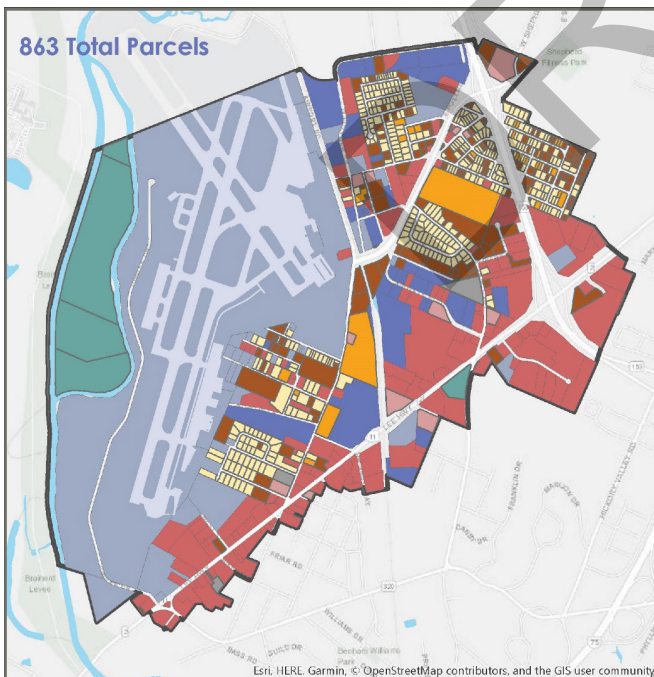
EXISTING CONDITIONS & ANALYSIS

2.1 EXISTING LAND USE

Land Uses and Zoning within the study area Boundary are predominately industrial, low density residential, and strip mall development. Industrial and residential uses are clustered along Airport Road while the majority of commercial development exists along Lee Highway.

Out of the 863 parcels, the top four land uses are Single Family (373 lots), Vacant Lots (172 lots), Commercial Goods and Services (106 parcels), and Manufacturing (45 parcels).

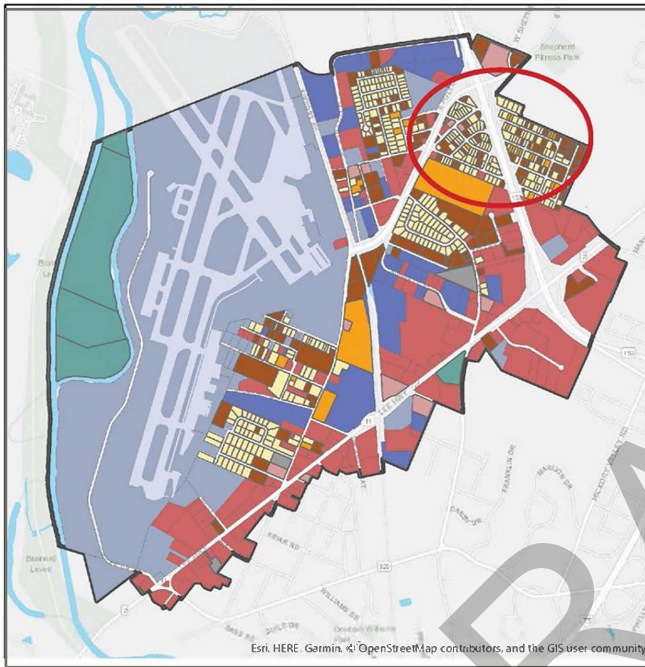
There are three primary roadways that provide access to and from the Airport District Study area. Airport Road is a two-lane road that runs parallel to the Airport property boundary, connecting to Lee Highway to the south and Shallowford Road to the north. Shepherd Road (aka Airport Connector Road) serves as a gateway from the airport to the Highway 153 interchange. A segment of Lee Highway falls within the study area and also the Brainerd Overlay. The existing roadway conditions are provided in section 2.3 of this Airport District Master Plan Study.



2.1.1 RESIDENTIAL

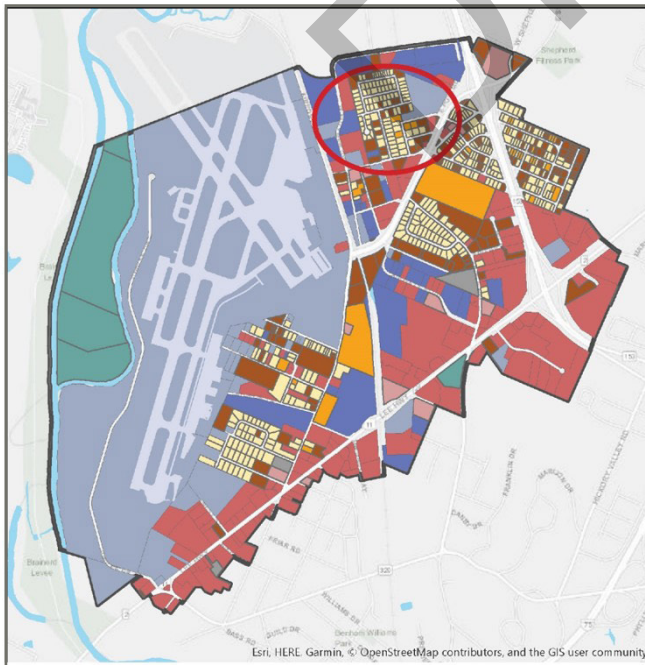
A number of residential communities are located within the study area. The Shepherd Community consists primarily of single family homes and is surrounded by industrial development. There are a number of vacant residential lots in the community that have potential for small-scale infill development.

There is also a small pocket park located on Shepherd Road. Along the west side of Shepherd Road there are signs of community reinvestment and pride in the community as properties are well maintained. In addition, a number of new homes have been built in this area as well.



Shepherd Community

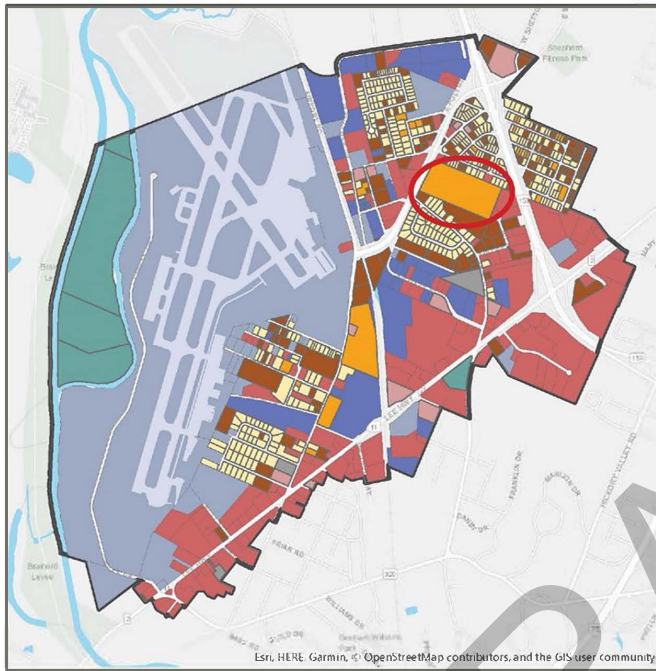
- Place attachment and community pride
- Signs of Investment and maintenance
- Vacant lots through-out, infill opportunity for housing stock
- Small parklet off Shepherd Road



W. Side Shepherd Road

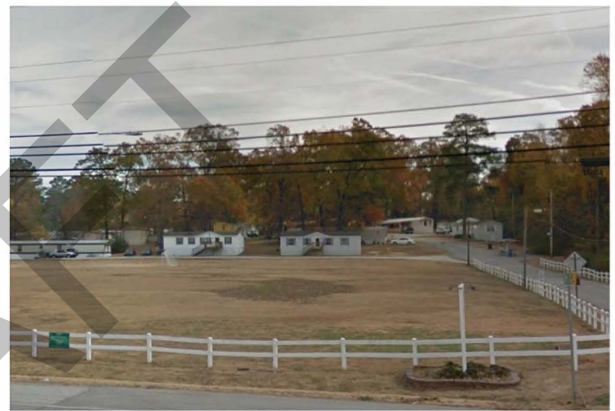
- Surrounded by Industrial
- Signs of Investment and maintenance
- New homes (shot gun houses)





Acres of Shade Mobile Home Park

- Signs of place attachment and community
- Large field in front is used as a soccer field
- Largely Hispanic population



Vance Road

- Single story ranch
- Signs of Investment and care
- Large tracts of land, opportunity for infill
- Large vacant tract to the North owned by Adamson Developers





Contiguous Airport Transitional Community

- Mix of Single Family homes
- Light Industrial
- Commercial Services
- A number of large vacant lots



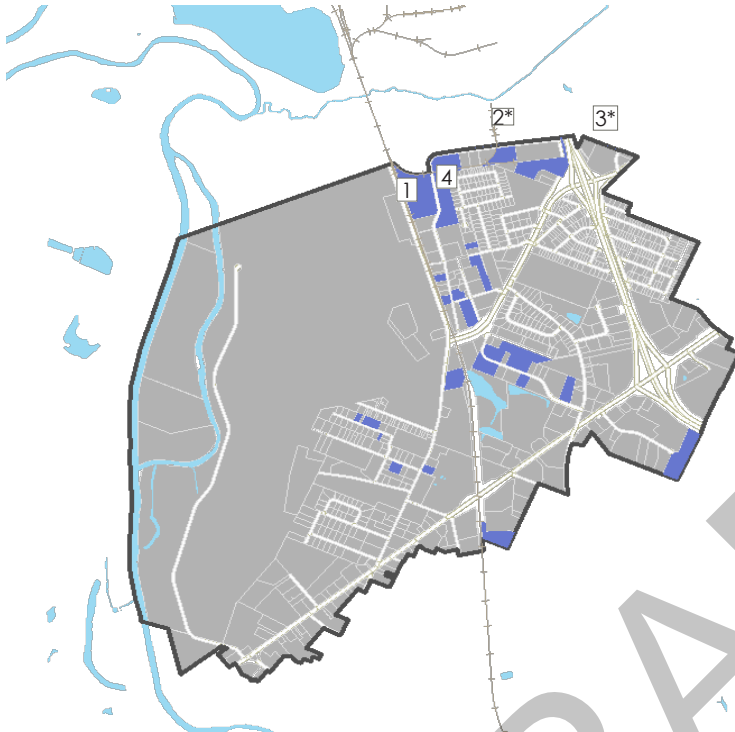
Contiguous Airport Stable Community

- Single Family ranch style homes
- A few vacant lots



2.1.2 MANUFACTURING

There are a number of light and heavy manufacturing (Industrial) parcels that are located within and/or the surrounding area of the study area.



HEAVY MANUFACTURING

1. Lectus Corporation

Metal Enclosure Fabrication, 100 Employees, Engineers, Fabrication, Sales

2. BASF*

Polymer Dispersion, 130 Employees

LIGHT MANUFACTURING

3. Coca Cola Bottling*

2111 W. Shepherd Road, 500+ Employees

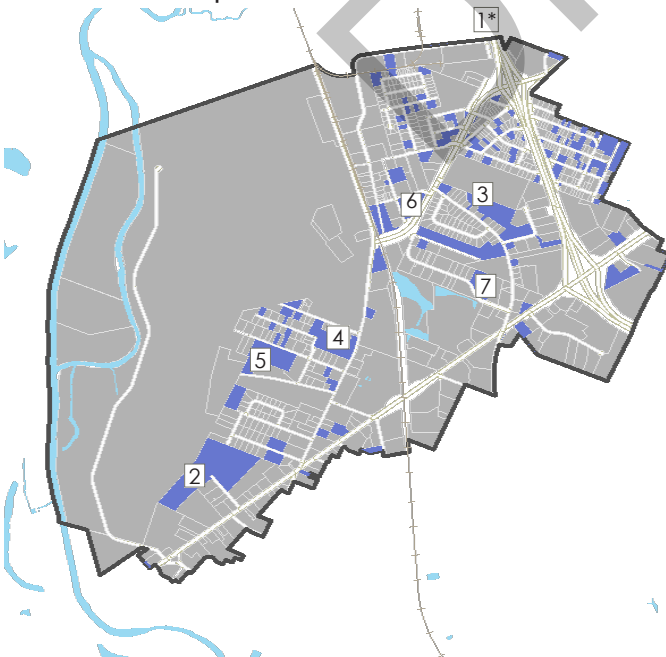
4. Arch Plastics

Pharmaceutical Bottling, 65 Employees

*These businesses are located outside of the study area boundaries.

2.1.3 VACANT LOTS AND BUILDINGS

The study area also contains a number of vacant lots and underutilized buildings in the vicinity of the airport. These parcels provide opportunities for catalytic economic development for the District and could spur economic development.



1. Nova Chemicals, 26 acres*

Eastern Adjacent Property to BASF
Zoned M-1

2. Airport Contiguous Properties, 31 acres

Zoned R-3 and/or M-2

3. Adamson Development, 5.74 acres

Zoned R-3 Multi-family residential

4. Dillard Partnership, 5.39 acres

Zoned M-2

5. CMAA, 6 acres

5960 Pinehurst Ave.
Zoned R-3 Multi-family residential

6. Thrifty Car Rental, 3 acres

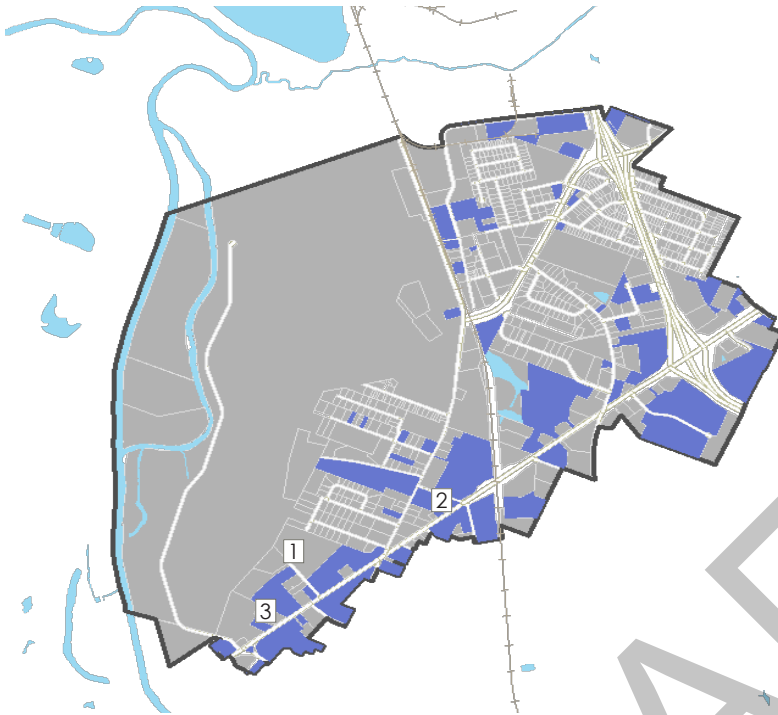
1624 Shepherd Road
Zoned M-1

7. Expert Management Inc., 3.33 acres

Zoned R-3 Multi-family residential

*These businesses are located outside of the study area boundaries.

2.1.4 COMMERCIAL AND OFFICE



1. TJ Snow Welding Supplies, 12.25 acres
90 Employees

2. Office Complex
50 percent vacant building

3. Buildings at Airport Road-Lee Highway Intersection
50 percent vacant building (potential improvement gateway area)

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2.1.6 INFRASTRUCTURE - ROADS

There are three primary gateways existing within the Airport District; 1) Airport Road, 2) Shepherd Road, and 3) Lee Highway. These gateways are discussed in the Transportation section of this Master Plan Study.

2.2 TRANSPORTATION & INFRASTRUCTURE ANALYSIS

The transportation and infrastructure analysis includes the street network, parking, walking infrastructure, bicycle network, public transit, parking, and accommodations for current mobility services such as Lyft, Uber, EVs and in the near-future Autonomous Vehicles. We also include a summary of current initiatives and plans such as rail feasibility and express shuttle concepts. The structure follows an assessment of existing conditions and identification of opportunities.

2.2.1 NEIGHBORHOOD TRAVEL PROFILE

Based on American Community Survey (ACS) journey to work data, local residents located within the study area predominantly depend on their cars to get to work. Over 80 percent of the local population drives alone to work, 7 percent carpool, 6 percent work at home, and 2 percent walk. Notably, the data records 0 percent taking public transportation to work. These trends have held steady over the last decade, if anything they show a slight increase in the drive alone mode share. Half of all workers reported journey to work time of less than 15 minutes.

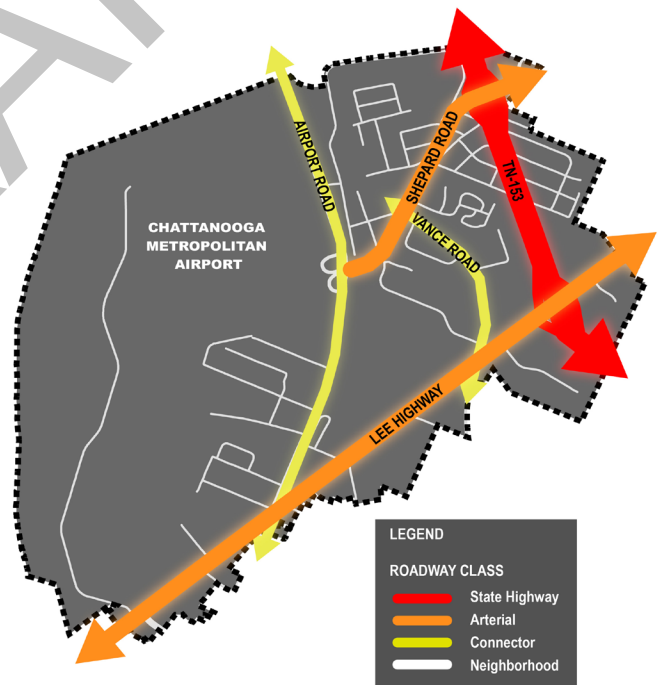
Household Vehicle Ownership

The presence of households with low or no vehicle ownership is a good indicator of latent demand for better multi-modal infrastructure and public transit. Based on ACS data, 7 percent of all households within the study area have no vehicle available and almost 50 percent have only one vehicle, and 15 percent of households with 2 or more persons have only 1 vehicle available. This speaks strongly to a need for greater mobility choice and safety for non-driving modes and public transit.

2.2.2 STREET NETWORK

The street network in the study area is characterized by higher-volume, vehicular-oriented arterials (Shepherd Road), strip commercial corridors (Lee Highway) and adjoining small-scale neighborhood streets (Nelson Drive, Walden Avenue) and some dead-end access roads serving industrial districts (Airways Boulevard).

There is limited east-west street connectivity between the neighborhoods and the Airport's eastern edge. To get Downtown it is necessary to travel either north on Highway 153 or south on Lee Highway. Both are congested, especially in the peak hour. Vance Road provides the only continuous east west connection between the Airport, Shepherd Community and Lee Highway.



STREET NETWORK

Key roadways are described below:

Lee Highway is a five-lane roadway including a continuous center-turning lane. Infrastructure serves vehicular-oriented strip retail with opportunities available to capture local trips with neighborhood access management. Limited sections are improved with sidewalks. The road itself is a walking and biking barrier for neighborhoods located immediately north and south. Land uses include both regional and local destination services. Infrastructure is primarily oriented for regional, car trips as opposed to local trips on foot, bike or on transit.

The Critical Crash Rate is a methodology that yields an average crash rate for intersections of similar capacity and geometry in the State. Actual Crash Rates of intersections within the study area can be compared to the Critical Crash Rate to assess safety concerns and potential needed intersection improvements. The Actual Crash Rate of an intersection is divided by the corresponding Critical Crash Rate which yields the R/Rc Ratio. An R/Rc ratio under 1 signifies that the intersection is operating better than intersections of similar geometry and traffic volume within the State. An R/Rc ratio over 1 indicates that the intersection is operating worse than similar intersections within the State.

Critical and Actual Crash Rates were obtained from the TDOT Titan database to assess intersection safety concerns within the Airport District. Lee Highway has a number of intersections with a higher concentration of crashes than other intersections in the study area. These are listed in order of severity below:

- Vance Road and Lee Highway has the highest crash rate of the intersections analyzed in the study area. The Actual Accident Rate at this intersection is 1.55 slightly above the Critical Accident Rate of 1.22. The ratio of the two is 1.27 indicating that this intersection is operating worse than other intersections of similar geometry and vehicular capacity in the State.

R = Actual Accident Rate
Rc = Critical Accident Rate

$$R/Rc = 1.55/1.22$$

$$R/Rc = 1.27$$

- Airport Road, Lee Highway, and Chickamauga Road has an Actual Accident Rate of 1.41 higher than the state-wide Critical Crash Rate of 1.19. This yields an R/Rc ratio of 1.18, indicating that this intersection operates slightly worse than other intersections of similar traffic volume and geometry in the State.

$$R/Rc = 1.41/1.19$$

$$R/Rc = 1.18$$

- Jubilee Drive, Lee Highway, and E. Brainerd Road has an Actual Accident Rate of 1.10, slightly below the Critical Crash Rate of 1.15, yielding an R/Rc ratio of .96. While the Actual Accident Rate is approaching the Critical Crash Rate at this intersection, it is still operating slightly better than other intersections of similar geometry and capacity within the State.

$$R/Rc = 1.10/1.15$$

$$R/Rc = .96$$

TABLE 2-1 STUDY AREA (RECORDED) CRASH TYPES

Type of Collision	Count
Angle	353
Head On	23
Not A Collision with Motor Vehicle	150
Rear End	532
Sideswipe	162
Grand Total	1220

Source: ASDA Collisions 2011-2015

Table 2-1 summarizes crash locations based on available TDOT data. Based on the heat map (Figure 2-1), high crash clusters are all located on Lee Highway at four key locations including the Highway 153 and Lee Highway interchange, Vance Road, Airport Road and East Brainerd Road/ Jubilee Drive intersections. The more common crashes are angle and rear end collisions. These types of accidents are characteristic of corridors such as Lee Highway with multiple curb cuts and left-turning vehicles. Angle collisions also reflect awkward geometry at intersections. Based on field visits, poor sightlines, confusing intersections and irregular, offset road geometry would all be contributing factors to accidents.

Shepherd Road - a key focus of this study - has 80 feet of paved width and includes a hard shoulder, two travel lanes in each direction, and a continuous center turn lane. It is curbless and abutted immediately on both sides by a drainage ditch. Daily vehicular volumes have steadily increased over the last ten years. Today the roadway carries approximately 13,000 - 15,000 vehicles daily. The City has currently committed \$650,000 for Shepherd Road improvements that includes a multi-use path and street trees on the South side of the Road. Construction completion is estimated for the spring of 2020.

Vance Road is the only road within the study area providing continuous connectivity between neighborhoods on either side of Lee Highway, Highway 153 and Airport Road. As such it is used as a cut-through route for traffic destined for the airport. While it functions as an informal arterial catering to regional traffic it is designed as a modest neighborhood road with one travel lane in each direction and mostly single-family properties immediately abutting the public right of way. Vance Road is a particular safety concern catering to regional traffic, it is designed as a modest neighborhood road with one travel lane in each direction and mostly single-family properties immediately abutting the public right of way. Vance Road is a safety concern for local residents with a lack of sidewalks and high vehicular speeds.

Airport Road was identified during stakeholder meetings and community workshops as unsafe for those who travel on foot between the Greyhound station and local bus service on Lee Highway. Concerns about the open stormwater ditches and frequent localized flooding of the narrow roadway were also expressed during the public outreach events.

Stormwater data illustrates that much of the stormwater infrastructure on Airport Road is at capacity or breaches capacity for as little as a two-year storm event (see Stormwater Analysis Section 2.3). While there is no data available for pedestrian trips on Airport Road, the City uses an aggregate index of major destinations (schools, grocery stores, transit stops, employers, parks, and retail locations), known as the Pedestrian Potential Index (PPI) (See

Figure 2.4). This tool helps to prioritize the need for pedestrian infrastructure projects city-wide by visualizing the proximity of people to major destinations, therefore, indicating the potential for pedestrians in a given area. Lower concentrations display as lighter colors and higher concentrations as darker colors on the PPI map. Concentrations along Airport Road register as low to medium (range 3-4). Alternatively, concentrations along Lee Highway are within the medium range particularly around the catalytic sites (range 5-6).

Two scenarios for Airport Road were assessed (obtained from previous Chattanooga Department of Transportation conceptual design documents). Both concepts show an 8-foot sidewalk from Lee Highway to the Greyhound Bus Station along the western side of the road. One scenario locates the sidewalk over the existing drainage ditch. In this instance, costly stormwater infrastructure (piping, culverts, manholes, and drain inlets) make a sidewalk along Airport Road less cost effective as a near term project (see Appendix 2). In the second scenario, the sidewalk is placed at the back of the drainage ditch which avoids costly stormwater investments, but is offset by the need to acquire right-of-way from private land owners (often a complex multi-year process). Furthermore, locating the sidewalk at the back of the stormwater ditch would not address flooding issues along Airport Road.

By prioritizing near term public and private investments that align with catalytic site development, a longer term Airport Road project becomes more cost effective as population and major destinations (pedestrian potential) increase within the Airport District.

Typical neighborhood streets such as Nelson Drive, Friar Road, and Chickamauga Road were designed in the automobile era and are unsafe for trips on foot and by bicycle. Small-scale neighborhood blocks characterize the Shepherd Community and west side of Shepherd Road (to the north of the study area) and Vance Road. Meharry Lane connects residents on the east side of Route 153 to jobs in the Shepherd Road area, however, many of these roads suffer from disrepair and due to constraints in the City roadways budget and greater need elsewhere in the City, they compete for limited funds. There are also some

larger blocks accommodating standard foundation (mostly ranch style homes) and neighborhood streets to the immediate west of Airport Road. In all cases, local streets are narrow, paved, typically unmarked and curbside streets with some, informal, unregulated street parking. Key roadways such as Van Ness, Chickamauga Road, Meharry, and Shepherd Road all of which connect neighborhoods, local retail, services and employment centers should be prioritized for investment in walking and human-scale transportation improvements.

Roadway Capacity and Volumes

Limited data is available for area roadways. The biggest growth in ADT is at Shepherd Road intersections with Highway 153 and Airport Road. Vance Road and Lee Highway, the only other two locations for which data is available, show declines since 2010 (see Figures 2-1 through 2-3).

All roadways for which there is data have sufficient capacity for existing vehicle traffic. According to this data, all operate at a "LOS" or Level of Service of B or better – or with minimal delays for drivers. Highway 153 has a higher vehicle to capacity ratio than other roadways in the area, but still operates well within the range of free-flowing vehicle traffic.

The data indicates there is flexibility to re-consider roadway cross-sections that contain multiple travel lanes, such as Shepherd Road (LOS A), for potential re-design without negatively impacting traffic flows.

Parking

The study area contains extensive, privately-controlled surface parking. This includes lots serving commercial uses, retail and industrial uses. Neighborhood streets have informal street parking. It is understood that parking is approaching capacity at the airport.

Opportunities

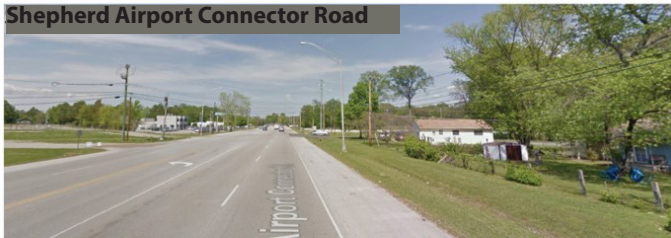
- Potential to improve safety through re-design of critical Lee Highway intersections including:
 - a. East Brainerd Road/Jubilee Drive
 - b. Airport Road/Chickamauga Road
 - c. Vance Road
- Intersection upgrades also provide an

opportunity to improve on-foot access to local CARTA stops – particularly those served by Route 4.

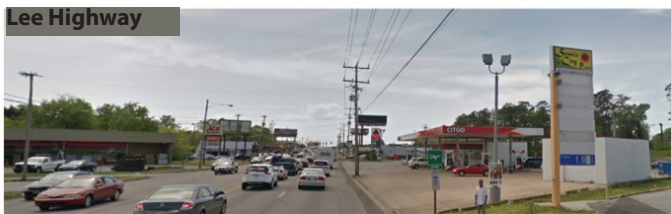
- Opportunity to build to the City's Complete Streets policy by creating better pedestrian and biking connections to major destinations within the Airport District.
- To better separate regional trips generated by airport demand and local trips. This would ideally reduce airport-related traffic on roadways such as Vance Road by diverting demand to Shepherd Road.
- Area is seeing development of higher quality multi-family units in the Vance Road vicinity providing an opportunity to work with developers to enhance nearby Multi-modal Infrastructure on Shepherd Road.
- Vance Road is used as a cut through for vehicles destined to the airport. There may be opportunities to divert this traffic, although this would require creating a new connection from Lee Highway to Shepherd Road. The Study team looked at Airways Boulevard as a location for a potential new connection. Land uses on this street are industrial and may benefit from a more direct connection to Shepherd Road. However, there are challenging grade changes that would make this a potentially expensive solution.
- The City is already prioritizing funding for Shepherd Road improvements.
- Access Management.



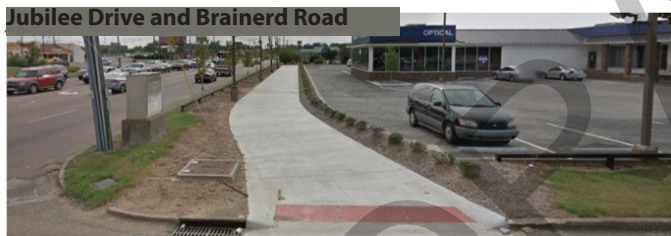
AIRPORT ROAD LACKS BASIC WALKING STRUCTURE.



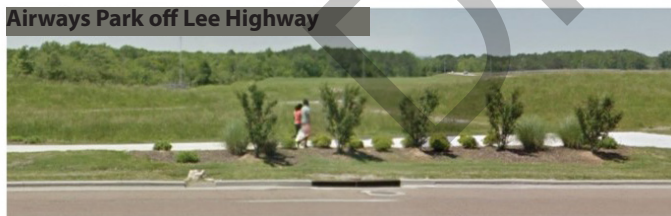
SHEPHERD ROAD HAS NEW WALK INFRASTRUCTURE THAT SUPPORTS FOOT TRAFFIC.



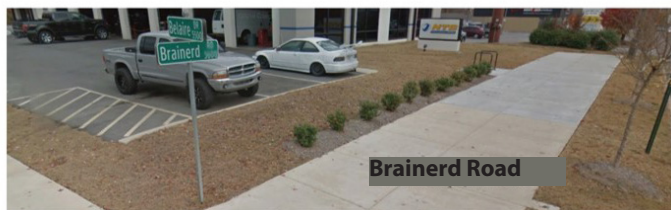
LEE HIGHWAY, DESPITE HAVING MANY NEIGHBORHOOD SHOPS, IT LACKS CONTINUOUS WALKING AND BIKING INFRASTRUCTURE.



JUBILEE DRIVE AND BRAINERD ROAD HAVE IMPROVED SECTIONS WITH A SHARED USE PATH.



AIRWAYS PARK IS EXCESSIVELY WIDE AND LACKS CONTINUOUS SIDEWALKS.



BRAINERD ROAD - REDEVELOPMENT OF PARCELS REQUIRES SIDEWALKS ARE RECONSTRUCTED.



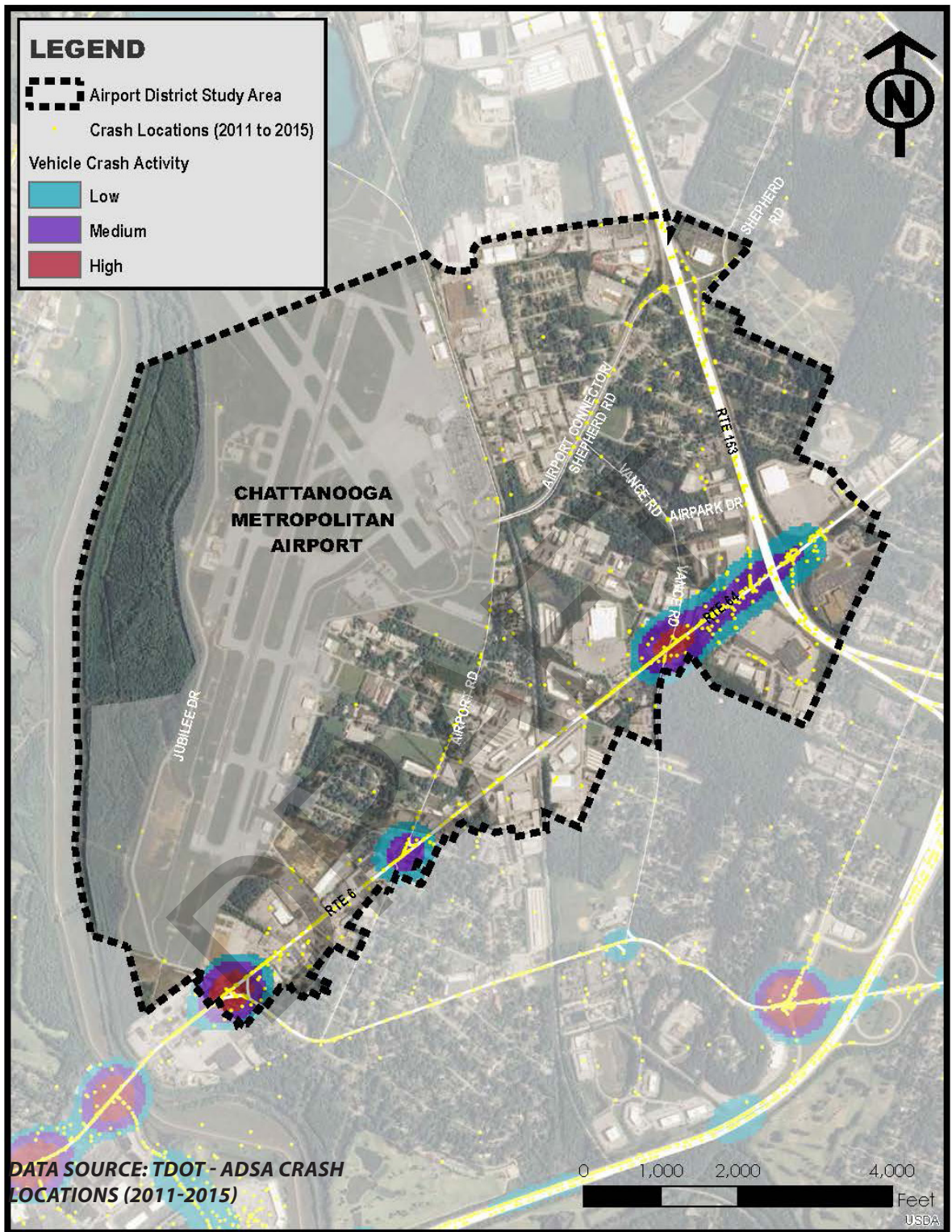
SHEPHERD ROAD HAS AN EXCESSIVELY WIDE CROSS SECTION BASED ON DAILY TRAFFIC VOLUMES. SIDEWALKS WERE ADDED RECENTLY ON THE EAST SIDE AS PART OF THE RE-DESIGN OF THE HIGHWAY 153 INTERSECTION.



THE INTERSECTION OF JUBILEE DRIVE, LEE HIGHWAY AND EAST BRAINERD ROAD EXPERIENCES HIGH NUMBERS OF CRASHES. CONFUSING GEOMETRY AND OFFSETS IS A CONTRIBUTING FACTOR.



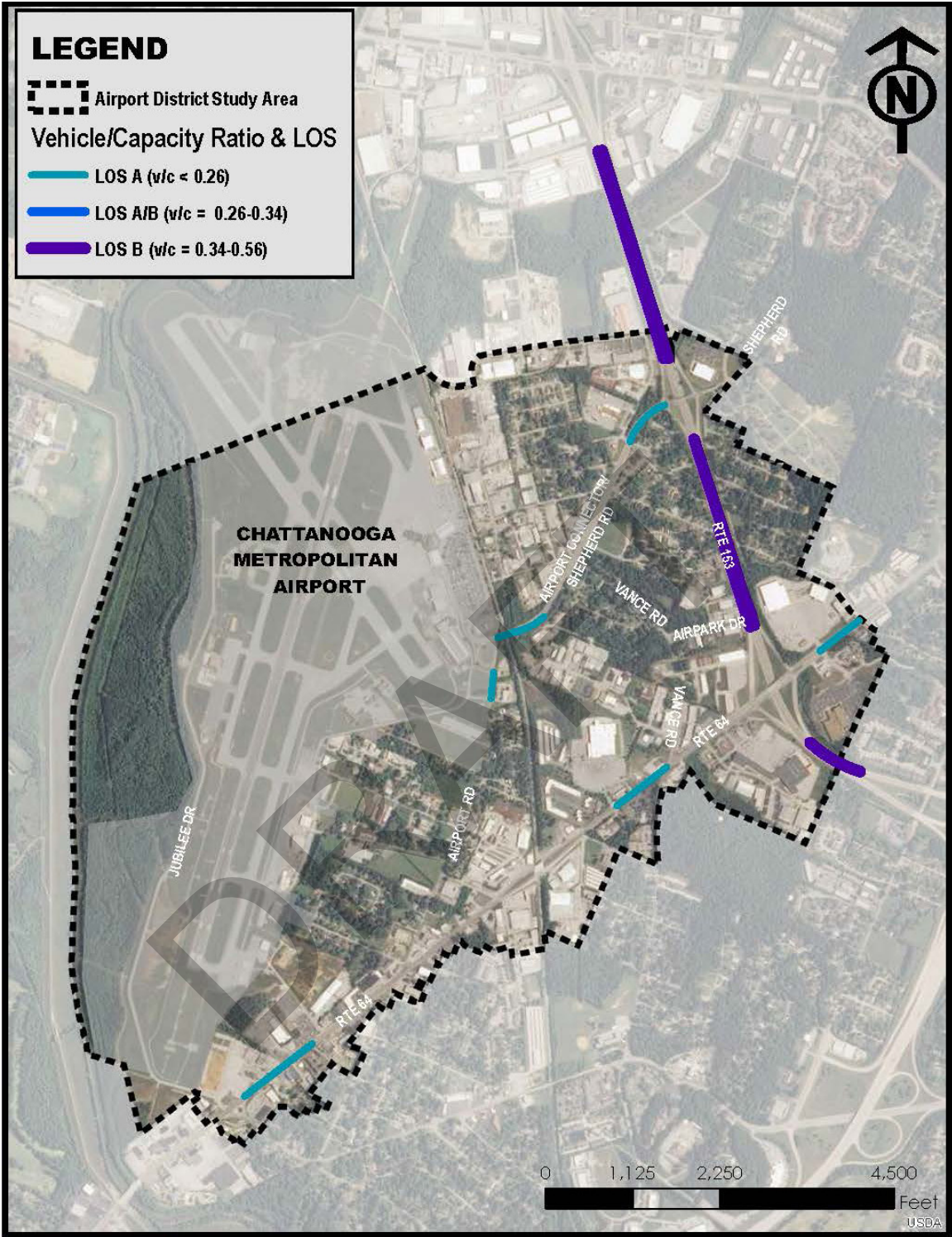
LONG-TERM, OVERFLOW PARKING IS AVAILABLE ONLY TO THE NORTH OF THE AIRPORT DISTRICT.



**VEHICLE CRASH ACTIVITY MAP
CHATTANOOGA AIRPORT DISTRICT**



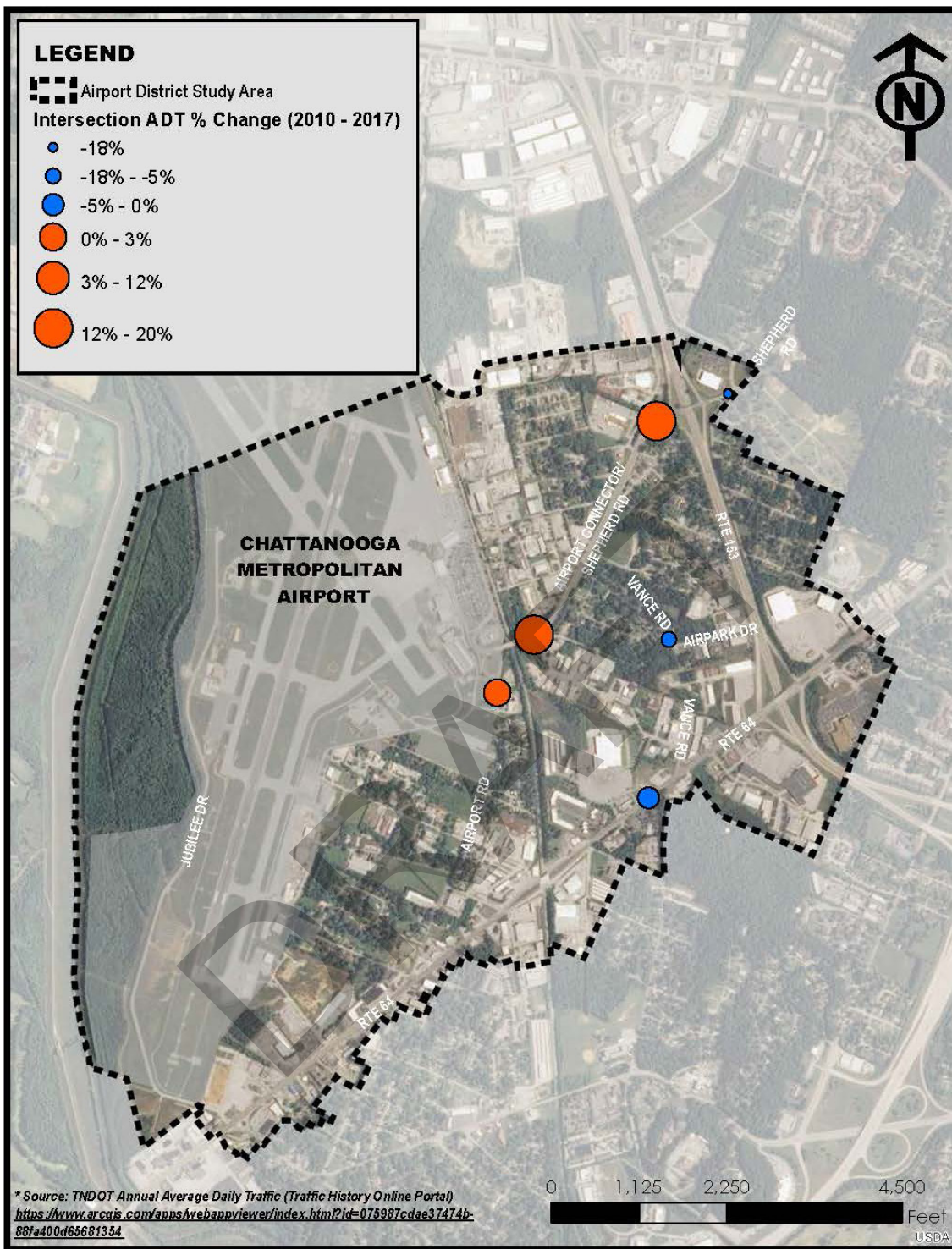
FIGURE 2-1 VEHICLE CRASH ACTIVITY MAP - CHATTANOOGA AIRPORT DISTRICT. THIS IS A PLANNING-LEVEL ANALYSIS OF AVAILABLE CRASH DATA BASED ON FREQUENCY OF CRASHES BY LOCATION. THE GOAL IS TO IDENTIFY HOT SPOTS WITHIN THE STUDY AREA.



**VEHICLE/CAPACITY MAP
CHATTANOOGA AIRPORT DISTRICT**



FIGURE 2-2 VEHICLE/CAPACITY MAP - CHATTANOOGA AIRPORT DISTRICT



**INTERSECTION ADT DATA MAP
CHATTANOOGA AIRPORT DISTRICT**



FIGURE 2-3 INTERSECTION ADT DATA MAP - CHATTANOOGA AIRPORT DISTRICT

2.2.3 WALKING AND BICYCLE INFRASTRUCTURE

Walk Network

The study area contains a very limited walking network and no bicycle infrastructure. Residential neighborhoods are no exception, entirely without sidewalks, curbing or basic stormwater infrastructure.

Local neighborhood streets, including those within a short walk of local neighborhood retail provide only car-oriented infrastructure. This encourages all local trips, even those within a short walk, to be taken by car. Airport Road, particularly to the south between the intersection with Lee Highway and the Airport entrance has some walking demand but is a narrow, higher-speed roadway with no sidewalks. This is a potentially important local neighborhood street within walking distance of both the Greyhound bus station and Airport. Some local residents reported walking on this street despite the lack of sidewalks.

In addition to a lack of sidewalks, local residents reported a lack of safe pedestrian crossings at different locations including on Shepherd Road at Vance Street. Area roadways themselves are significant walking barriers – especially in areas where there are the makings of local neighborhood nodes. For example, the intersection of Chickamauga Road, Airport Road and Lee Highway contains multiple local services useful to neighborhoods immediately adjacent on both sides of the street, but there are no crosswalks, signals or a safe way to cross from one side of Lee Highway to the other. This forces patrons of local businesses to drive between destinations located a short distance from one another. Lee Highway in particular is also characterized by multiple curb cuts, making it challenging and unsafe to walk.

Stretches of the Lee Highway corridor have sidewalks, but not continuously and frequently only on one side. Sidewalks are present on both sides of the street on Lee Highway as it passes over the railroad viaduct. Sidewalks are present on the west side of Highway 153 in the Shepherd Road neighborhood but terminate at the interchange.



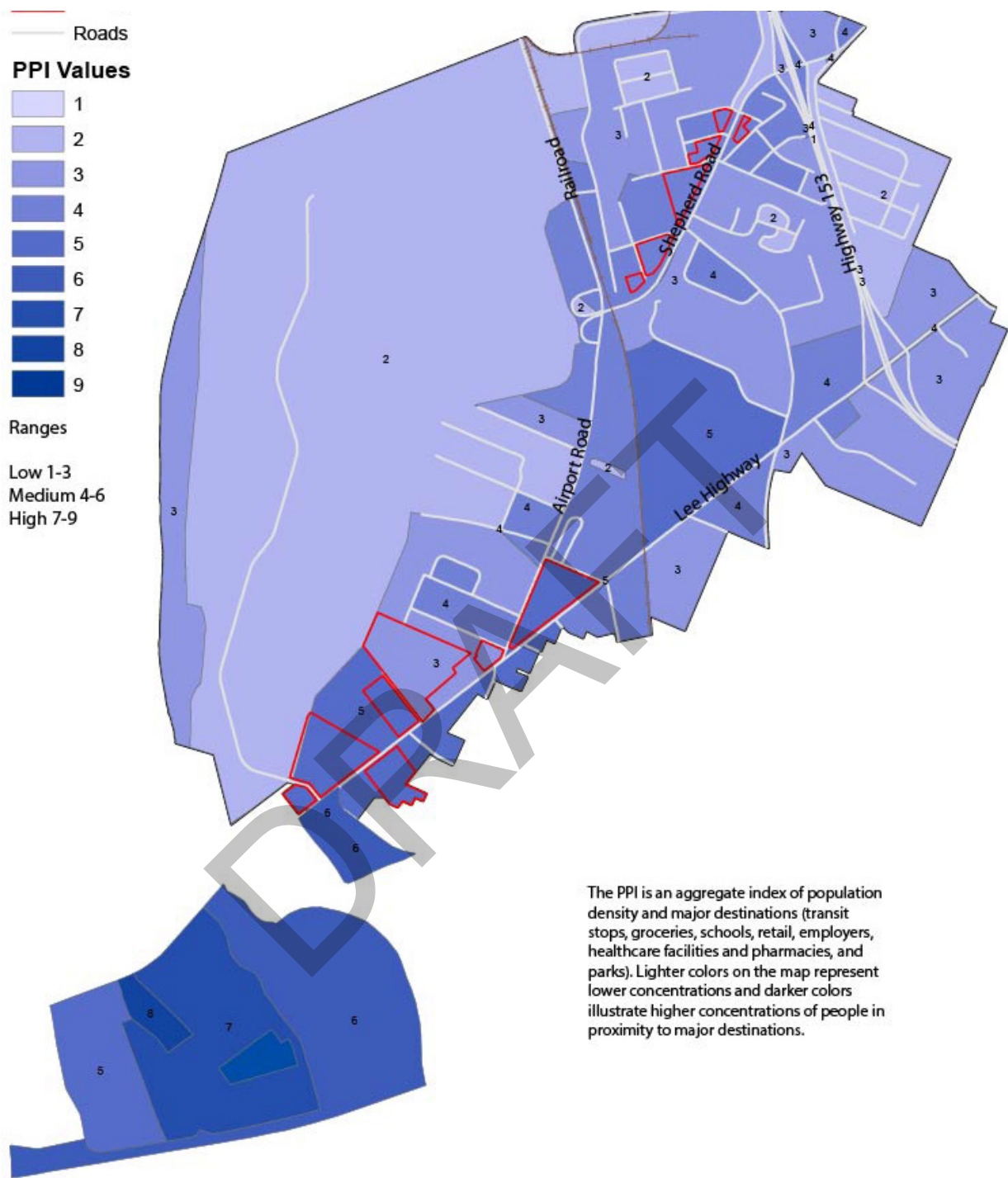
NELSON DRIVE, A FEEDER ROAD CONNECTING A RESIDENTIAL NEIGHBORHOOD TO A COMMERCIAL NODE ON LEE HIGHWAY LACKS BASIC INFRASTRUCTURE INCLUDING SIDEWALKS, CURBING, DRAINAGE AND LIGHTING.



EXISTING GATEWAY AREAS TO THE AIRPORT LACK CONSISTENT WALKING INFRASTRUCTURE AND PLACEMAKING LIMITING POTENTIAL TRIPS ON FOOT BETWEEN LOCAL NEIGHBORHOODS AND SERVICES ON LEE HIGHWAY.



SOME SIDEWALK IMPROVEMENTS HAVE BEEN MADE, BUT THERE IS LIMITED ADA ACCESSIBILITY AND INCONSISTENCIES FROM BLOCK TO BLOCK. THIS IS THE INTERSECTION OF EAST BRAINERD. ROAD AND LEE HIGHWAY.



Eastgate Area

FIGURE 2-4 PEDESTRIAN POTENTIAL INDEX MAP

Bike Network

The South Chickamauga Creek multi-use path lays just outside the study area passing underneath Lee Highway. The City plans for this trail to provide continuous access to Downtown. There is currently no convenient way for local residents to access the trail. There are no other dedicated or shared in-street or off-street facilities within the study area.

The City of Chattanooga offers a bikeshare system serving locations Downtown and at the Tennessee Aquarium. There is currently no bikeshare available within the study area.

Opportunities

- The South Chickamauga Creek multi-use path provides an opportunity to install bikeshare stations, especially as the study area’s bicycle accommodations grow over time.
- Based on local demographics and number of households with two or more persons and only one car, there is latent demand for better walking and biking network.
- Better walk and bike infrastructure can help connect current and potential future riders to local CARTA bus service – journey to work mode share data indicates very low transit use.
- ACS data for census tracts within the study area indicates that walk and bike mode share is very low.
- Better walking and biking connections will provide local residents and employees with cheaper, healthier options for local trips.
- Catalytic investment should aim to better connect walking and biking trips between residential neighborhoods and local services, groceries and retail. Sample locations include:
 - a. Vance Road and Lee Highway
 - b. Nelson Drive/Airport Road and Chickamauga Road
- The basis of a sidewalk network exists in segments on Lee Highway and Shepherd Road. This should be expanded into the neighborhoods prioritizing connections that best serve potential trips on foot, such as the walk to the grocery store.

- The existence of the South Chickamauga Creek multi-use path just outside the study area is an opportunity to provide continuous connection between the Airport and Downtown.

2.2.4 PUBLIC TRANSIT

CARTA Bus Service

Chattanooga Area Regional Transportation Authority (CARTA) provides bus service within the study area. The Route 19 provides 90-minute service with stops on Airport Road. This is not sufficiently frequent nor integrated with the Airport to provide useful service. The Route 4 runs on 15-minute headways in the peak hour with stops on Lee Highway. A system wide study *CARTA ReDesign: Planning for the Future* is currently underway. This includes four concept plans that are currently available for public review and comment.

Existing bus stops have limited to no amenities and little visual presence. The majority of bus stops on both Route 4 (Lee Highway service) and Route 19 (Shepherd Road) are hard to find, have no weather protection, clear branding, seating or other amenities.



CARTA SERVICE IS FREQUENT BUT BUS STOPS LACK AMENITIES AND CAN BE HARD TO REACH ON FOOT, LIMITING POTENTIAL RIDERSHIP.

Rail Transit Service

The City of Chattanooga discontinued passenger rail service decades ago. Today, the Tennessee Valley Railroad and East Chattanooga Belt Railway corridors are used by the Tennessee Valley Railroad Museum (TVRM) for visitors and tourists and by low-frequency freight delivery services to a small number of industrial customers in East Chattanooga.



THE STUDY AREA CONTAINS RAILROAD TRACKS THAT HAVE POTENTIAL TO PROVIDE PASSENGER RAIL SERVICE BETWEEN DOWNTOWN CHATTANOOGA AND THE AIRPORT.

The City conducted a Rail Transit Feasibility Study in 2016 with TIGER grant funding. Roadway congestion, after a dip during the Great Recession, has continued to climb, generating increased interest in re-introducing passenger rail service on 20-plus miles of existing rail corridors. The fundamental goals of the study were to (1) Support regional and economic development by connecting residents with major activity centers and promote higher land value Transit Oriented Development (TOD) at station nodes, (2) Provide viable transportation alternatives through passenger rail and a system of rail with trail greenways, (3) Coordinate land use and transit activity, and (4) Improve air quality by reducing vehicle emissions and supporting active healthy lifestyles.

CARTA, the City and other partner agencies studied the potential to provide passenger rail on the historic Tennessee Valley Railroad corridor to connect Downtown to Enterprise South. Of note, as part of the outreach conducted for the Chattanooga 2040 RTP, a third of respondents chose expanded rail service as the most cost-effective investment in future transportation infrastructure, outscoring widening and building new roads. Within the study, three alternative alignments were looked at, each with shuttle service to the Airport from the potential Tennessee Valley Railroad Museum Station.

The Rail Implementation plan states that target densities of housing and employment at the

proposed station areas, “are a requirement to provide sufficient demand for rail service”. In order to facilitate the Transit Oriented growth that is needed to fiscally support rail, a phased implementation process is outlined that first prescribes a vision for each station area to be established. This would include more in depth zoning studies, market studies, and economic development strategies to ensure that target densities are reachable.

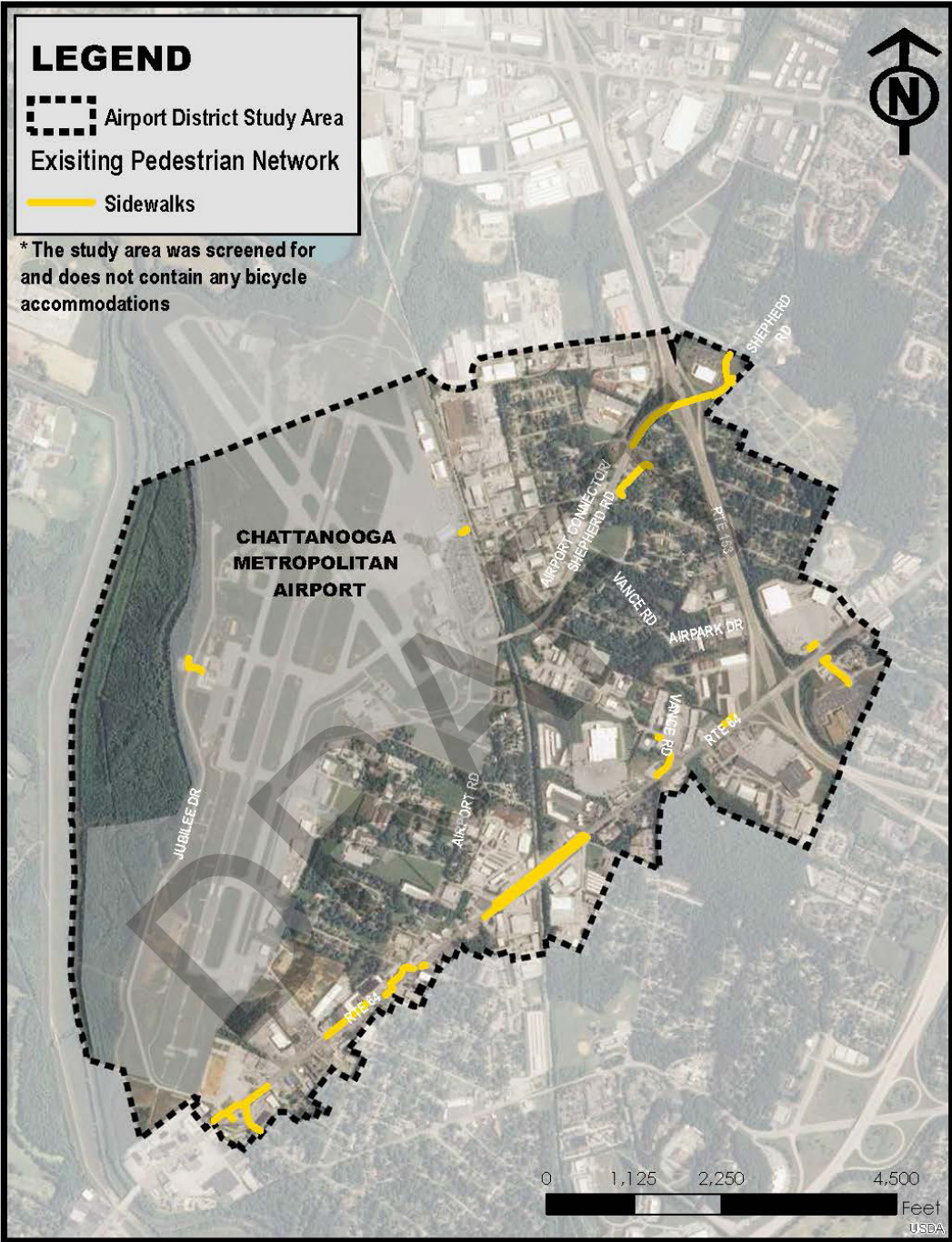
As a longer-term strategy for supporting economic development in the Airport area, the construction of rail and express shuttle service connecting Downtown Chattanooga to the Airport would benefit multiple user-groups including local residents with jobs downtown, reverse commuters, (residents that live Downtown and work within the study area), tourists, and Airport users.

Airport Express Service

The airport is not currently served by a dedicated airport express bus service. Many municipal and smaller regional airports provide express bus services usually running on 20-30 minute headways providing visitors and tourists with convenient and often free access to Downtown and hotels.

Opportunities

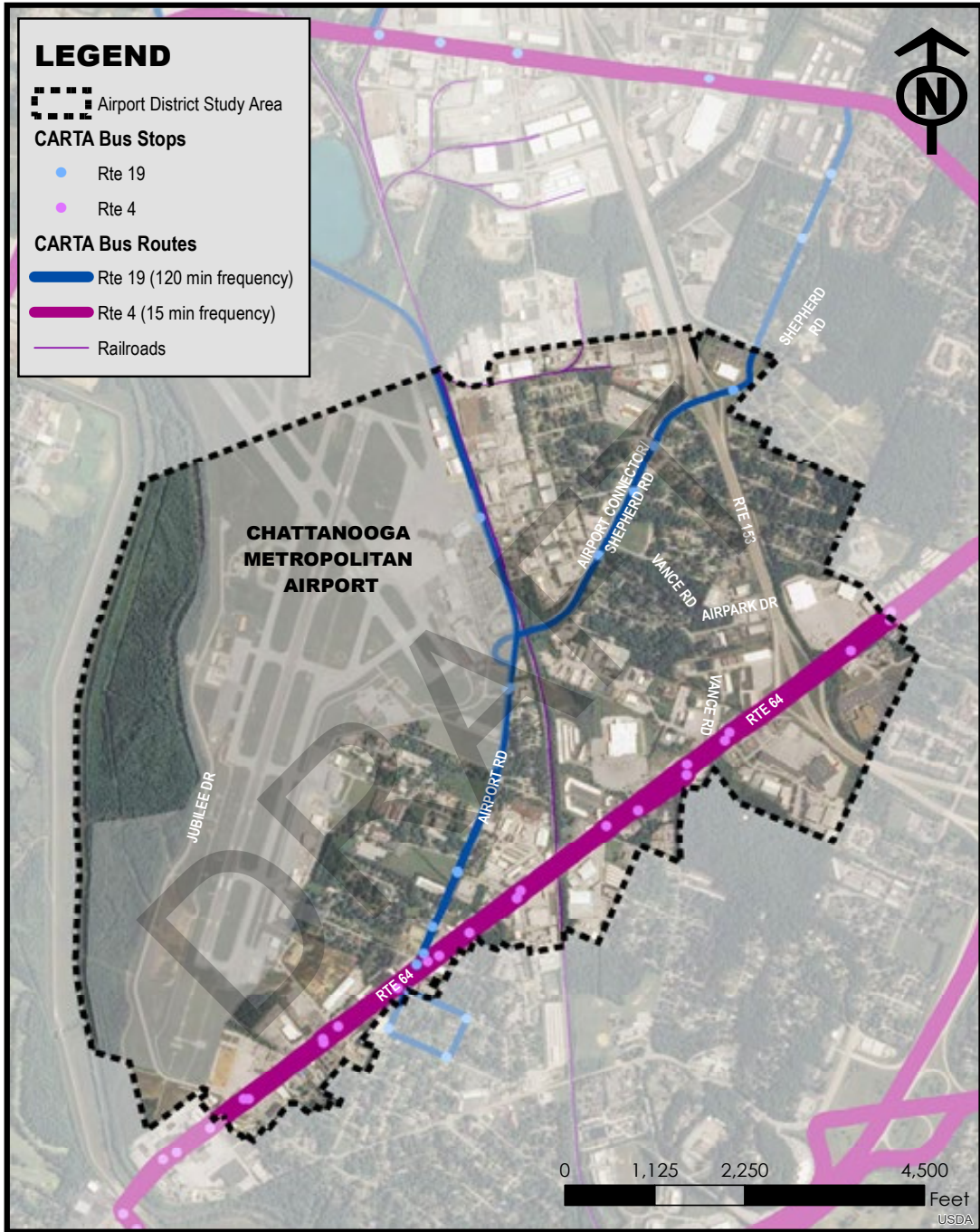
- Better, safer walking connections between the airport and Greyhound bus terminal.
- Mid to long-term dedicated airport express bus service that will also help manage parking demand and boost the airport’s profile with travelers.
- Existence of Tennessee Valley railroad track and right of way allows potential restoration of passenger rail service between the Airport and Downtown.
- Upgraded Route 4 bus stops at higher ridership locations can help increase low neighborhood transit mode share.
- Potential multi-modal hub/transfer that integrates:
 - a. CARTA services
 - b. An Airport Express Shuttle
 - c. Greyhound service



**PEDESTRIAN & BICYCLE NETWORKS MAP
CHATTANOOGA AIRPORT DISTRICT**



FIGURE 2-5 PEDESTRIAN AND BICYCLE NETWORKS MAP - CHATTANOOGA AIRPORT DISTRICT



**EXISTING TRANSIT CONDITIONS MAP
CHATTANOOGA AIRPORT DISTRICT**



FIGURE 2-6 EXISTING TRANSIT CONDITIONS MAP - CHATTANOOGA AIRPORT DISTRICT

2.3 STORMWATER ANALYSIS

The study boundary area for this Planning study contains a network of residential and commercial open channel and closed pipe systems draining into large open channel storm drains of which eventually are routed to Friar's Branch to the north or to the airport property and then South Chickamauga Creek to the west. The following is an overview of some of the potential issues that are present within the study area. The calculations and delineations presented herein are based on best estimates from available GIS data and DEM topography and are not meant to be used for design purposes. Rather, the information is provided as a high level screening assessment and a detailed design effort can verify these findings.

2.3.1 METHODOLOGY

Twelve (12) points of interest (POIs) were identified in the study area based on public comment, proximity to city streets, FEMA flood inundation maps, and drainage area (Figure 2-9). To assess the stormwater infrastructure in the project area and at the selected POIs the following tasks were completed:

- Subbasins for the project area that drain to different POIs were delineated using elevation and stormwater infrastructure data.
- The peak flow capacity of stormwater infrastructure at the POIs was estimated using Manning's Equation or a discharge curve.
- The rational method was used to determine the peak stormwater runoff for storms of the 1, 2, 5, 10, 25, 50, and 100-year storms.
- The peak stormwater runoff was compared to the flow capacity for stormwater infrastructure at the different POIs.

Stantec personnel conducted a site visit to review the hydraulic structures at these locations to obtain channel and culvert dimensions. This information, along with stormwater conveyance data from the City of Chattanooga web map, was used to estimate the flow capacity for structures at POI. Manning's equation was used for circular culverts, box culverts, and channels with each structure flowing full. A discharge curve was used to estimate the flow capacity of the arch pipe culverts.

The rational method was used to determine peak stormwater flows at each POI for storms of varying return interval. Drainage basins and subbasins for each POI were delineated using a 2.5 foot pixel raster Digital Elevation Model (DEM) and stormwater infrastructure data from the City of Chattanooga web map. Runoff coefficients (C values) for the rational method were determined by analyzing the land cover of the study area in accordance with the Chattanooga Stormwater Manual. Rainfall intensity data was obtained from NOAA Atlas 14-point precipitation frequency estimates. Peak stormwater production for each subbasin was calculated for the 1, 2, 5, 10, 25, 50, and 100-year 1-hour storms. The 1-hour storms were chosen to match the approximate time of concentration of a typical subbasin. Peak runoff flows were summed for each POI to obtain a total peak flow value that was compared to each structures' flow capacity.

2.3.2 ASSESSMENT

As shown in Figure 2-7, multiple subbasins contribute to these open channel conveyances along the right-of-way at Airport Road and the Shepherd Road. These subbasins are vulnerable to 100-yr and 500-yr event flooding and route large amounts of stormwater runoff from a combination of heavily developed areas, partially wooded, and residential lots as shown in Figures 2-8 through 2-12 to culverts and/or open channel conveyances.

When assessing existing stormwater conditions for future development, the current land use can be compared to capacity to gain an understanding of the impact of having less wooded/grassy areas to assist in reducing stormwater runoff and increased impervious surface area. Figure 2-8 shows POIs 1 through 6 and their contributing subbasins that have relatively low C values to the east of the Airport Connector Road. The subbasins contribute to a larger area that drains to culverts and channels with capacity "failures" (i.e., POIs 3 through 6) as indicated by stormwater routing through these conveyances.

These POIs along Shepherd Road are in the areas that have had localized flooding according to residents. Increasing development and impervious areas within these subbasins would increase the C values and peak flows in an area already at or over capacity, creating the need for improved stormwater infrastructure along the right-of-way on the Shepherd Road or on local collector streets. POIs 3 through 6 eventually drain to POIs 1 and 2 (Figure 2-10) which appear to have enough capacity resulting in a bottleneck along the Shepherd Road.

Additionally, conveyances along Airport Road show capacity issues (Figure 2-10) that have contributing drainage areas outside of the planning study area. These areas outside of the planning area have lower C values, and therefore could have increased runoff due to further development, exacerbating current capacity issues and causing flooding.

It is important to note that tailwater and backwater conditions were not included in these capacity calculations and could alter the condition of these channels and culverts, especially during major flooding events.

Figure 2-11 provides a summary map showing all of the POIs and all of the subbasins with their respective C values. The green areas indicate lower C values with more wooded/grassy areas and less impervious areas and red areas have high C values with mostly impervious surfaces. Areas where re-development can occur in those red or yellow areas are preferable to new development in green areas. This is especially important where green areas contribute to a POI that already shows capacity issues. In general, stormwater improvements along Airport Road and the Shepherd Road would have the most impact within the study area. Alternatively, some localized mitigation efforts within the collector streets and residential areas could also have some impact in reducing large runoff volumes into the main arterial streets.

Opportunities

- Design a green infrastructure master plan for the entire study area.
- Perform an engineering analysis to verify existing culvert capacity along Shepherd Road and

Airport Road.

- Employ Best Management Practices (BMPs) in areas where increased capacity and reduction in flooding is needed.
- Integrate BMPs into future designs for catalytic sites outlined in the CHA Airport District Plan.



STORMWATER POI #12 ON AIRPORT ROAD



STORMWATER POI #5 ON SHEPHERD ROAD



LARGE STORMWATER CONVEYANCE ON AIRPORT ROAD



SMALL STREAM ON AIRPORT ROAD

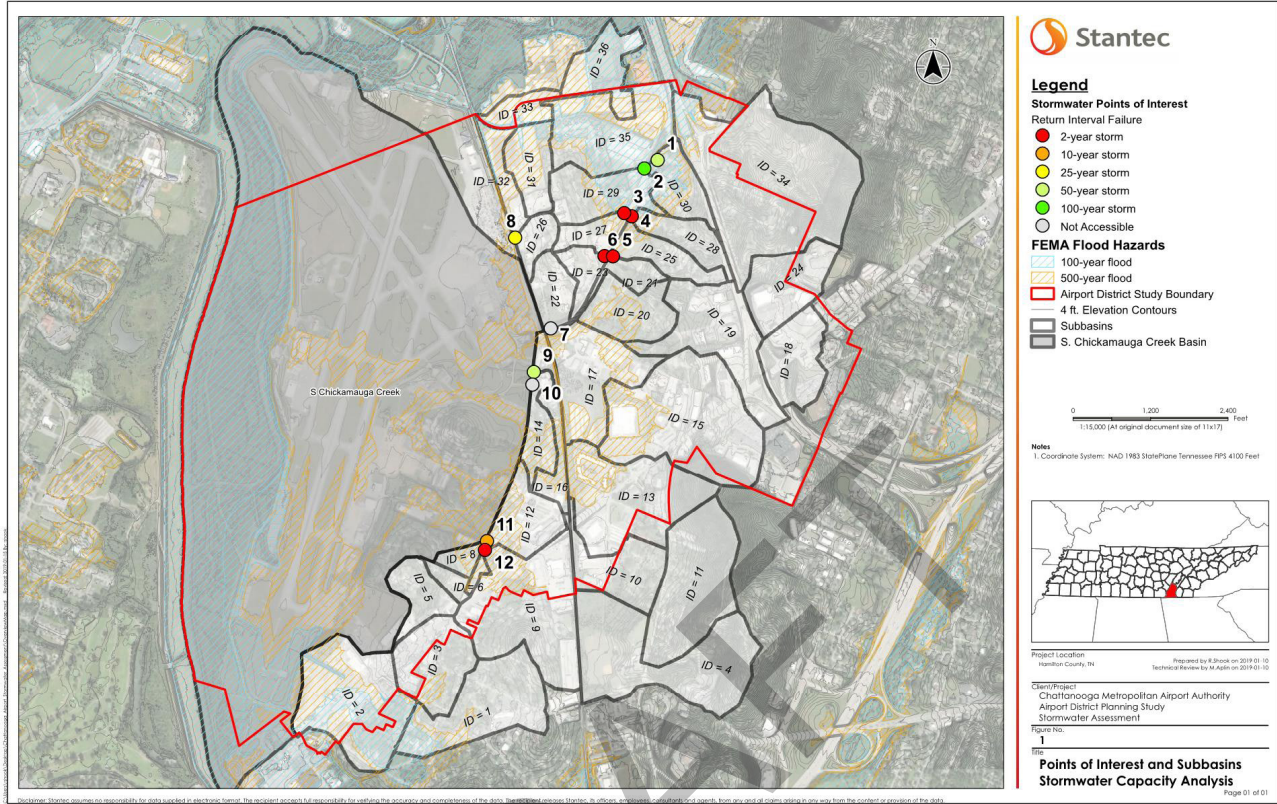


FIGURE 2-7 SUBBASINS



FIGURE 2-8 POINTS OF INTEREST 1-8

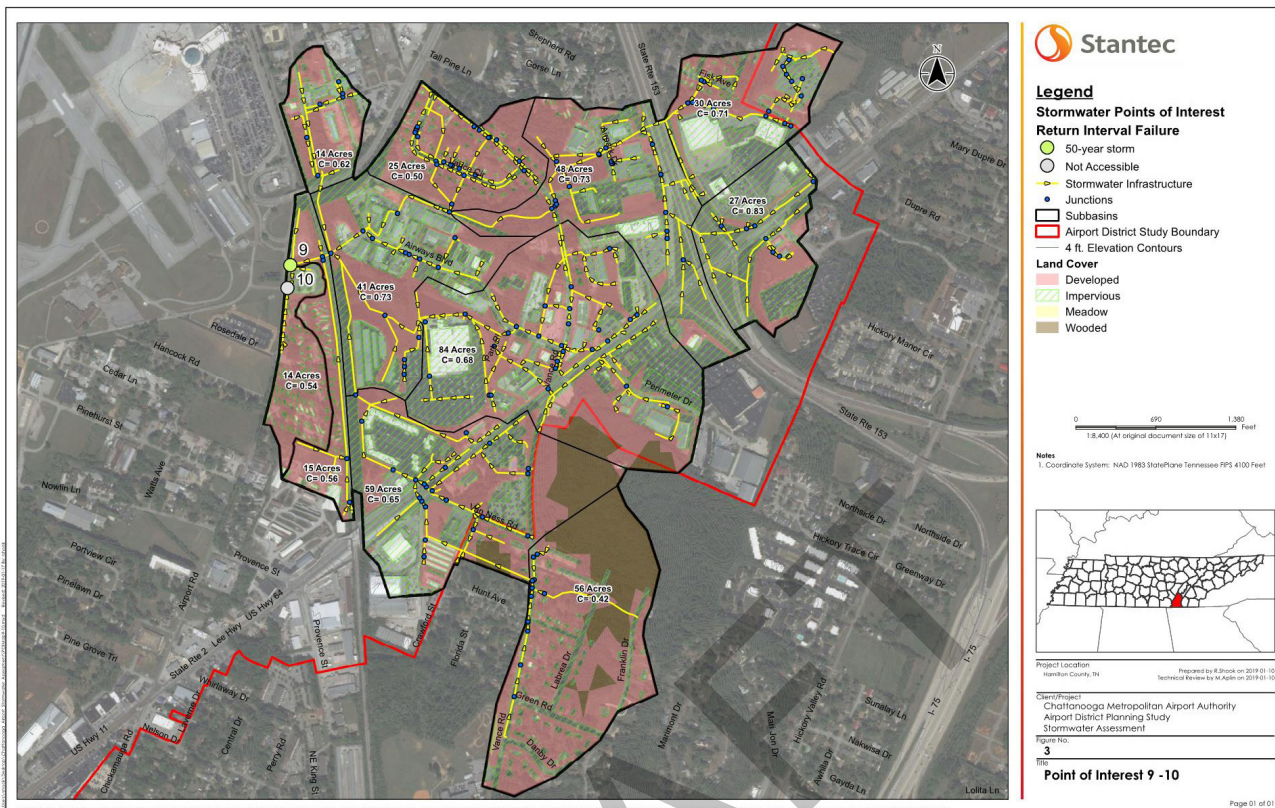


FIGURE 2-9 POINTS OF INTEREST 9-10

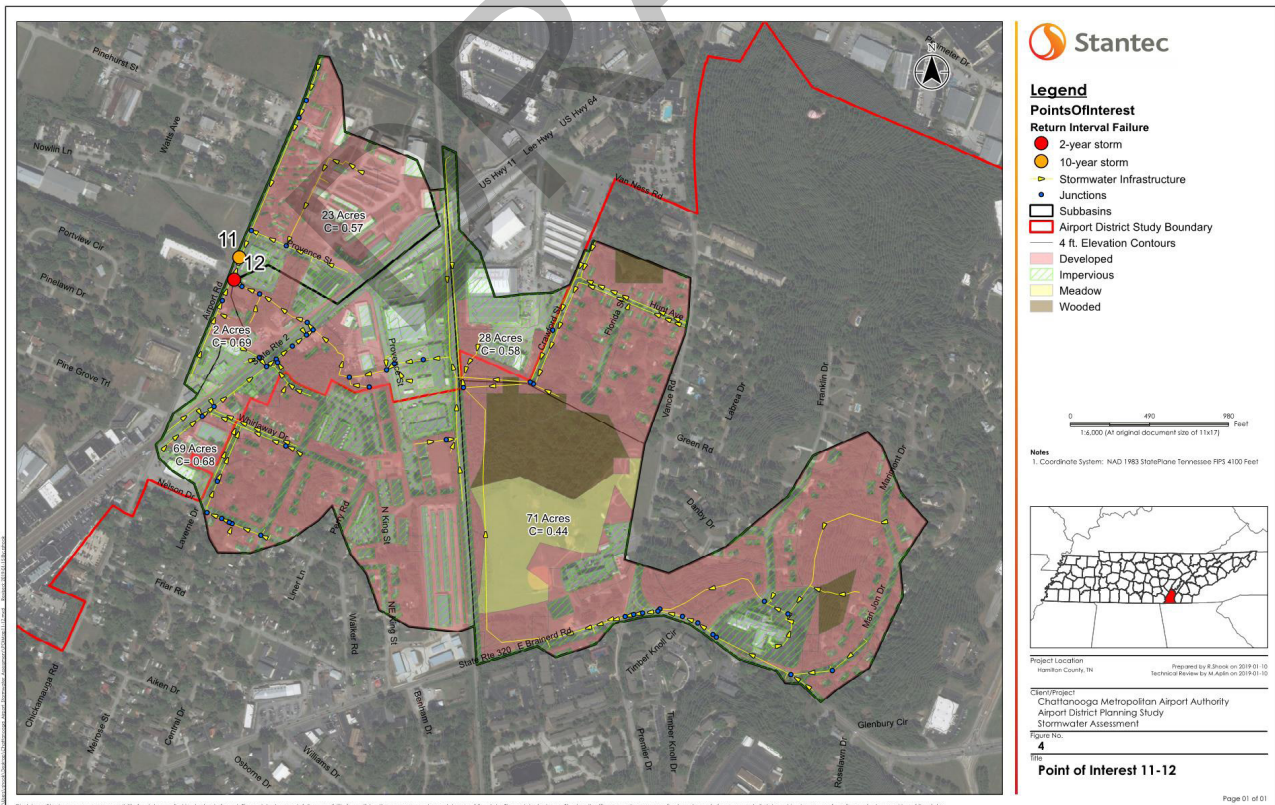


FIGURE 2-10 POINTS OF INTEREST 11-12

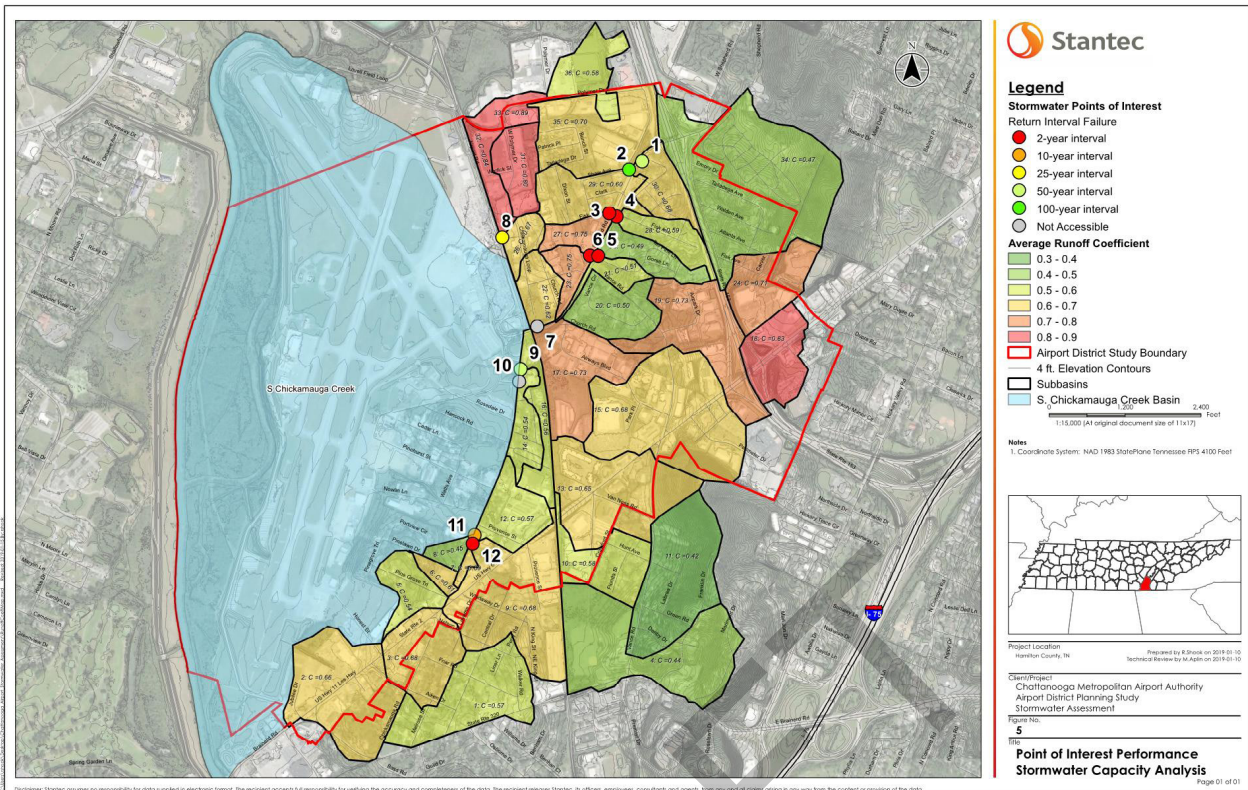


FIGURE 2-11 POINTS OF INTEREST PERFORMANCE STORMWATER CAPACITY ANALYSIS

DRAFT



Chickamauga Triangle
CHATTANOOGA AIRPORT DISTRICT

Map of the Chickamauga Triangle area in the Chattanooga Airport District, showing streets such as Plover St, Pineknob Dr, Whiteaway Dr, Mason Rd, Lee Hwy, and Beaulac Dr. The map includes a legend and is presented on a white board.

AHD
ALPHA HUB DEVELOPMENT

Map of the Chickamauga Triangle area in the Chattanooga Airport District, showing streets such as Plover St, Pineknob Dr, Whiteaway Dr, Mason Rd, Lee Hwy, and Beaulac Dr. The map includes a legend and is presented on a white board.



DRAFT

3 COMMUNITY OUTREACH AND STAKEHOLDER ENGAGEMENT

Summary of the community
outreach and stakeholder
engagement undertaken
during the study.

COMMUNITY OUTREACH AND STAKEHOLDER ENGAGEMENT

INTRODUCTION

The stakeholder and community outreach process for the Airport District Master Plan Study consisted of key stakeholder interviews, for both the residents, businesses and visitors, a community workshop and a final presentation of the draft Master Plan Study to the community. Through these meetings and events participants shared their thoughts on the current conditions as well as their vision for the future. The purpose of this chapter is to summarize the public outreach efforts conducted to date and the key findings that emerged from the process.

The key takeaways from the public outreach process have been carefully considered in the recommendations and implementation of this Master Plan Study.

PUBLIC OUTREACH PROCESS

The Airport District Master Plan Study included opportunities for residents and stakeholders to provide input and feedback throughout various steps of the Master Plan Study process.

It is evident from the public outreach process that the Airport District is a place where residents and business owners care deeply about their community. Those who participated in outreach all held a desire to see their community improve and thrive.

Outreach at Community Events

Project Team Members attended three community events held at the Family Justice Center in Chattanooga. The first two meetings were held on November 14 & 15th, 2018. At these meetings, project team members and the Regional Planning staff presented the study boundaries, goals, planning process, and solicited feedback from event participants.

The second community meeting was held on March 25, 2019 at the Family Justice Center in Chattanooga. The project team presented the key findings from the market study and plan analysis, and shared recommendations for several catalytic sites and infrastructure projects.

The final Airport District Plan Wrap-up public meeting will be held by RPA at the Shepherd Youth and Family Development Recreation Center in the summer of 2019. The meeting will be held as an open house format where stakeholders and residents could view information related to the Airport District future land uses, market analysis, and potential infrastructure projects.

STAKEHOLDER MEETINGS

The project team members and RPA staff conducted stakeholder meetings on November 13, 2019. Stakeholder groups were formed via existing contact lists from the Chamber of Commerce, the City, and City Council representatives. Potential participants were recruited by direct phone calls and e-mail invitations. Stantec and MXD interviewed stakeholders representing the following interests:

- Midtown Leadership Group
- Culinary Food and Beverage Group
- Developers
- Major Employers
- Park Ridge East Hospital
- Government Officials
- Government Agencies (CDOT, CARTA, Public Works, etc.)
- Tennessee Department of Transportation (TDOT)
- Transportation Planning Organization (TPO)
- Airport District Master Plan Study Advisory Committee



Airport District



City Planning and Transportation



Mid-Town Leadership Group



Major Employers and Local Companies



Real Estate Developers and Commercial Brokers



Food & Beverage / Culinary Enterprises

Interviews focused on the stakeholder’s understanding of the existing conditions within the Airport District Master Plan Study area as they relate to the Master Plan Study efforts. Interviews were conducted with the CHCRPA staff from a variety of local government agency and staff to obtain a diversity of viewpoints about issues and opportunities.

PUBLIC MEETING NOTIFICATION

Two open house style community meetings were held on November 14th and 15th, 2018. To advertise the meetings to the public, a full mailing to all parcels within the Airport District Boundary was sent out for community workshops held by the consultant team and RPA, as well as a wrap-up public meeting held in July. The flyers provided a brief summary of the goals of the public meeting as well as advertised the time and location of the meetings.



▲ **CHERIE AKERS (STANTEC), MEETS WITH RESIDENTS AT COMMUNITY WORKSHOP**



▲ **CHRIS LETOURNEUR (MXD) & RESIDENTS DISCUSS THE POTENTIAL LAND USES AND CONNECTIVITY**

PUBLIC MEETING

The open house public meetings were held to:

- Educate on what a master plan study is and what the purpose of the study is.
- Educate attendees on the findings from the existing conditions analysis.
- Obtain feedback on three topic areas that will guide recommendation themes.

The public meetings were designed with a brief presentation and multi-station structure; attendees listened to a brief introduction about the Airport District Master Plan Study goals and process and then participated in discussions at each “station” – Transportation, Land Use, Infrastructure and Economic/Market Analysis.



▲ **TOM YARDLEY, TRANSPORTATION PLANNER (STANTEC TEAM)**

A graphic invitation for a community workshop. The title is "Re-imagining Chattanooga's Gateway" in a dark blue font. Below the title are several icons representing different sectors: Neighborhoods (house and church), Transportation (person walking, bus, and train), Housing (house), Industry (factory), Hospitality (hotel), and Jobs (briefcase and plus sign). The central focus is "CHA Airport District Plan, 2019" with a large "DRAFT" watermark overlaid. At the bottom, it says "Community Workshops | Nov. 14th & 15th 5-8 pm" and provides the location "Family Justice Center 5705 Uptain Road" and contact information "Contact: RPA, Sarah Cook, 423.643.5933 | scook@chattanooga.gov". The RPA logo is in the bottom left corner, and the full name "Chattanooga-Hamilton County Regional Planning Agency" and website "://chcrpa.org/index.php/current-projects/" are at the bottom. The background of the graphic is a light blue sky with a cityscape and a river.

◀ **COMMUNITY
WORKSHOP
INVITATION**

SUMMARY FINDINGS

The following illustrates the summary comments and findings that the project team heard from the key stakeholders and the community.

HOUSING

- Airport District is primarily older single-family homes.
- Biggest opportunity is “missing middle” and workforce housing.
- Downtown has become expensive due to construction costs, Airport District can be a more affordable option.
- High demand for 2 and 3-bedroom multi-family.
- Need for housing that accommodates higher paying jobs at Wilson Air Center and West Star Aviation.
- Airport District is not viewed as a place to move to, but that can change over time.

PERCEPTION OF THE DISTRICT

- Current perception of the area is not high.
- Airport District is not an attractive part of the city, there is no reason to mingle.
- Perception that the area is unsafe due to limited lighting, vacant lots, and underperforming properties.
- The area needs to be visually enhanced so that negative perception changes.

AMENITY PACKAGE

- Currently no reason to stay in the Airport District.
- Lack of interesting food & beverage options in study area, have to drive to Hamilton Place to eat and drink.
- Need unique food & beverage concepts.
- Entertainment and recreation are limited in study area.
- Need for a complete amenity package to attract businesses.
- Opportunity for craft breweries/distilleries due to industrial nature.

INFRASTRUCTURE

- The District has excellent connectivity to all areas of Chattanooga.
- Major disconnectivity within the District.
- Basic placemaking such as lighting, street trees, and sidewalks are absent from the Airport District.
- Need to improve and widen Airport Road.
- Intersections along Lee Highway are dangerous and need improvements.

DEVELOPMENT OPPORTUNITY

- Chattanooga has nearly run out of buildable greenfield land; developers will have to turn to redevelopment.
- There is a need for quality development in the Airport District.
- Small and irregular parcels require amalgamation and creative thinking.
- Basic infrastructure such as lighting and sidewalks are first required, prior to redevelopment.
- Subsidies and incentives are desired by development community to enable redevelopment.

EDUCATION & SKILLS TRAINING

- There is a need for a larger skilled labor pool to draw from for major companies such as VW and West Star Aviation.
- Partner major companies with local education such as Chattanooga State to establish specific programs.
- Create a Regional Training Center to generate a targeted workforce.

LIFESTYLE IN THE DISTRICT

- What is the vision for the future?
- Need to plan for millennials who have different preferences for work, living, and play.
- How do you bring a youthful employment base closer to the airport?
- Create an environment that is attractive to future generations.
- A real community is required to make the District successful, not a transient population.

COLLABORATION

- Collaboration is currently limited between government and neighborhood groups.
- There is a need to be more pro-active rather than re-active.
- Everyone needs to work together to push a new vision for the Airport District forward.
- Collaboration between RPA, City, and private developers to plant seeds of change in the Airport District.





DRAFT

4 PRECEDENT AIRPORT DEVELOPMENTS

An overview of six North American airports to identify best practices that can be applied to the Airport District.

PRECEDENT AIRPORT DEVELOPMENTS

INTRODUCTION

This section profiles six North American airports that have notable airport-connected and airport-adjacent districts to identify best practices that can be applied to the Airport District in Chattanooga. The case studies highlight the relevant statistics to contextualize the airport. Airports were selected based on their similar size to Chattanooga Airport, or their recent airport-adjacent developments that have important takeaways to consider.

An overview of key developments both on airport land and adjacent to the airport help to identify land uses and enabling infrastructure that should be targeted to enhance the gateway experience at the Airport District as well as promote economic development in the area.



▶ **HUNTSVILLE INTERNATIONAL AIRPORT**



▶ **HARRISBURG INTERNATIONAL AIRPORT**



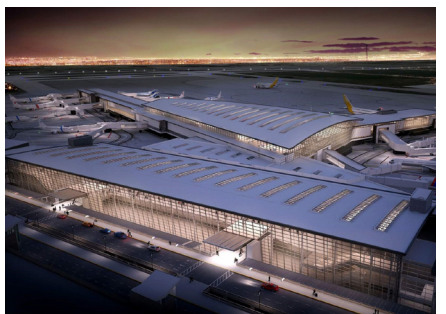
▶ **PENSACOLA INTERNATIONAL AIRPORT**



▶ **CHARLESTON INTERNATIONAL AIRPORT**



▶ **WINNIPEG JAMES ARMSTRONG RICHARDSON INTERNATIONAL AIRPORT**



▶ **CALGARY INTERNATIONAL AIRPORT**

HUNTSVILLE INTERNATIONAL AIRPORT

AIRPORT CONTEXT

- 1.2 million annual passengers
- 2 Runways
- 14 miles from downtown Huntsville

AIRPORT CONNECTED DEVELOPMENT

- Four Points by Sheraton is a 3-star, 146 room hotel, located within the airport terminal.
- Revolution Flight School is located on airport property. It houses an aviation school and also offers aircraft maintenance and aircraft leasing/rental services.
- Jetplex Industrial Park is a 4,000 acre industrial park with 60 corporate tenants located directly east of the runway system. It supports a mix of office, warehouse and distribution uses. The complex has excellent visibility from Interstate 565 and direct access to the runway. It also includes a Free Trade Zone (FTZ), on-site U.S. Customs and Border Protection, and a Norfolk Southern International Intermodal Center for rail and cargo services. Key tenants include Boeing, Raytheon, Remington Outdoor, Futaba and LG.
- Airport target sectors are Electronics, Aerospace & Defense.



Sheraton Four Points



Jetplex Industrial Park

**AIRPORT TARGET SECTORS
ARE AEROSPACE &
DEFENSE
AND ELECTRONICS**

HARRISBURG INTERNATIONAL AIRPORT

AIRPORT CONTEXT

- 1.2 million annual passengers
- 1 Runway
- 10 miles from downtown Harrisburg

AIRPORT CONNECTED DEVELOPMENT

- The Linden Centre Shopping Complex is a recently redeveloped 83,162 SF Neighborhood Retail Center located across from HIA with direct access to Pennsylvania State Route 230. It is anchored by Sharp Shopper and features co-tenants such as Verizon Wireless and CVS Pharmacy. A recent addition includes the 87-room Comfort Inn and Suites.
- The Fairfield Inn & Suites is a 2.5-star, 123 room hotel, located on Airport property. The Susquehanna Area Regional Airport Authority received a \$1.15 million state grant to build a skybridge connecting the hotel to the adjacent parking garage and terminal.
- Penn State Harrisburg is located near the gateway into the airport and has 5,000 students enrolled at the college. The campus includes on-site student housing and recently acquired more land for expansion to keep up with growth.
- The Capital Logistics Center is a 1.5 million SF industrial park located in proximity to HIA. Its central location provides access to all major highways in central Pennsylvania. It targets manufacturing, warehouse and distribution end-user tenants.



Fairfield inn & Suites



Penn State Harrisburg

**\$1.15 MILLION STATE GRANT
TO BUILD A SKYBRIDGE
CONNECTING THE
HOTEL TO THE ADJACENT
PARKING GARAGE AND
TERMINAL**

PENSACOLA INTERNATIONAL AIRPORT

AIRPORT CONTEXT

- 1.7 million annual passengers
- 2 Runways
- 5 miles from downtown Pensacola

AIRPORT CONNECTED DEVELOPMENT

- The 3-star, 127 room Hyatt Place hotel is located adjacent to the terminal. It was developed through a partnership between the City of Pensacola, Innisfree Hotels and Poarch Band of Creek Indians.
- Baptist Medical Park is a 23,360 SF medical campus at the entrance to Pensacola International Airport. The \$6 million dollar project was completed in 2017 and offers a wide variety of services including urgent care, sports medicine, orthopedic and cardiology services.
- Pensacola State College is a public post-secondary institution serving 26,000 students on 641 acres of land. Located off highway 289, the school serves as a northwest anchor into the Airport.
- There is also a significant residential and retail node directly west of the gateway that includes F&B and service retail in addition to Cordova Mall, a 928,709 SF shopping center that has seen significant renovations.



Baptist Medical Park



Hyatt Place Hotel

THE GATEWAY INTO THE AIRPORT IS ANCHORED BY A SIGNIFICANT RESIDENTIAL AND RETAIL NODE

CHARLESTON INTERNATIONAL AIRPORT

AIRPORT CONTEXT

- 3.9 million annual passengers
- 2 Runways
- 12 miles from downtown Charleston

AIRPORT CONNECTED DEVELOPMENT

- Boeing's second "final assembly" site for the 787 Dreamliner is located on CHS property. The 1.2 million SF facility supports testing and delivery of airplanes and employs 7,000. The company plans to expand its airport-adjacent footprint in the near future.
- The 352,000 SF Tanger Outlets retail shopping complex is to the east of CHS. Together with adjacent retail power centers, the outlet mall serves as a prominent retail node at the entrance to CHS.
- Embry-Riddle Aeronautical University is a 3,000 SF campus that targets skills training in the aeronautics sector. A primary goal is to recruit Boeing employees to enhance technical skillsets.
- The 120,000 SF Charleston Area Convention Center is attached to a 3-star Embassy Suites by Hilton via a pedestrian skybridge.
- The Charleston Shepherd Road Project is a \$43 million project initiated by the Charleston County Government that aims to provide a new direct access route to the airport to improve traffic around Boeing facilities and unlock development in the area to promote regional economic growth.



**UNLOCK DEVELOPMENT
IN THE AREA WITH
INFRASTRUCTURE
IMPROVEMENTS TO
PROMOTE REGIONAL
ECONOMIC GROWTH**

WINNIPEG JAMES ARMSTRONG RICHARDSON INTERNATIONAL AIRPORT

AIRPORT CONTEXT

- 4.3 million annual passengers
- 2 Runways
- 5 miles from downtown Winnipeg

AIRPORT CONNECTED DEVELOPMENT

- There are three hotels at different price points located on airport land. Four Points by Sheraton and Courtyard by Marriott are 3-star hotels, and The Grand Winnipeg is a 4-star hotel.
- The airport houses a 450,000 SF modern Canada Post processing facility. The \$100 million dollar facility opened in 2010 and contains a 250,000 SF mail sorting plant, 41 dock loading bay and 25,000 SF of office space. Employment at the facility totals 400.
- The 665,000 SF Boeing Composite Manufacturing Facility is located adjacent to Winnipeg International Airport and employs over 1,600 people. The facility manufactures composite parts for Boeing's 700-series aircraft.
- The airport adjacent Red River College Campus has 30,000 students enrolled and focuses on local skills training. The Stevenson Campus is located on airport land and provides hands-on training in the aerospace and aviation sectors.
- Airport target sectors are Aerospace, Manufacturing and Distribution.



**THREE HOTELS BUILT IN
A PHASED TIMELINE AT
DIFFERENT PRICE POINTS
ARE LOCATED ON AIRPORT
LAND**

CALGARY INTERNATIONAL AIRPORT

AIRPORT CONTEXT

- 16.2 million annual passengers
- 4 Runways
- 10 miles from downtown Calgary

AIRPORT CONNECTED DEVELOPMENT

- Oxford Airport Business Park is a 4 million SF industrial park located at the entrance to the airport. Once completed, it will offer over 500,000 SF of suburban office space and complimentary retail amenities to go along with the industrial product.
- Three new airport hotels have opened since 2017. The Marriott In-Terminal Hotel, a Hyatt Place, and Westin Hotel with conference facilities.
- Art Smith Aero Center is a 200,000 SF training facility at the airport that provides practical, hands-on education to grow the region's aviation industry. The facility was a joint partnership between SAIT School of Transportation, all three levels of government, the Calgary Airport Authority and industry partners.
- The Deerfoot City mall redevelopment will transform a previously enclosed mall into a 1.1 million SF open-air destination retail center. The development is strategically located at a major highway interchange and adjacent to the airport.
- The fully funded \$153 million expansion of Airport Trail will create another significant east-west corridor to seamlessly connect the airport to a growing industrial-commercial area.



Art Smith Aero Center



Deerfoot City

A 200,000 SF TRAINING FACILITY AT THE AIRPORT THAT PROVIDES PRACTICAL, HANDS-ON EDUCATION

KEY TAKEAWAYS

Diversification of Uses to Create a Gateway Experience

- A strategic mix of employment, retail, F&B, hotel, entertainment, and education uses can help to establish the airport and surrounding area as an economic gateway for the city and region. Strategically positioning uses such as hotel and F&B at anchor sites creates a visually pleasing gateway experience when coming and going from the airport. Furthermore, diversification of uses leads to round-the-clock activity.

Development Along High Visibility Corridors

- Prominent employment and retail nodes benefit from locating along high visibility corridors that lead into the airport. Focus on selecting sites for catalytic projects that have excellent access from highways or major arterials that lead to the airport terminal.

Offering an Amenity Package

- In-terminal and airport adjacent hotels, retail, restaurants, and services provide a strong amenity package for the airport and surrounding area. They turn vacant or underutilized areas surrounding the airport into places where people want to linger. These amenities also have the ability to attract major employment anchors in a variety of sectors who desire access to multi-modal transportation, but also want the amenity package of urban areas.

Partnerships in Skills Training

- Partnerships between local post-secondary institutions, government actors and the airport can facilitate the creation of education and skills training facilities on and around the airport. Programs that specifically target key economic sectors can help to grow the regional economy.

Investment in Infrastructure

- Local and State-Level government investment in strategic infrastructure improvements can help to unlock land for development and economic growth. This can be a new roadway that provides integral access to development site, roadway and sidewalk improvements to increase land values and make development more attractive to private land owners, or connecting crucial servicing to areas that did not have the necessary infrastructure in place.





DRAFT

5 ECONOMIC & MARKET ANALYSIS

An analysis of the major economic and real estate market trends in Chattanooga and the region. This analysis informs the recommended development mix and positioning for the Airport District.

ECONOMIC & MARKET ANALYSIS

The following section provides an overview of key economic drivers in Chattanooga as well as the prevailing real estate market trends that inform the feasibility of development at the Airport District.

This section first provides an economic analysis of Chattanooga which identifies the key pillars of economic activity in the region as well as notable economic trends. This analysis informs the opportunities and challenges associated with economic development at the Airport District.

A real estate market analysis was conducted to outline the current state of the office, industrial, retail, hotel and multi-family residential markets from a supply and demand perspective. The market analysis identifies gaps and opportunities within each asset class, which then informs recommendations for land uses and development programming for several catalytic sites.

This analysis identifies gaps and opportunities within each asset class, which then informs recommendations for land uses and development programming for several catalytic sites.



VOLKSWAGEN CHATTANOOGA AT THE ENTERPRISE SOUTH INDUSTRIAL PARK

5.1 ECONOMIC ANALYSIS

INTRODUCTION

An economic analysis was conducted to identify the key economic drivers in the region and within the Airport District. The economic analysis consists of the following components:

- **Regional Economic Overview** – Serves as the foundation for understanding Chattanooga’s economic clusters and the potential for various types of economic activity within the Airport.
- **Overview of Key Sectors** – Highlights economic sectors in the Chattanooga area. These sectors drive the local economy and offer the majority of local employment to residents.
- **Post-Secondary Education Overview** – Profiles the specialization of young graduates in the region to further refine the economic forecast moving forward.
- **Economic Cluster Analysis** – Identifies the key pillars of the regional economy, sunset industries and sunrise industries, and potential development opportunities for the Airport District to consider.
- **Recommended Economic Clusters** – Identifies the clusters which present the strongest opportunities for the Airport District to target.

5.1.1 REGIONAL ECONOMIC OVERVIEW

- Chattanooga's robust and growing economy is supported by its diverse economic sectors. In 2016, the GDP growth rate for the TN-GA metro region was 4 percent.

Source: Bureau of Economic Analysis
- The region is strategically located at the intersection of three interstate highways, the I-75, I-59 and I-24, which has facilitated economic growth in a number of industries. More specifically, the region's central location makes it a significant logistics hub as 80 percent of U.S. freight passes through Chattanooga.

Source: Freight Waves
- The cost of living in downtown Chattanooga is 15.9 percent less than the national average and 5.9 percent less than the Tennessee average (2015).

Source: River City Company
- Chattanooga's fast internet speeds coupled with its strong academic institutions have attracted several top employers to the region. Accordingly, unemployment rates in Chattanooga were 3.4 percent in 2018.

Source: Chattanooga Area Chamber of Commerce
- Median property values in Chattanooga (\$153,900 in 2017) are lower than the national median property value of \$217,600, which has helped to attract young talent to the area.

Source: Data USA
- The City offers supportive infrastructure for innovation and entrepreneurship with the establishment of the 140-acre Innovation District in the downtown area. This has catalyzed the creation of innovative knowledge-based companies, allowing Chattanooga to evolve into a tech hub.

Source: The Enterprise Center and Chainnovate.com
- Passenger boardings at CHA totaled 484,517 in 2017, which represented a 16 percent growth from 2016. Growing passenger numbers have prompted the expansion of the parking facilities by 300 spaces to meet demand.

Source: Chattanooga Area Chamber of Commerce

CITY OF CHATTANOOGA'S \$32.6B ECONOMY



ADVANCED MANUFACTURING



TRANSPORTATION & WAREHOUSING



HEALTH SERVICES



FOOD & BEVERAGE PRODUCTION



FINANCE & INSURANCE

MAJOR EMPLOYERS

A number of the region's top employers are located both within and around the Airport District which demonstrates the economic significance of the

area. Figure 5-1 highlights the wide variety of major companies located in and around the study area as well the diversity of economic sectors.

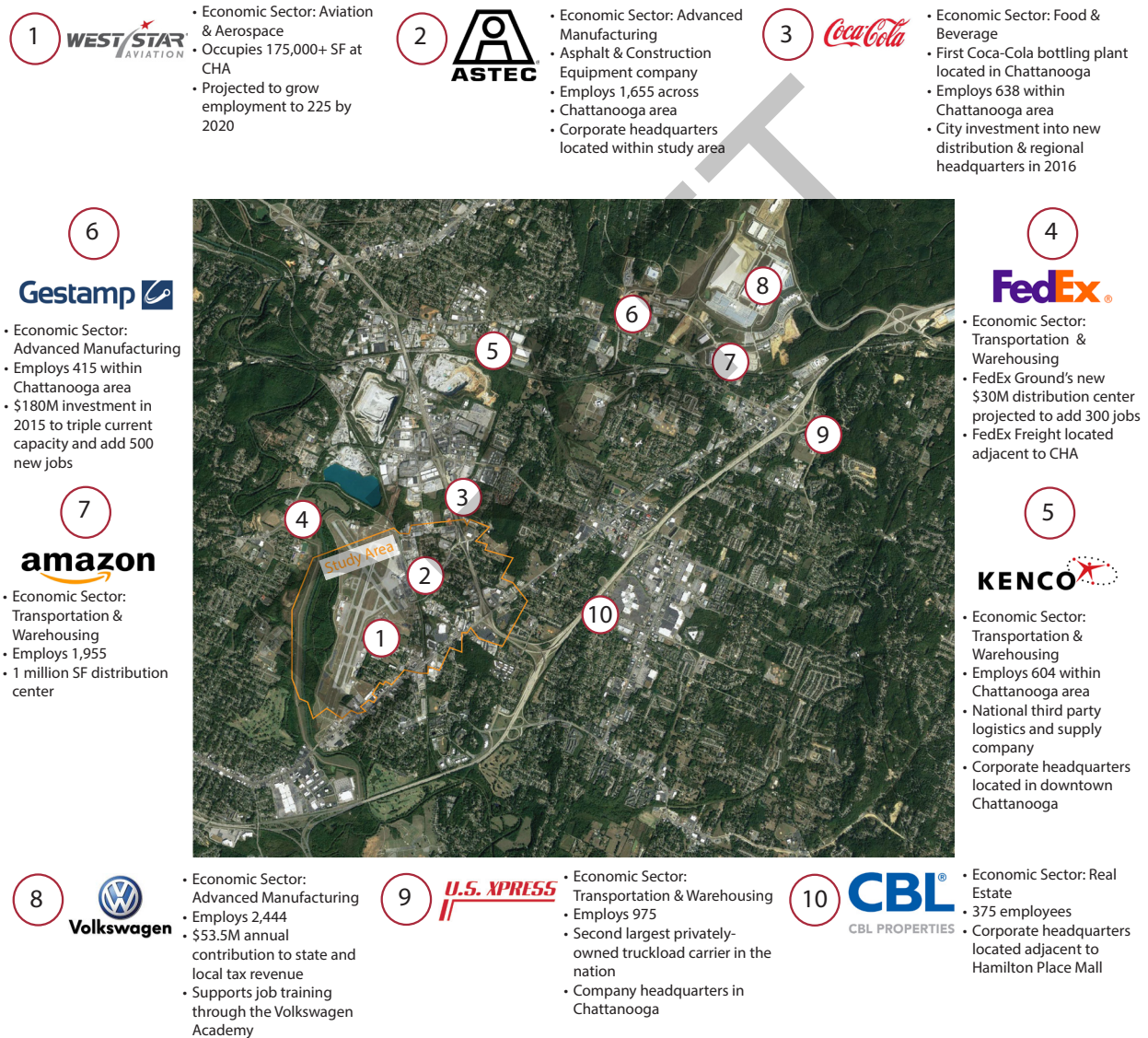


FIGURE 5-1 TOP EMPLOYERS IN PROXIMITY TO THE AIRPORT DISTRICT



▶ VOLKSWAGEN CHATTANOOGA

5.1.2 OVERVIEW OF KEY SECTORS ADVANCED MANUFACTURING

The Manufacturing sector is a key driver of economic growth in Tennessee, accounting for 16 percent of the state's GDP in 2016. More specifically, state employment growth in advanced manufacturing was 26.5 percent between 2011 and 2017, eclipsing the national growth rate of 4.3 percent.

Automotive manufacturing is a strong advanced manufacturing sub-sector, with state exports totaling \$6 billion as of 2015. Motor vehicle manufacturing accounts for 12,492 in state employment and is projected to grow by 22 percent by 2025, which is higher than the projected national growth rate of 6.2 percent. As of 2016, 832,800 cars, light trucks and SUVs were manufactured in Tennessee.

Growth in Chattanooga's advanced manufacturing sector is supported by its extensive and well-connected transportation infrastructure, which allows manufactured goods to seamlessly reach markets across the United States. Access to Class 1 rail lines has also catalyzed growth in Chattanooga's automotive sector.

The opening of Volkswagen's North American plant at the Enterprise South Industrial Park in 2011 stimulated employment growth and galvanized a regional automotive ecosystem.

"VOLKSWAGEN'S 1.9 MILLION SF AUTOMOTIVE PRODUCTION FACILITY HAS CREATED OVER 2000 JOBS AND HAS ATTRACTED SEVERAL AUTOMOTIVE SUPPLIERS TO THE AREA."

Volkswagen's 1.9 million SF automotive production facility has created over 2000 jobs and has attracted several automotive suppliers to the area, effectively growing the number and diversity of local manufacturing jobs. The company's recent announcement to build a second facility that will manufacture electric vehicles is an \$800 million investment that promises to bring an additional 1,000 new jobs to the region. Volkswagen has partnerships with component suppliers such as Gestamp, Plastics Omnium and Chattanooga Seating Co, which all together account for 4471 jobs in Chattanooga.

The Volkswagen facility is serviced by two railroad lines, CSX Transportation and Norfolk Southern. Volkswagen initiated the construction of an on-site rail terminal as approximately 85 percent of the company's cars are shipped out of Chattanooga by rail. The addition of this piece of transportation infrastructure has strengthened the automotive supply chain in Chattanooga and continues to contribute to regional economic growth.

Other notable developments include the \$55 million investment made by Yanfeng Automotive Interiors in 2017 to open a new manufacturing facility, which generated 325 new jobs. Additionally, M&M Industries is planning a \$42.7 million expansion of their current manufacturing facilities, which will create 110 more jobs.





KENCO GROUP

TRANSPORTATION AND WAREHOUSING

Tennessee's numerous transportation assets have allowed the state to evolve into a logistics and distribution hub. The state has access to eight primary and seven auxiliary interstate highways, is serviced by six of the seven Class 1 railway carriers that operate across the nation and has access to 1,046 miles of navigable waterways for cargo movement.

Tennessee has received \$3.8 billion in capital investment, with 16,889 businesses in the transportation, distribution and logistics sector. State employment in this sector totals 275,000 employees and this is expected to grow by 7.2 percent over the next 10 years.

Chattanooga's central location has facilitated the growth of the region's transportation and warehousing sector. The City is located in the middle of freight alley, a significant distribution and logistics region in the southeastern U.S. Approximately 80 percent of U.S. freight travels through Chattanooga and 80 percent of the nation's population is within a two-day truck transit time. The Port of Chattanooga also contributes to the City's strength in transportation and warehousing. Located on the Tennessee River, the port is the 13th largest of all inland ports across the United States.

The City's strategic location has attracted large distribution companies such as Amazon and FedEx. Amazon's two 1-million square foot distribution facilities provide over 4,500 jobs and the recently completed 273,000 FedEx Ground distribution center employs approximately 200 employees.

U.S. Xpress Enterprises is the second largest privately owned truckload carrier in the nation and chose Chattanooga for its headquarters location, which currently employs 975 people.

Kenco Group, a national third-party logistics and supply chain management company, has chosen to locate its corporate headquarters in Chattanooga, providing 604 jobs to the region.

Growth in this sector has also been catalyzed by the 2016 opening of Dynamo, a logistics, supply chain and transportation accelerator program that has established Chattanooga as a leader in logistics technology. The accelerator has been instrumental in the creation of a tech logistics start-up hub that includes WorkHound from Iowa and Locatible from Dublin, Ireland.

"APPROXIMATELY 80 PERCENT OF U.S. FREIGHT TRAVELS THROUGH CHATTANOOGA AND 80 PERCENT OF THE NATION'S POPULATION IS WITHIN A TWO-DAY TRUCK TRANSIT TIME."





▶ **ERLANGER BARONESS HOSPITAL IN CHATTANOOGA**

HEALTH SERVICES

The Health Care and Social Assistance industry is a significant part of Tennessee's economy. The sector employs over 365,100 workers across the state and grew 8.4 percent between 2011 and 2016.

The health care industry is a substantial driver of economic growth for the Chattanooga region, with six the region's top fifteen employers within the industry. Chattanooga is anchored by four major health systems and facilities, Erlanger Health, Siskin Hospital, CHI Memorial and Parkridge Health System. These health systems coupled with a strong network of community hospitals have contributed to the creation of a dynamic health care sector with a reputation for providing a high quality of care.

Erlanger Health System is the seventh largest public health system in the nation and the largest employer in Chattanooga, providing 6,202 jobs. Erlanger partners with the University of Tennessee at Chattanooga, Southern University and Chattanooga State to train health care professionals in the region.

In 2017, the \$16 million Erlanger Heart and Lung Institute opened in Chattanooga. It houses the state-of-the-art da Vinci robotic surgical system, which allows surgeons to perform minimally invasive robotic heart surgeries.

The presence of the 127,000 SF INCubator in Chattanooga, the third largest business incubator in the nation, has catalyzed a local start-up ecosystem anchored by the big healthcare companies. 3-D Ops, a Chattanooga based 3-D printing startup, emerged as a result of the incubator. The company recently partnered with Erlanger to install 3-D printed models to reduce surgery time and assist with job training.

“ERLANGER HEALTH SYSTEM IS THE SEVENTH LARGEST PUBLIC HEALTH SYSTEM IN THE NATION AND THE LARGEST EMPLOYER IN CHATTANOOGA.”





▶ COCA-COLA BOTTLING

FOOD AND BEVERAGE PRODUCTION

Food and Beverage production is a key economic driver in the state of Tennessee. As of 2016, food industries generated \$18.3 billion in total sales and employed 30,723 workers.

The processing and manufacturing sub-cluster comprise 67.7 percent of food-related business in the state.

Beverage production in the state has grown significantly over a five-year time period, with employment increasing by 20 percent since 2012 to a total of 7,552 workers in 2017.

Breweries have experienced the largest increase in employment, with the number of workers increasing from 44 employees in 2012 to 463 in 2017. Breweries account for the largest share of growth in Tennessee, now comprising 26 percent of all beverage businesses in the state.

Chattanooga is home to the first Coca-Cola bottling plant and the City continues to benefit from the company's growth. The City invested \$67 million into a new distribution and regional headquarters in 2016 which has allowed the company to modernize its operations. This investment into Coca-Cola brought economic benefits for the region and employment opportunities for the community. Coca-Cola Bottling Co. employs 638 people in the region and 280 of those employees work at the new facility.

Other significant players in Chattanooga's Food and Beverage Industry include Poultry Processors, Pilgrim's Pride Corporation and Koch Foods, which together account for 1,822 jobs in the Chattanooga region.



CHATTANOOGA IS HOME TO THE FIRST COCA-COLA BOTTLING PLANT AND THE CITY CONTINUES TO BENEFIT FROM THE COMPANY'S GROWTH."



▶ **BLUECROSS BLUESHIELD HEADQUARTERS**

FINANCE AND INSURANCE

State employment in the finance and insurance sector totaled 114,400 people in 2016, which represented an increase of 8.4 percent from 2011. Employment in insurance represents one of the highest paying industries in the state, with the weekly wages totaling \$1,435 in 2016.

Chattanooga has one of the most extensive fiber optic networks in the county which provides the necessary infrastructure to support business growth. It is not surprising that the City is home to several corporate headquarters given the 10-gigabit telecom capacity. BlueCross Blue Shield, Unum, and CIGNA Healthcare are all prominent companies in the growing finance and insurance sector in Chattanooga that serve as some of the top employers in the region.

BlueCross BlueShield of Tennessee is the largest health insurer in Tennessee and its corporate headquarters in downtown Chattanooga employs 6,083 people. The economic value of this company is significant, it brought in \$1.6 billion in state income and \$367.9 million in tax revenue in 2017. BlueCross BlueShield created 18,043 in direct and indirect jobs for the state in 2017, with over 5000 opportunities located in Chattanooga.

DRAFT

“BLUECROSS BLUE SHIELD, UNUM, AND CIGNA HEALTHCARE ARE ALL PROMINENT COMPANIES IN THE GROWING FINANCE AND INSURANCE SECTOR IN CHATTANOOGA.”





▶ **WEST STAR AVIATION AT CHATTANOOGA METROPOLITAN AIRPORT**

AEROSPACE AND AVIATION

Tennessee's growing aerospace and aviation sector is supported by its strong advanced manufacturing sector, key academic and research anchors and significant capital investment. State aerospace products and parts exports grew to \$1.59 billion in 2017.

West Star Aviation is a key anchor tenant at CHA that introduced the aerospace and aviation industry to Chattanooga. The company specializes in airframe repair and maintenance, engine repair and maintenance, avionics installation and repair, as well as interior refurbishment. The estimated annual economic impact of West Star Aviation on the Chattanooga area is \$8.7 million

The company's initial investment of \$22.3 million in 2015 established a 40,000 SF MRO facility that houses 20,000 SF of hangar space and 20,000 SF of mixed-use space for administrative and customer offices at CHA. West Star's footprint at CHA has grown to 175,000, and recently completed expansion which is inclusive of 65,000 SF maintenance facility, comprising hangar and office space. The expansion also includes a 45,000 SF paint facility that can accommodate the needs of sophisticated business aircraft such as the Gulfstream G550. This expansion is projected to grow employment to 140 by the end of 2018.

CHA received a \$4 million state grant to redevelop the 13-acre former National Guard Site. It intends to use this land to support further expansion of West Star's operations which will help the company reach its goal to employ 225 people by 2020.

Aerospace and aviation have not been an economic sector of focus for Chattanooga in the past, however the establishment and fast growth of West Star presents opportunities to advance this specialized and innovative sector.

“WEST STAR AVIATION IS A KEY ANCHOR TENANT AT CHA THAT INTRODUCED THE AEROSPACE AND AVIATION INDUSTRY TO CHATTANOOGA.”



TOP 10 INNOVATIVE COMPANIES IN CHATTANOOGA

Crunchbase was used to compile a list of the 10 most innovative companies that are headquartered in Chattanooga (Figure 5-2). Crunchbase is a database of innovative companies and people around the world. It uses an algorithm to rank companies based on private venture capital funding and investment, new patents, connections of a profile within the platform, company acquisitions, new articles and more.

Chattanooga’s extensive fiber-optic network has catalyzed the formation of an entrepreneurial start-up ecosystem. The majority of the City’s top innovative

companies are concentrated in the downtown core, with three located within the boundaries of the City’s Innovation District, which is anchored by the Edney Innovation Center. Nearly all of the listed companies fall under the technology sector, with the exception of two companies that are within the advanced manufacturing and health services sectors.

There is an opportunity to target companies that require larger and more flexible building typology. Innovative companies that require space for light manufacturing and assembly, research and development, and logistics and distribution would be a good fit for the Airport study area.

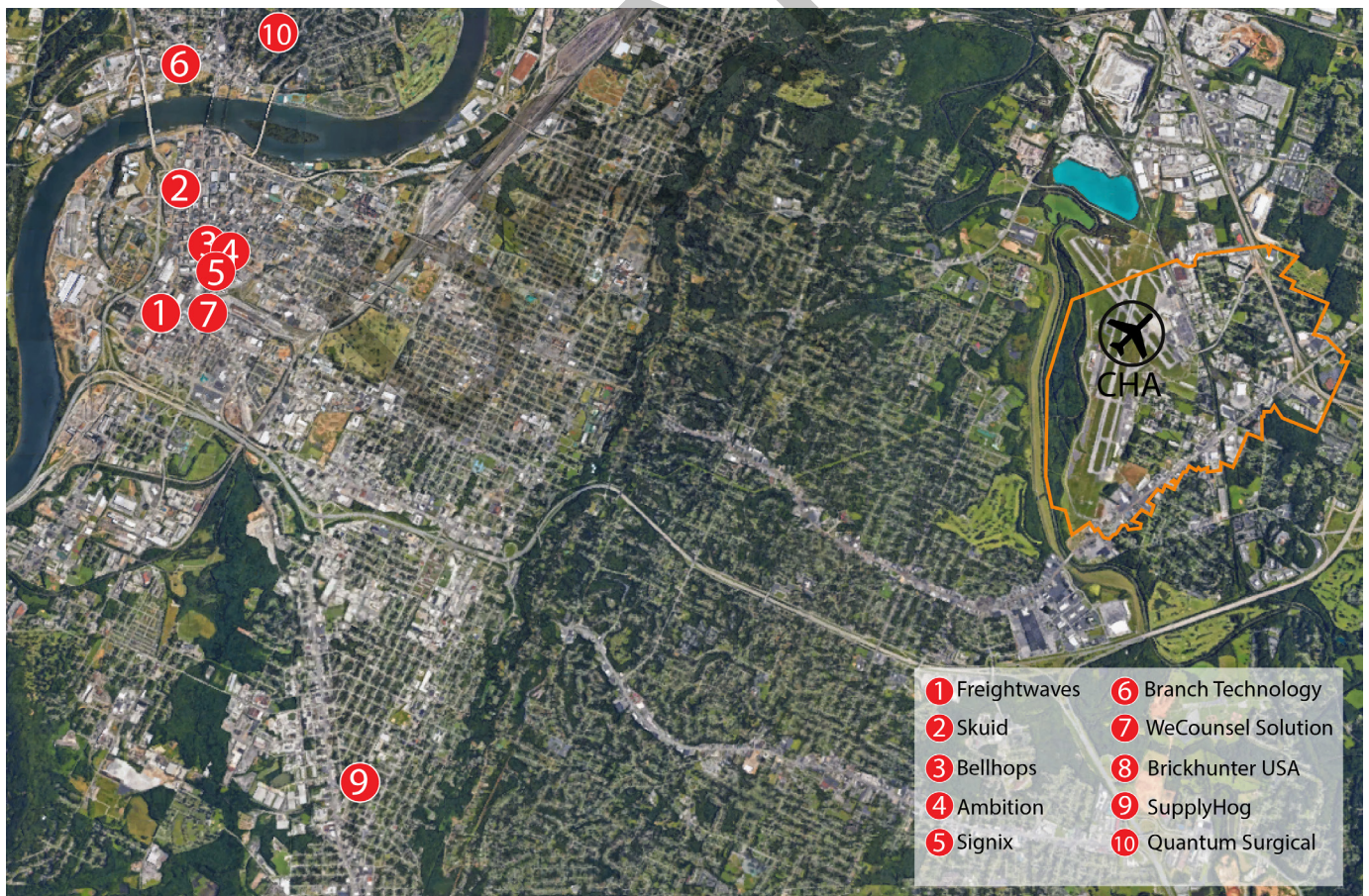


FIGURE 5-2 TOP 10 INNOVATIVE COMPANIES IN CHATTANOOGA

5.1.3 POST-SECONDARY OVERVIEW

Chattanooga's robust network of post-secondary institutions continue to cultivate an educated and highly skilled workforce to support regional economic growth and diversification. The top academic institutions in Chattanooga include **The University of Tennessee at Chattanooga** and **Chattanooga State Community College**.

THE UNIVERSITY OF TENNESSEE AT CHATTANOOGA

The University of Tennessee at Chattanooga (UTC) is the largest academic institution in the region, with 11,587 students enrolled for the 2017/2018 school year. The University has four academic colleges that offer a variety of undergraduate, graduate and doctorate degrees.

Most notably, the University houses the SimCenter which is a nationally recognized center for Applied Computational Science and Engineering. The objectives of the SimCenter are rooted in advancing technology and innovation in areas such as Additive and Advanced Manufacturing, Health & Biological Systems and High-Performance Computing. This program provides the education and training needed to advance and grow the region's economy. It places emphasis on hands-on, laboratory based learning.

UTC's Master of Automotive Systems Graduate degree was developed in collaboration with regional automotive manufacturers and suppliers. It focuses specifically on advanced manufacturing to remain flexible to the evolving nature of the industry.

CHATTANOOGA STATE COMMUNITY COLLEGE

The Chattanooga State Community College has a total student enrollment of 8,241 and supports a variety of accredited associate degrees and accelerated specialized programs.

The institution supports partnerships with many key employers in Chattanooga such as Volkswagen. The College is home to the Tennessee College of Applied Technology (TCAT), which has a reputation for cultivating workforce development and economic and community development. Some of the programs offered at this institution include Machine Tool Technology, Industrial Maintenance, Computer Support and Medical Assisting.

The school plans to add a new \$17 million technical building to keep pace with student demand, which will receive 95 percent of its funding from the state. Chattanooga State is also exploring a potential partnership with West Star Aviation to develop a "Future Aviation" program that will support hands-on education and skills training at the airport.



VOLKSWAGEN ACADEMY

In 2010 Volkswagen partnered with Chattanooga State and UTC to launch the “Volkswagen Academy”, a 163, 000 SF workforce development facility located in the Enterprise South Industrial Park. The facility provides education and advanced skills training for students and Volkswagen employees. This program is indicative of the commitment from both the academic institutions and a major employer to provide employment opportunities for local workers.

The launch of the Academy’s apprenticeship program is based on a curriculum that prepares workers for advances in technology and the changing nature of the manufacturing assembly line. The Volkswagen Academy Robotronics Program is a two-year program that combines classroom academic learning with paid hands-on job training. The goal of the program is to move beyond training for traditional manufacturing processes and instead to verse students in innovative and emerging technologies associated with advanced manufacturing including big data, cloud technology, troubleshoot maintenance and robotics.

2 + 2 PARTNERSHIP

The Volkswagen Group of America has partnered with the Chattanooga State Community College and Tennessee Technological University in Cookeville, TN to create a 2+2 partnership program that allows students to dually enroll in both institutions as they work towards a Bachelor of Science in Industrial Technology.

The program is housed at the Volkswagen Academy and combines the academic resources of the two post-secondary institutions with Volkswagen training.

**“STRONG PARTNERSHIPS
BETWEEN TOP EMPLOYERS AND
ACADEMIC INSTITUTIONS HELP
TO CULTIVATE A HIGHLY-SKILLED
WORKFORCE.”**



SUMMARY AND KEY TAKEAWAYS

The Volkswagen Academy is a significant economic asset that specifically targets growth in the automotive manufacturing sector. It is less focused on traditional manufacturing and is instead structuring programs around advanced manufacturing technology and processes. The programs are at the forefront of innovation and economic resilience as they are centered around equipping workers with skillsets needed to respond to the changing nature of the automotive manufacturing assembly line.

Chattanooga State and UTC both offer technical programs that support job training and growth in prominent economic sectors such as Advanced Manufacturing and Health Care.

Strong partnerships between top employers and academic institutions help to cultivate a highly-skilled workforce that is capable of growing the economy. Continual discussions between the private sector and public institutions will create partnership opportunities in the coming years.

The workforce development focus of Chattanooga State coupled with UTC's technical programs present opportunities for further partnerships with growing companies located in proximity to the study area.



▶ VOLKSWAGEN ACADEMY

5.1.4 ECONOMIC CLUSTER ANALYSIS INTRODUCTION

The Economic Cluster Analysis is a supplementary analysis to the Economic Overview. This technique provides an understanding of how a local area's economy is shifting over time, as measured by employment for different major sectors.

This study applies several economic development tools to analyze the growth of industry clusters in Chattanooga, including:

- **Location Quotient (LQ):** Compares a given industry's share of the local economy with that same industry's share of the regional or national economy. The LQ is used to understand the growth dynamics of industry clusters and provides an indication of those clusters that are likely to drive employment, as well as commercial real estate development, over the forecast horizon.
- **Economic Base Model:** Delineates the two components which include base economic activities (export-oriented) and non-basic activities (locally-oriented).
- **Shift-Share Analysis:** Estimates the growth or decline of each industry sector into three components: (1) change related to overall national employment trends for all industry sectors, (2) change related to national industry trends, and (3) most importantly, change in the regional competitive advantage for the industry sectors.
- **Traded and Targeted Clusters:** Identifies economic clusters in the region which have already been identified by local economic development agencies. Such targeted economic clusters present the opportunity for the alignment with the broader initiatives and investment of multiple stakeholders, adding momentum to existing commercial development plans.



▶ **TRANSPORTATION AND WAREHOUSING IS A KEY PILLAR FOR THE LOCAL ECONOMY**

LOCATION QUOTIENT

LQ analysis was used to quantify the degree of concentration of different major economic sectors in Chattanooga relative to the nation (Figure 5-3). Sectors with a higher concentration of employment are located towards the top of the graph. Sectors that are experiencing increasing concentration in the local area compared to the national average are located to the right side of the graph. A comparison was made between 2005 and 2015 to identify how Chattanooga's economy has transformed compared to the nation.

- A LQ of >1 indicates regional specialization, while a LQ of <1 indicates the region imports that sector's goods and services.
- The change in LQ over time provides a useful indicator of whether an industry cluster is growing or declining compared to the national average.

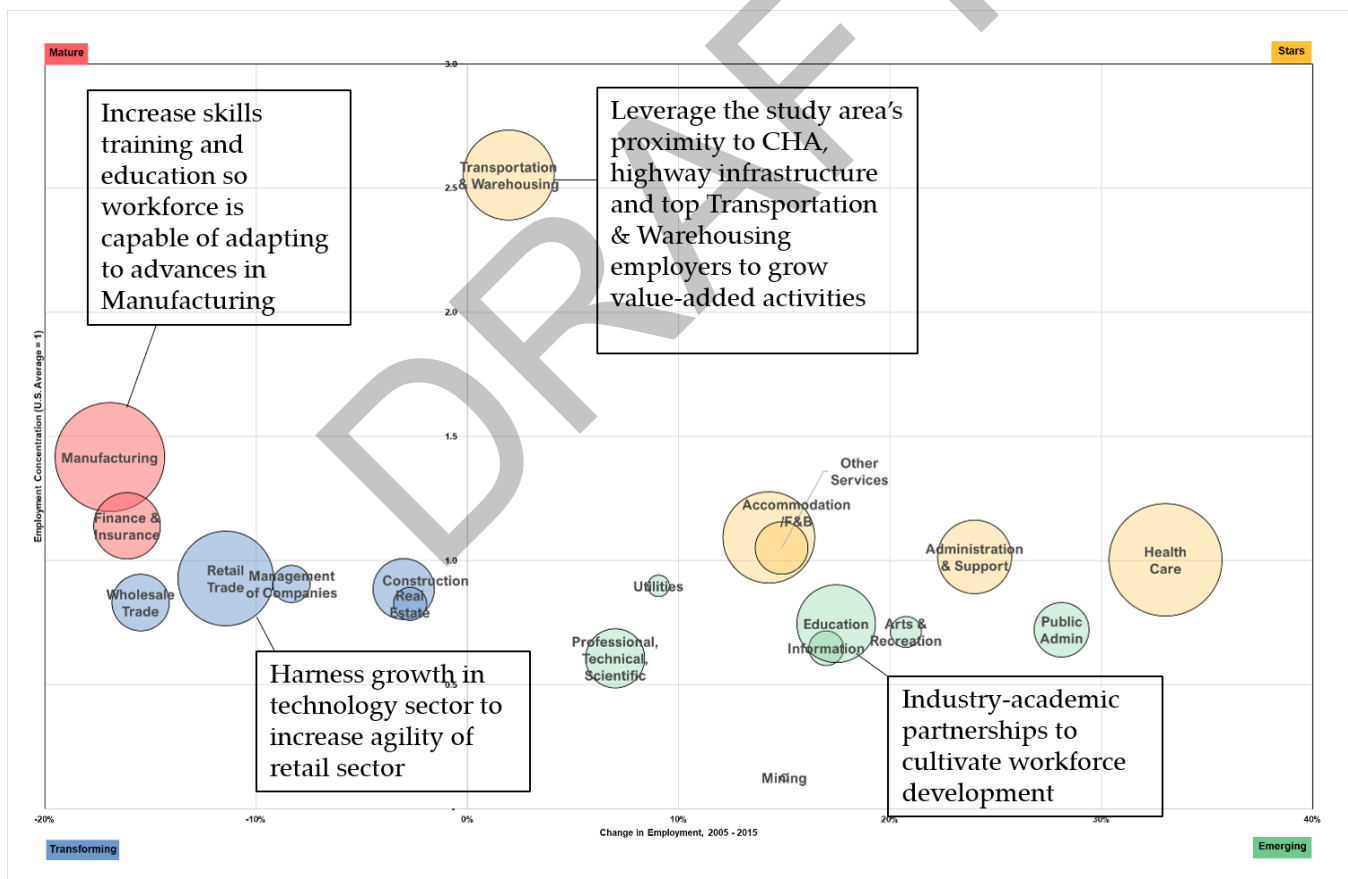


FIGURE 5-3 CHATTANOOGA EMPLOYMENT CONCENTRATION (2005-2015)

Change in LQ over a period of time is a useful indicator of whether an industry cluster is growing or declining in concentration in the local area compared to other regions. Industry sectors in a region can be grouped into four categories based upon their current LQ and their change in LQ.

STARS	EMERGING	MATURE	TRANSFORMING
<p>Sectors that are relatively more concentrated (LQ > 1) in Chattanooga metro compared to nationally and are becoming even more concentrated over time.</p>	<p>Sectors that are relatively less concentrated (LQ < 1) in Chattanooga metro than the nation, but have become more concentrated locally in recent years.</p>	<p>Sectors that are relatively more concentrated (LQ > 1) in Chattanooga metro than the nation, but are becoming less concentrated over time.</p>	<p>Sectors that are relatively less concentrated (LQ < 1) in the Chattanooga metro than nationally and are becoming even less concentrated over time.</p>
<p>Chattanooga “Star” Sectors:</p> <ul style="list-style-type: none"> • Transportation and Warehousing • Accommodation/F&B • Administration & Support • Other Services 	<p>Chattanooga “Emerging” Sectors:</p> <ul style="list-style-type: none"> • Professional, Technical, Scientific • Utilities • Education • Information • Arts and Recreation • Public Admin • Health Care 	<p>Chattanooga “Mature” Sectors:</p> <ul style="list-style-type: none"> • Manufacturing • Finance and Insurance 	<p>Chattanooga “Transforming” Sectors:</p> <ul style="list-style-type: none"> • Retail Trade • Wholesale Trade • Construction and Real Estate • Management of Companies
<p>Key Findings and Implications</p> <ul style="list-style-type: none"> • The growth in e-commerce means that logistics and distribution will continue to play a significant role in the national economy. • Given Chattanooga’s strategic location, it is not surprising that Transportation & Warehousing is growing faster than the national average. • Transportation & Warehousing is associated with value-added activity and job growth. A number of top employers in this sector are located around the study area, presenting an opportunity to use the site’s proximity to the airport and major highway networks to catalyze growth. • Administration & Support is associated with “back office” jobs that typically locate in more affordable, suburban locations. This growing sector already has an employment presence within the study area, which presents an opportunity to further leverage this positioning to attract more companies to the area. • Accommodation continues to grow in Chattanooga due to an expanding business and tourism industry. The study area can capitalize on high occupancy rates and a lack of hotels adjacent to the airport. 	<p>Key Findings and Implications</p> <ul style="list-style-type: none"> • Education is of growing importance to Chattanooga’s economy which presents an opportunity to create further workforce development partnerships between top employers & key academic institutions. • The study area is well positioned to support workforce development facilities given its proximity to major employment nodes. • Professional, Technical, Scientific and Health Care Sectors are growing due to the presence of the downtown Innovation Center and supportive academic training programs. 	<p>Key Findings and Implications</p> <ul style="list-style-type: none"> • Manufacturing activity continues to be more concentrated in Chattanooga relative to the U.S. average, however it is following the national trend of declining growth. The advent of Advanced Manufacturing is re-shaping the industry with the introduction of sophisticated technology, requiring a highly skilled and educated workforce. • Chattanooga will need to invest in further skills training and leverage the growth in Professional, Technical and Scientific employment to ensure the local employment based is well-equipped to keep pace with advances and innovation in the manufacturing sector. 	<p>Key Findings and Implications</p> <ul style="list-style-type: none"> • Low unemployment and rising incomes have increased consumer spending. Retail trends indicate that brick-and-mortar stores will continue to be equally important to an online presence if they are positioned correctly. • Chattanooga should harness its growing technology sector to ensure local retailers and wholesalers can remain relevant and agile to respond to changing consumer preferences. • Regional specialization in F&B presents an opportunity to position retail towards this sector. • High demand for residential units coupled with a growing economy will continue to transform the Construction and Real Estate Sector.

FOUR CATEGORIES IN INDUSTRY SECTORS

ECONOMIC BASE ANALYSIS

Economic Base Analysis (Figure 5-4) provides a broad indication of key exporting industries. For Chattanooga, these include **Manufacturing, Transportation & Warehousing, Finance & Insurance, Accommodation & Food Service, and Other Services**. Both Manufacturing and Transportation & Warehousing have high export value, thereby demonstrating the importance of growing these sectors through targeted investment.

Employment Sector	United States			Metro Chattanooga					ECON. BASE ANALYSIS	
	Employment	Employment	Change	Employment	Employment	Change	LQ	LQ	Basic	Non-Basic
	2005	2015		2005	2015		2005	2015	Employment	Employment
Agriculture, Forestry, Fishing and Hunting	920,239	1,041,689	13.2%	204	110	-46%	0.12	0.06	0	110
Mining, Quarrying, and Oil and Gas Extraction	524,102	720,870	37.5%	140	161	15%	0.14	0.13	0	161
Utilities	744,869	784,345	5.3%	1,138	1,241	9%	0.80	0.90	0	1,241
Construction	6,327,293	6,150,010	-2.8%	9,892	9,594	-3%	0.81	0.89	0	9,594
Manufacturing	13,575,714	12,138,869	-10.6%	36,434	30,269	-17%	1.40	1.42	8,901	21,368
Wholesale Trade	5,431,941	5,715,032	5.2%	9,896	8,366	-15%	0.95	0.83	0	8,366
Retail Trade	13,330,251	14,046,782	5.4%	25,939	22,974	-11%	1.01	0.93	0	22,974
Transportation and Warehousing	3,997,468	4,630,244	15.8%	20,406	20,806	2%	2.66	2.55	12,655	8,151
Information	2,827,293	2,785,734	-1.5%	2,718	3,180	17%	0.50	0.65	0	3,180
Finance and Insurance	5,371,702	5,649,363	5.2%	13,516	11,341	-16%	1.31	1.14	1,396	9,945
Real Estate and Rental and Leasing	1,933,399	1,970,936	1.9%	2,949	2,869	-3%	0.80	0.83	0	2,869
Professional, Scientific, and Technical Services	6,407,770	8,392,778	31.0%	8,385	8,972	7%	0.68	0.61	0	8,972
Management of Companies and Enterprises	1,717,970	2,280,235	32.7%	3,969	3,639	-8%	1.20	0.91	0	3,639
Administration & Support	6,667,408	7,759,631	16.4%	11,184	13,869	24%	0.87	1.02	210	13,659
Educational Services	10,535,982	11,887,247	12.8%	13,299	15,621	17%	0.66	0.75	0	15,621
Health Care and Social Assistance	13,705,464	18,168,563	32.6%	24,115	32,084	33%	0.92	1.00	102	31,982
Arts, Entertainment, and Recreation	1,694,430	2,003,713	18.3%	2,085	2,518	21%	0.64	0.71	0	2,518
Accommodation and Food Services	8,949,179	11,002,947	22.9%	18,534	21,180	14%	1.08	1.09	1,811	19,369
Other Services (excluding Public Administration)	3,639,306	3,860,788	6.1%	6,218	7,143	15%	0.89	1.05	347	6,796
Public Administration	4,829,484	6,052,431	25.3%	6,007	7,697	28%	0.65	0.72	0	7,697
TOTAL	113,131,264	127,042,207	12.3%	217,028	223,634	3.0%	1.00	1.00	25,422	198,212
									RATIO	0.13

FIGURE 5-4 CHATTANOOGA ECONOMIC BASE ANALYSIS



SHIFT SHARE ANALYSIS

The Shift-Share Analysis (Figure 5-5) identifies Chattanooga's comparative advantages for various industry clusters over the rest of the nation by studying the overall growth of the entire national economy as well as the growth of a particular industry cluster nationally versus locally.

This analysis identifies Chattanooga's comparative advantage in: **Administration & Support** (i.e. "back office" activity), **Educational Activities, Information, Accommodation & Food Services and Other Services** (such as repair & maintenance and personal services). These four industry sectors represent key opportunities for Chattanooga to leverage for future development.

Employment Sector	United States			Metro Chattanooga					SHIFT SHARE ANALYSIS		
	Employment	Employment	Change	Employment	Employment	Change	LQ	LQ	National	Industrial	Regional
	2005	2015		2005	2015		2005	2015	Share	Mix	Shift
Agriculture, Forestry, Fishing and Hunting	920,239	1,041,889	13.2%	204	110	-46.1%	0.12	0.06	25	2	-121
Mining, Quarrying, and Oil and Gas Extraction	524,102	720,870	37.5%	140	161	15.0%	0.14	0.13	17	35	-32
Utilities	744,869	784,345	5.3%	1,138	1,241	9.1%	0.80	0.90	140	-80	43
Construction	6,327,293	6,150,010	-2.8%	9,892	9,594	-3.0%	0.81	0.89	1,216	-1,494	-21
Manufacturing	13,575,714	12,138,869	-10.6%	36,434	30,269	-16.9%	1.40	1.42	4,480	-8,336	-2,309
Wholesale Trade	5,431,941	5,715,032	5.2%	9,896	8,366	-15.5%	0.95	0.83	1,217	-701	-2,046
Retail Trade	13,330,251	14,046,782	5.4%	25,939	22,874	-11.4%	1.01	0.93	3,190	-1,795	-4,359
Transportation and Warehousing	3,997,468	4,630,244	15.8%	20,406	20,806	2.0%	2.66	2.55	2,509	721	-2,830
Information	2,827,293	2,785,734	-1.5%	2,718	3,180	17.0%	0.50	0.65	334	-374	502
Finance and Insurance	5,371,702	5,849,363	5.2%	13,516	11,341	-16.1%	1.31	1.14	1,662	-963	-2,874
Real Estate and Rental and Leasing	1,933,399	1,970,936	1.9%	2,949	2,869	-2.7%	0.80	0.83	363	-305	-137
Professional, Scientific, and Technical Services	6,407,770	8,392,778	31.0%	8,385	8,972	7.0%	0.68	0.61	1,031	1,566	-2,011
Management of Companies and Enterprises	1,717,970	2,280,295	32.7%	3,969	3,639	-8.3%	1.20	0.91	488	811	-1,629
Administration & Support	6,667,408	7,759,631	16.4%	11,184	13,869	24.0%	0.87	1.02	1,375	457	853
Educational Services	10,535,982	11,887,247	12.8%	13,299	15,621	17.5%	0.66	0.75	1,635	70	616
Health Care and Social Assistance	13,705,464	18,168,563	32.6%	24,115	32,084	33.0%	0.92	1.00	2,965	4,888	116
Arts, Entertainment, and Recreation	1,694,430	2,003,713	18.3%	2,085	2,518	20.8%	0.64	0.71	256	124	52
Accommodation and Food Services	8,949,179	11,002,947	22.9%	18,534	21,180	14.3%	1.08	1.09	2,279	1,974	-1,607
Other Services (excluding Public Administration)	3,639,306	3,860,788	6.1%	6,218	7,143	14.9%	0.89	1.05	765	-386	547
Public Administration	4,829,484	6,052,431	25.3%	6,007	7,697	28.1%	0.65	0.72	739	782	169
TOTAL	113,131,264	127,042,207	12.3%	217,028	223,634	3.0%	1.00	1.00	26,686	-3,003	-20,080

FIGURE 5-5 CHATTANOOGA SHIFT SHARE ANALYSIS

TRADED CLUSTER ANALYSIS

An important dimension of the local economy are its constituent economic clusters.

There are two types of clusters: **Traded Clusters** and **Local Clusters** (Figure 5-6). Traded Clusters are ones where the region is a net exporter. They are the key economic drivers that bring new wealth and growth to the local area.

Local Clusters consist of industries that serve the local market. Regional employment in a local cluster is typically proportional to its population.

Metro Chattanooga’s main export clusters are **Insurance, Transportation, Textiles, Trailers and Appliances, Communications and Printing**. The majority of the region’s industries are local clusters (63 percent) versus the traded clusters (37 percent).

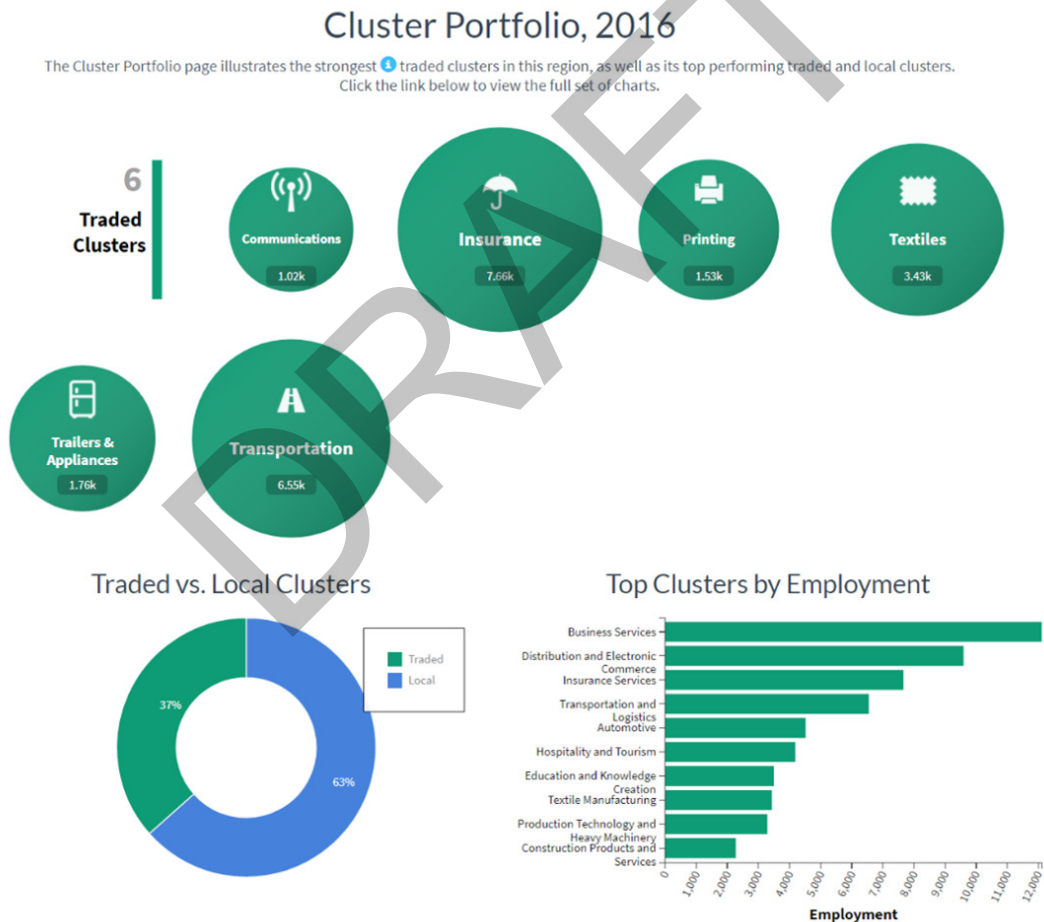


FIGURE 5-6 CHATTANOOGA TRADED AND LOCAL CLUSTERS

EMPLOYMENT CONCENTRATION MAPS

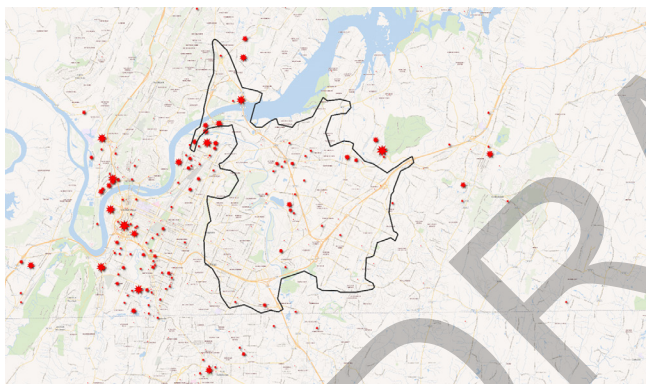
The employment concentration maps provide a spatial overview of the location of key employment nodes in Chattanooga. Full size version of the maps can be found in Appendix 1.

As shown in the map below, key Manufacturing employment nodes include the automotive cluster at Enterprise South Industrial Park, in addition to the Center South Riverport Industrial Park located on the Amnicola Highway on the Tennessee River.

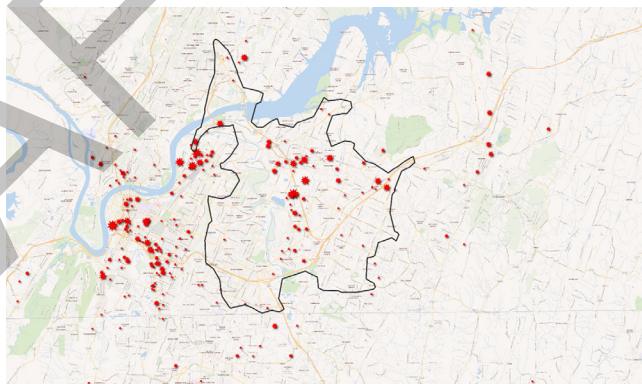
There is also a cluster of companies located along Manufactures Road on the north shore. Wholesaling employment follows a similar distribution pattern to manufacturing due to the similarities in land use and building typologies between these sectors.

There is also a significant proportion of the Transportation and Warehousing employment located within a 10-minute drive time from the airport, anchored by Amazon and US Xpress Enterprises.

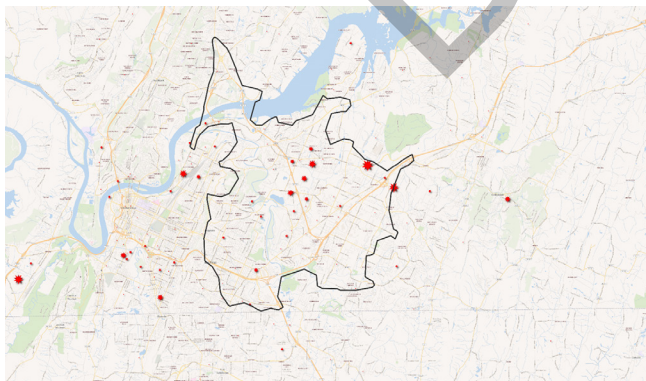
▶ MANUFACTURING EMPLOYMENT



▶ WHOLESALING EMPLOYMENT



▶ TRANSPORTATION & WAREHOUSING EMPLOYMENT

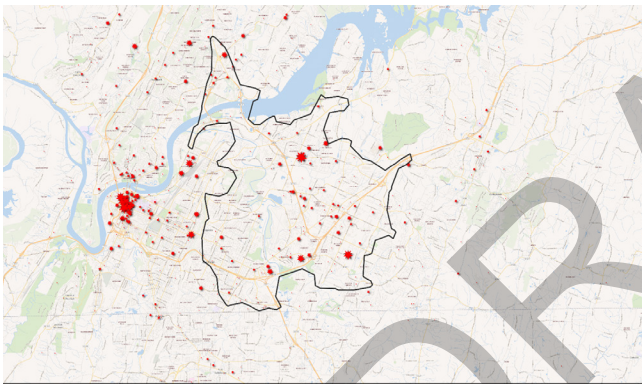


EMPLOYMENT CONCENTRATION MAPS

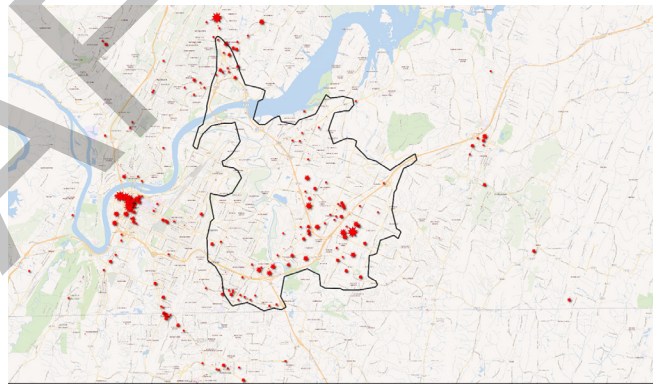
The most notable clusters of Professional, Scientific & Technical Employment as well as Finance & Insurance employment are located within the downtown due to the presence of Chattanooga's top academic institutions as well as the increasing residential density in the urban core. Accommodation & Food Services employment is clustered around the key retail and entertainment nodes in the downtown area as well as Hamilton Place.

Administrative & Support Employment is evenly distributed between the downtown area and areas within a 10-minute drive time from the airport. The Administrative and Support employment surrounding the airport is likely back of office employment that supports the wholesaling, transportation and warehousing and manufacturing clusters in the area.

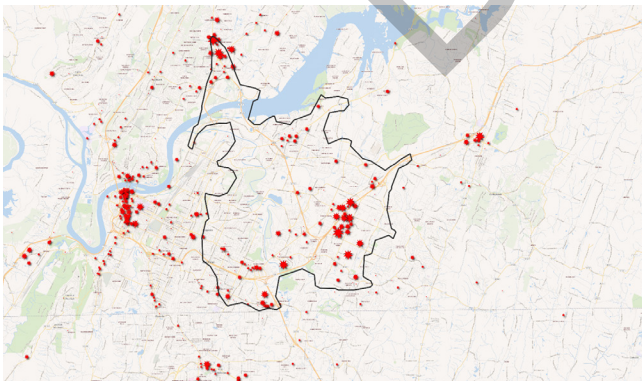
► PROFESSIONAL, SCIENTIFIC & TECHNICAL EMPLOYMENT



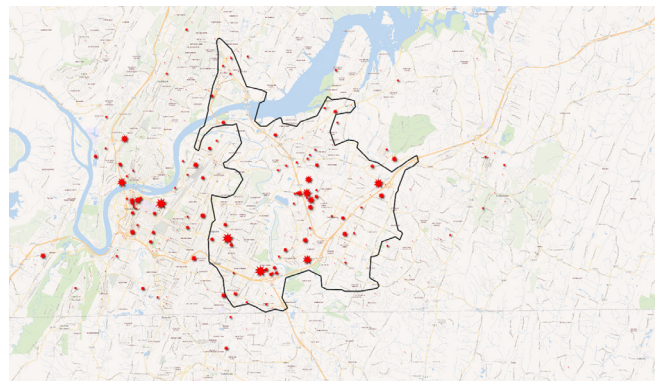
► FINANCE & INSURANCE EMPLOYMENT



► ACCOMMODATION & FOOD SERVICES EMPLOYMENT



► ADMINISTRATIVE & SUPPORT EMPLOYMENT



ECONOMIC CLUSTER ANALYSIS - KEY FINDINGS

Metro Chattanooga's employment only grew 3 percent from 2005 to 2015, while U.S. employment grew by over 12 percent.

Transportation & Warehousing has been a key pillar for the local economy, but this sector has not grown as fast as it has nationally in recent years despite being at the crossroads of Alabama, Georgia and Tennessee and Interstates 75, 24 and 59.

The second key sector for the local economy, Manufacturing, has declined even faster locally than nationally.

Retail employment dropped over 11 percent from 2005 to 2015 even as it grew by over 5 percent nationally.

Sectors which have shown moderate strength locally include: Administration & Support, Information (Media) and Educational Services.

The region's export activity is primarily focused on Automotive, Machinery, Trailers, and Textiles, as well as its key services such as Transportation and Insurance.

The highest concentration of employment around the study area are within the Manufacturing, Wholesaling, Transportation and Warehousing and well as back-of office employment. Further development in the study area should build off the momentum of these prominent employment nodes by targeting development within these sectors.

AIRPORT DISTRICT TARGET EMPLOYMENT SECTORS

Transportation & Warehousing, Advanced Manufacturing, and Food & Beverage Production are prominent sectors in Chattanooga that have excellent growth potential in the study area. Targeting investment growth of the concentration of Chattanooga's Transportation & Warehousing employment can be accomplished by leveraging the proximity to significant employers, transportation infrastructure, and the airport. The growth of West Star Aviation is supportive of the establishment of an Aerospace & Aviation sector in Chattanooga.

Educational partnerships have already been established between local post-secondary educational institutions and key employers in and near the study area.

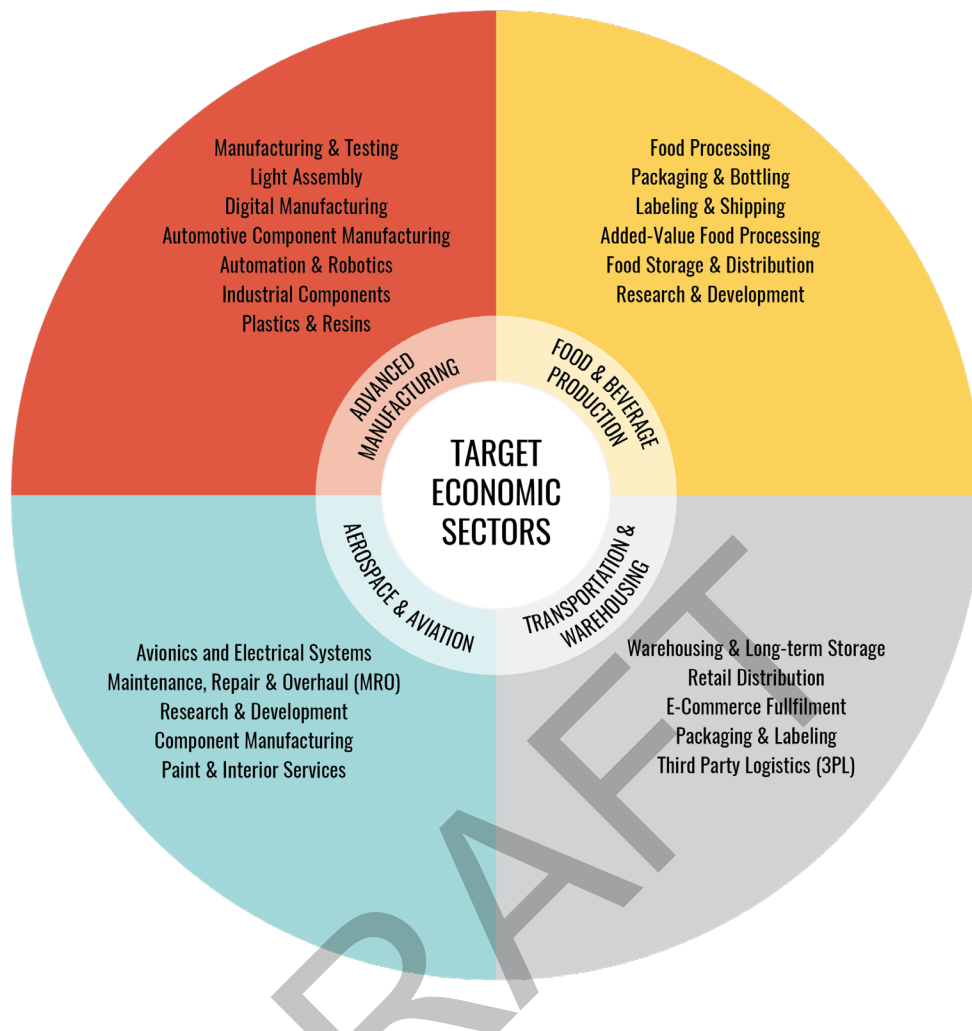


FIGURE 5-7 AIRPORT DISTRICT TARGET SECTORS

These partnerships can be leveraged and expanded upon to further skills training and employment growth in the Airport District.

Figure 5-7 presents the recommendations for target economic sectors that are most suitable and have best viability for growth at the Airport District. These four target economic sectors are divided into sub-sectors that have future growth opportunities. They leverage the current assets in the Airport District, as well as emerging employment trends that were discovered through economic analysis and stakeholder consultation.

Building off anchor companies such as Coca-Cola, FedEx, Xpress Enterprises, Yanfeng Interiors, and Volkswagen; all near the Airport District, provides a natural path to pursue economic development and recruitment based on these sectors. Targeted investment to grow the concentration of

Chattanooga’s Transportation & Warehousing employment by leveraging proximity to CHA, and major highways will assist in growing the other targeted sectors.

Educational partnerships have already been established between local post-secondary educational institutions and key employers in and near the study area. These partnerships can be supported and expanded upon to further skills training and employment growth in the Airport District. Employers will be more likely to locate or expand operations in the District if there is a strong labor pool with a skillset that matches jobs.

5.2 MARKET ANALYSIS

5.2.1 INTRODUCTION

A real estate market analysis was undertaken to determine the opportunity for office, industrial, retail, hotel and multi-family residential development at the Airport District over the next 20 years.

The market analysis consists of the following components:

- **Market Overview** to understand the important trends occurring at a regional scale that will impact development within the study area.
- **Supply Analysis** to garner an understanding the competitive inventory around the study area.
- **Demand Analysis** to understand the likely drivers for space in the region.

The culmination of this research and analysis informed the potential opportunities for future development within the study area. The demand analysis for each asset class was also used to inform the recommendations for the development program of the priority areas and catalyst projects later in this study. Land uses that displayed excellent short to medium-term opportunities in the demand analysis provided input to generating development programs for the priority areas and catalytic sites.

DEMAND ANALYSIS METHODOLOGY

The Demand Analysis identified a series of estimates of how quickly office, industrial, retail, hotel and multi-family residential space will be absorbed within metro Chattanooga over the next 20-year forecast horizon.

Having established how fast absorption is slated to occur over the entire metro area, the next stage of the analysis is to answer the following questions:

- How much of the metro area's future demand for office, industrial, retail, hotel and multi-family residential will be developed in the local submarket containing the Airport District as well as neighboring submarkets?
- What share of these submarkets' demand for various land uses could the Airport District capture?

A series of market share analyses were undertaken to answer these questions.

For each land use of interest, a model was created that first examines current and historic market trends in the Airport District submarket and its neighboring submarkets and compares these trends with those occurring within metro Chattanooga.

Each submarket's current share of the Metro's total inventory is used as a guide to determine its "fair share" of future development. This initial estimate simply projects each submarket to maintain its share of the regional activity over the next two decades as the local economy expands.

In order to refine this baseline approach, key variables such as each submarket's historic vacancy rates, absorption rates, new construction, lease rate trends and historic changes in office and industrial employment are compared to the Metro average. The objective is to identify "hot" submarkets which are showing an accelerating trend vis-a-vis the metro average, as well as submarkets, which are not as likely to grow, as evidenced by high vacancy, low lease rates, a lack of growth in lease rates, flat employment over recent years, or conversely indicators of a built-out submarket.

The end product of the submarket analysis is an estimate of each submarket's absorption of each land use of interest over the next 20 years. These submarket estimates form the basis of the second stage of the market analysis, which is to identify the amount of this new space that the Airport District could conceivably capture.

The total demand for each land use in the Airport District was used to inform the development program in the priority areas and catalyst sites.

DRIVE TIME ANALYSIS

The drive time analysis provides an understanding of the development opportunity at the Airport District. Figure 5-8 depicts the areas within 10 minutes and 20 minutes from the airport.

The analysis of the demographic make-up within a 10-minute drive time from the airport (shown in Figure 5-9) identifies the local market demand for retail and F&B and helps to inform the recommended positioning for these types of land uses.

The demographic profile highlights the 2016 median household incomes around the study area. The majority of the market within a 10-minute drive from the airport has a median household income of up to \$60,000 per year, with a few middle-class income areas within the \$60,000 to \$80,000 range. This suggests that the Airport District should target a mix of convenience and service retail, grab and go F&B as well as local restaurants and coffee shops.

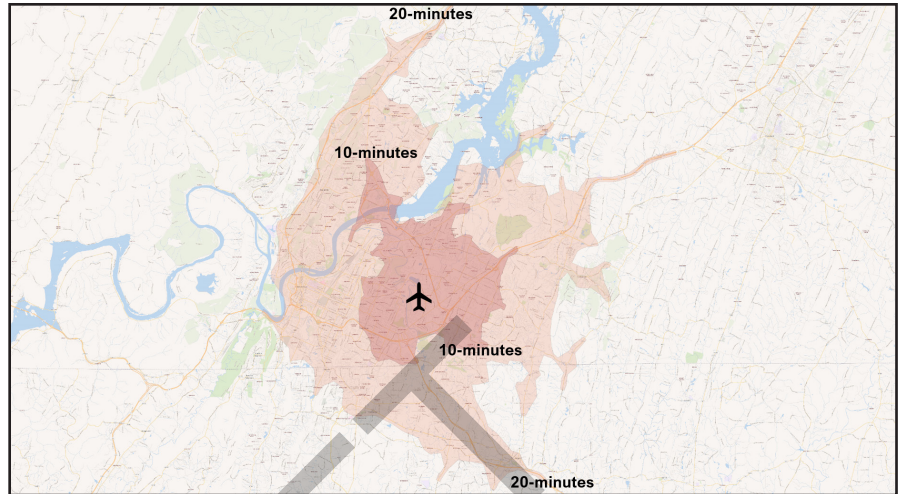


FIGURE 5-8 DRIVE TIME ZONES FROM CHA

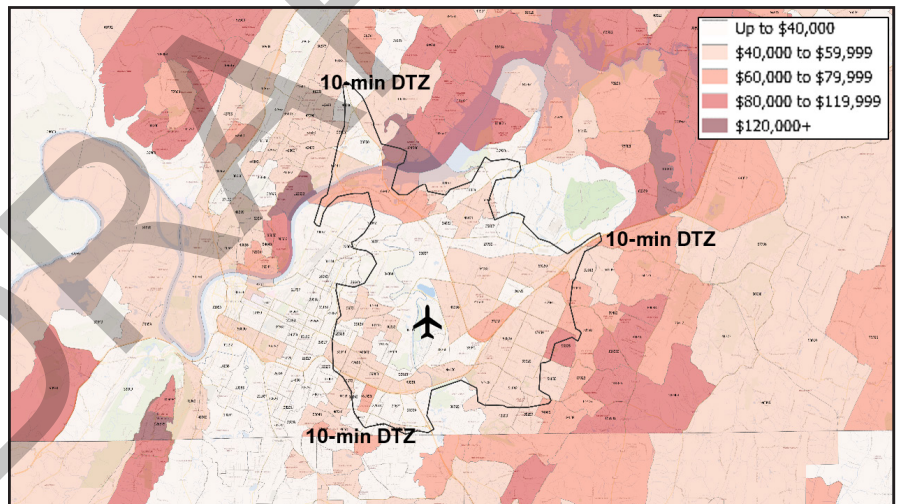


FIGURE 5-9 DEMOGRAPHIC PROFILE WITHIN 10 MINUTES DRIVE OF CHA



THE POINTE CENTRE

5.2.2 OFFICE MARKET OVERVIEW

Chattanooga’s office market has been experiencing steady growth due to induced demand brought on by an improved economy.

Vacancy rates rose from 4.3 percent in 2017 to 5 percent as of Q3 2018 yet remain stable compared to historical rates which is reflective of strong demand for office product.

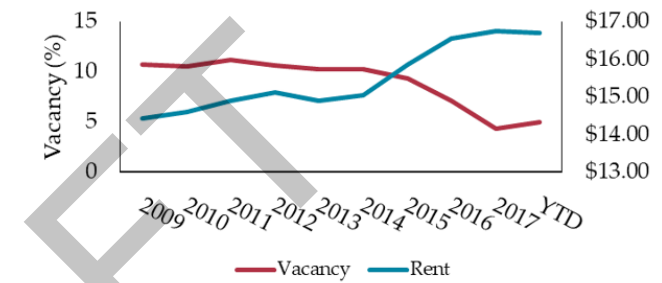
City-wide base rents decreased from \$16.74 in 2017 to \$16.70 in Q3 2018, which can be attributed to the transition away from full-service leases to triple net leases.

The third quarter of 2018 has been characterized by decrease in leasing activity from 412,012 SF in 2017 to 186,356 SF in 2018 YTD.

The City has experienced negative absorption of 109,245 SF as of Q3 2018. Office construction has also declined, with only one building totaling 30,000 SF under construction in Chattanooga.

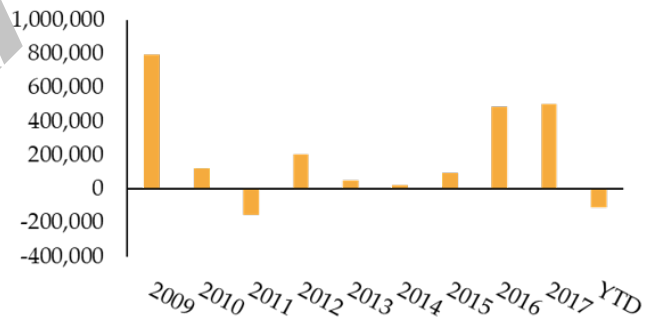
According to NAI Charter, the medical office sector has been performing well given the strength of the health services sector in Chattanooga. The demand for high-quality office product is exemplified by The Atrium Medical Center along Gunbarrel Road, which offers Class A office space at a triple-net lease rate of \$28 PSF. There is only 15,000 SF of space left for lease.

Chattanooga Office Vacancy & Rent Trends



Data Source: Chattanooga Area Chamber of Commerce

Net Absorption SF Total



Data Source: Chattanooga Area Chamber of Commerce

BY THE NUMBERS: OFFICE 2018

<p>18,245,740 SF TOTAL OFFICE INVENTORY</p> <p>5% VACANCY RATE</p>	<p>AVERAGE RENTAL RATE</p> <p>\$16.70 per square foot</p>	<p>TOTAL NET ABSORPTION</p> <p>-109,245 square feet</p>	<p>UNDER CONSTRUCTION</p> <p>1 Buildings 30,000 square feet</p>
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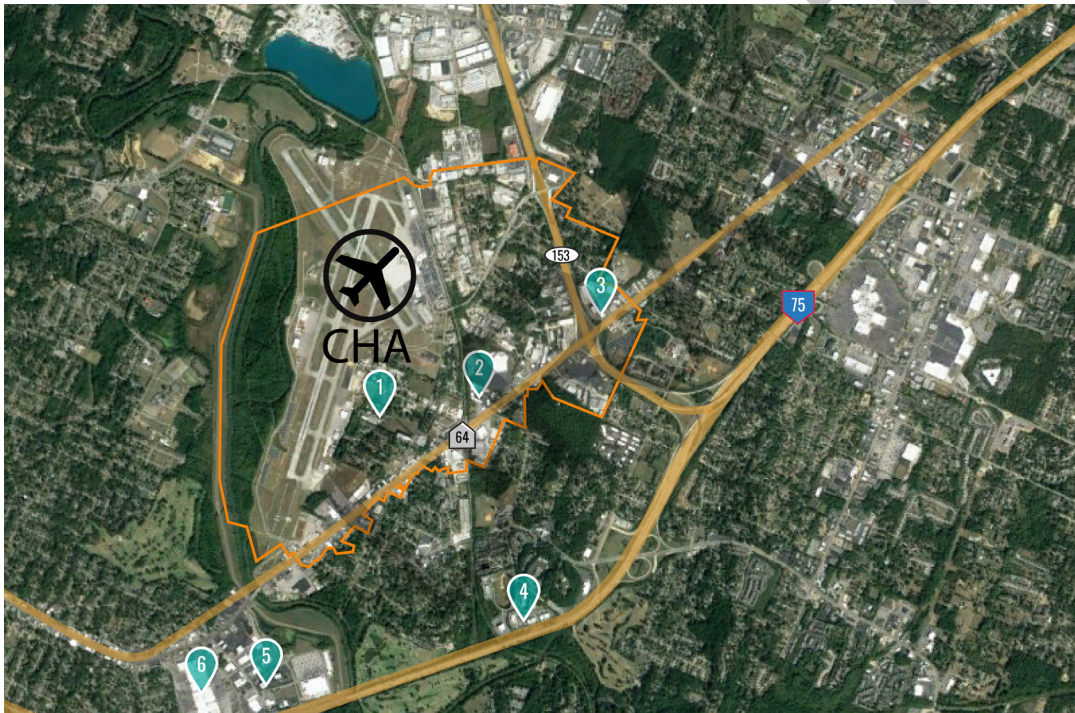
OFFICE SUPPLY ANALYSIS

The majority of the competitive office supply in proximity to the study area is concentrated along the I-75 and Lee Highway.

The Pointe Centre and the Osbourne Office Park are the largest multi-tenant office complexes, comprising 350,000 SF and 475,000 SF respectively.

The Eastgate Town Center supports a mix of office, retail and institutional uses and is characterized by a large building footprint of 755,000 given its previous use as a mall. The office space is at 90 percent occupancy.

The Air Office Park and the Executive Business Park are currently the only two significant office developments in the study area. The Executive Business Park is currently 50 percent vacant.



MAP OF OFFICE COMPETITIVE INVENTORY

#	Development Name	Format	Square Footage (Approx)	Age (Approx)
1	Air Office Park	Office Complex	21,250	N/A
2	Executive Business Park	Office Complex	63,441	33 (recently renovated)
3	Lee Pointe	Office Building	57,859	4
4	The Pointe Centre	Office Complex	350,000	N/A
5	Eastgate Town Center	Enclosed Mall	755,000	53
6	Osbourne Office Park	Office Complex	475,000	N/A

OFFICE DEMAND ANALYSIS

The metro Chattanooga region is expected to add 7,791,008 SF of new office space over the next 20 years.

The competitive market share analysis projects between 301,000 SF and 501,000 SF of new office space will be absorbed in the Airport District in the next 10 years. Looking forward to 2040, it is expected that between 560,000 SF and 933,000 SF of office space will be supported in the Airport District.

Subject Site Development Program & Land Requirements (Cumulative)					
Scenario	2020	2025	2030	2035	2040
Conservative					
Gross Bldg Area (SF)	29,000	168,000	301,000	431,000	560,000
Net Developable Area (Acres)	2	11	20	28	37
Moderate					
Gross Bldg Area (SF)	39,000	224,000	401,000	574,000	746,000
Net Developable Area (Acres)	3	15	26	38	49
Aggressive					
Gross Bldg Area (SF)	49,000	280,000	501,000	718,000	933,000
Net Developable Area (Acres)	3	18	33	47	61

FIGURE 5-10 SUMMARY OF 20-YEAR FORECASTED DEMAND FOR OFFICE



OFFICE MARKET- KEY TAKEAWAYS

With the increase in lease rates and decreasing vacancy rates, it is expected that 401,000 SF of office space will be in demanded in the study area by 2030, which will grow to 746,000 SF over a twenty-year period.

There are a number of underperforming office developments in the study area which present opportunities for redevelopment and repositioning.

The presence of high-quality office product such as The Pointe Center, The Atrium Medical Center and Osbourne Office Park indicate that the area surrounding the study area is attractive for office development.

Concentration of key Transportation & Warehousing and Advanced Manufacturing employers around the study area present opportunities for development of space for back office activities that support these growing sectors.



Osborne Office Park



The Atrium Medical Center



► VOLKSWAGEN CHATTANOOGA MANUFACTURING FACILITY

5.2.3 INDUSTRIAL MARKET OVERVIEW

The industrial market in Chattanooga is performing well due to increased economic growth brought on by the introduction of Volkswagen and Amazon. Vacancy rates increased from 4.1 percent in 2017 to 5.6 percent in the third quarter of 2018 yet remain low compared to historical rates. Tight vacancy rates have been met with an increase in rental rates, as the third quarter of 2018 grew to \$4.08 PSF from \$3.65 PSF in 2017.

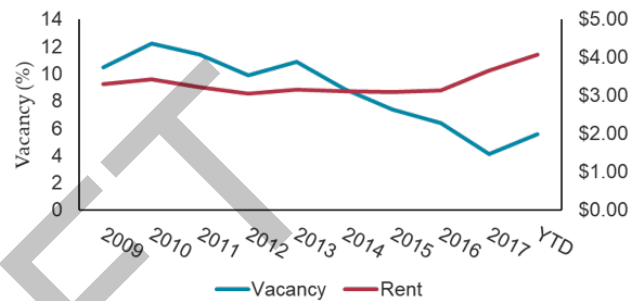
According to NAI Charter, the primary issue challenging the industrial market is the shortage of suitable and sophisticated industrial product that is being demanded by the growing manufacturing sector, particularly automotive suppliers to Volkswagen. Automotive suppliers, such as Gestamp, have resorted to converting old manufacturing facilities to suit their needs.

Growth in industrial supply is further challenged by the City's topography which makes development difficult as evidenced by the lack of construction activity over the past two years.

There was negative net absorption of -546,343 SF in Q3 2018. Lack of suitable land for new industrial development will keep absorption low.

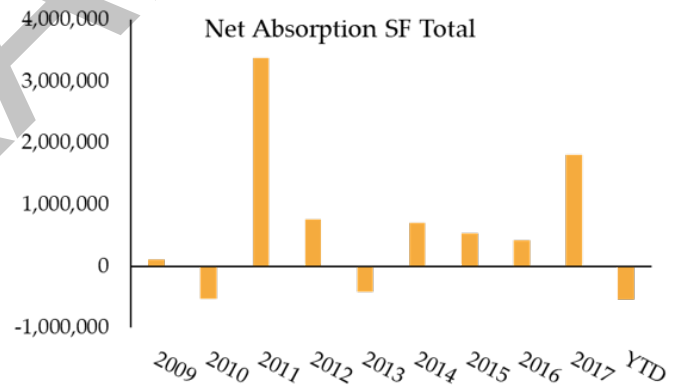
However, increasing rental rates present a strong business case for redevelopment and NAI has forecasted that construction activity will pick-up again over the next few years.

Chattanooga Industrial Vacancy & Rent Trends



Data Source: Chattanooga Area Chamber of Commerce

Net Absorption SF Total



Data Source: Chattanooga Area Chamber of Commerce

BY THE NUMBERS: INDUSTRIAL 2018

<p>36,575,152 SF TOTAL INDUSTRIAL INVENTORY</p> <p>5.6% VACANCY RATE</p>	<p>AVERAGE RENTAL RATE</p> <p>\$4.08 per square foot</p>	<p>TOTAL NET ABSORPTION</p> <p>-546,343 square feet</p>	<p>UNDER CONSTRUCTION</p> <p>0 Buildings 0 square feet</p>
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INDUSTRIAL SUPPLY ANALYSIS

The majority of the industrial supply surrounding the study area is concentrated in the Enterprise South Industrial Park as well as Bonny Oaks Industrial Park (Figure 5-11).

Enterprise South Industrial Park is attractive given its access to the I-75 and rail connectivity as well as being serviced by public utilities. Both of these industrial parks are approaching full build out with

only three approximate 20-acre sites available at Enterprise South and approximately 5-acres at Bonny Oaks.

Volkswagen has freed up 300-acres of land at Enterprise South for potential suppliers which could bring up to 20 new companies to the area.

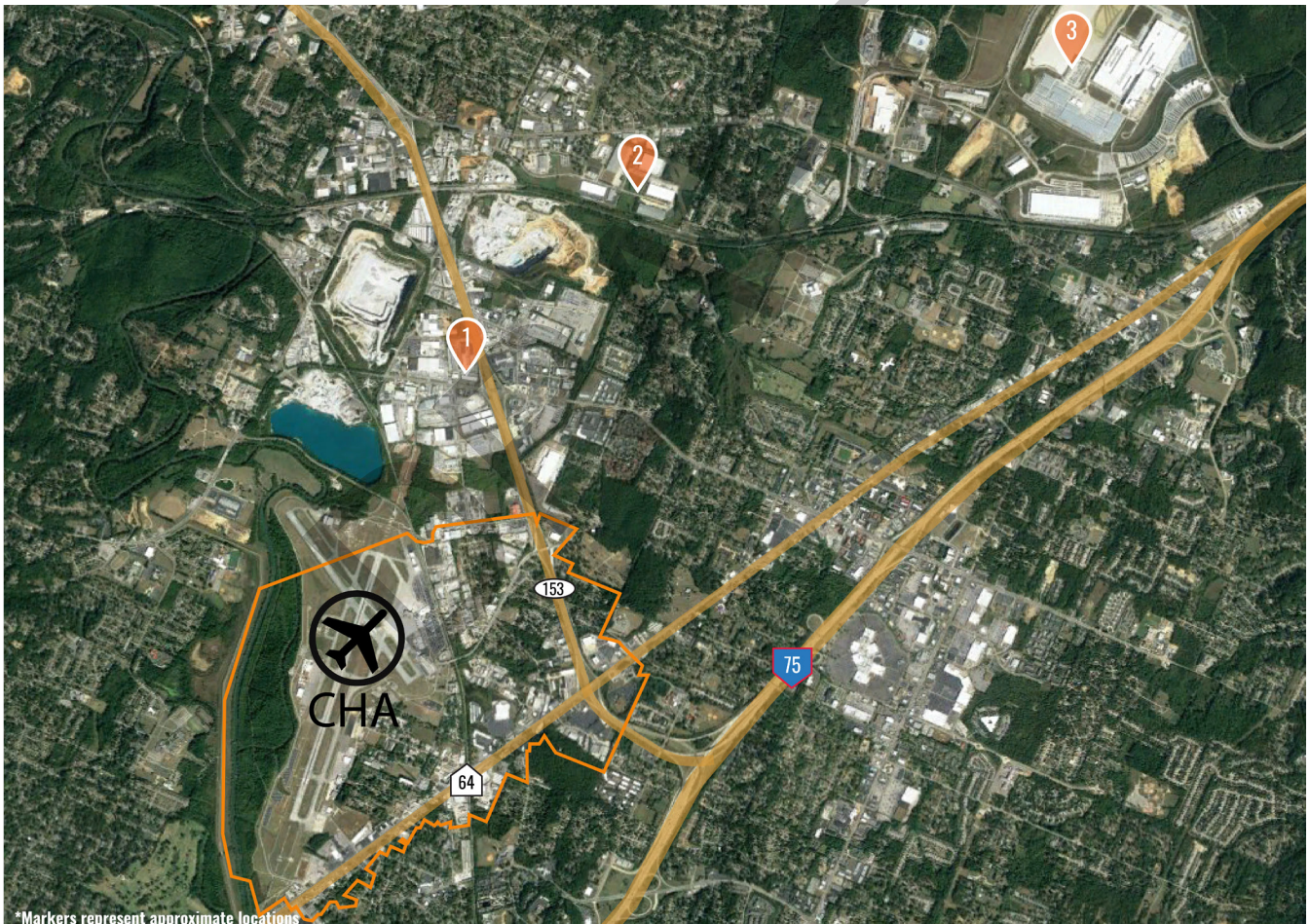


FIGURE 5-11 MAP OF INDUSTRIAL COMPETITIVE INVENTORY

#	Development Name	Format	Square Footage (Approx)	Age (Approx)
1	Shallowford Business Park West	Light Industrial / Warehouse / Flex	250,000	N/A
2	Bonny Oaks Industrial & Office Park	Light Industrial/Distribution/Flex	1,902,000	32
3	Enterprise South Industrial Park	Manufacturing/Distribution/Flex	261,360,000	15

INDUSTRIAL DEMAND ANALYSIS

The demand for new industrial space in the Airport District was projected out over a 20-year forecast horizon. Accordingly, the entire Chattanooga metro area is expected to grow its industrial inventory by 20,740,152 SF over the next 20-years.

Using a competitive market share analysis, it is expected the Airport District will support between 482,000 SF and 803,000 SF of light industrial/flex development by the year 2040. In the short term, the market is anticipated to absorb between 258,000 SF and 430,000 SF over the next 10 years.

Subject Site Development Program & Land Requirements (Cumulative)					
Scenario	2020	2025	2030	2035	2040
Conservative					
Gross Bldg Area (SF)	25,000	143,000	258,000	370,000	482,000
Net Developable Area (Acres)	1	8	15	21	28
Moderate					
Gross Bldg Area (SF)	33,000	191,000	344,000	493,000	642,000
Net Developable Area (Acres)	2	11	20	28	37
Aggressive					
Gross Bldg Area (SF)	41,000	239,000	430,000	616,000	803,000
Net Developable Area (Acres)	2	14	25	35	46

FIGURE 5-12 SUMMARY OF 20-YEAR FORECASTED DEMAND FOR INDUSTRIAL



INDUSTRIAL MARKET - KEY TAKEAWAYS

The industrial market has been strong due to the growth in the automotive manufacturing, transportation & warehousing sectors and food and beverage production economic sectors.

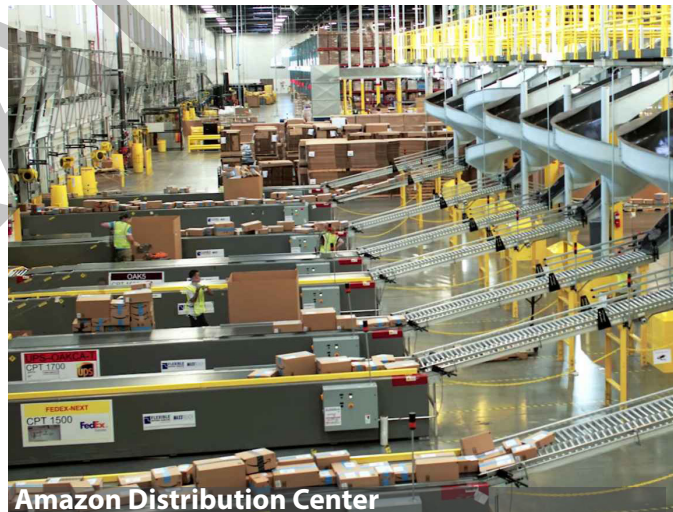
City-wide industrial development has been constrained over the past few years given lack of suitable industrial parcels to support new development. Growth in rental rates coupled with falling vacancy rates and cap rates present favorable conditions for redevelopment of obsolete industrial properties.

Across North America, demand has notably shifted toward industrial flex space in response to the challenges of rising industrial rents and tight vacancy rate due to the inherent flexibility of its use. There is not a strong presence of flex industrial space in Chattanooga, thus presenting an opportunity to target this development typology in the study area.

Assuming a moderate development scenario, it is projected that 344,000 SF of industrial space will be in demand in the study area by 2030, growing to 642,000 SF over the next twenty years.

5.2.4 RETAIL MARKET OVERVIEW

Chattanooga's retail market performance in 2018 has been strong. The city-wide vacancy rate climbed to 4.5 percent as of the third quarter of 2018 from 4.3 percent in 2017 but remains lower than historical rates. Average city-wide rental rates increased from the previous year, the PSF rose from \$11.90 in 2017 to \$13.59 YTD.





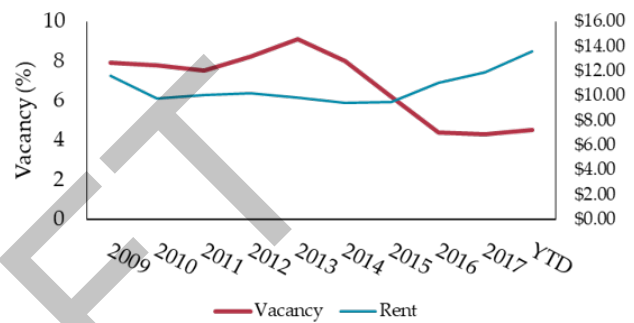
HAMILTON PLACE MALL

Net absorption was stable, with 59,383 SF of retail space absorbed and 108,343 SF of leasing activity. As of the third quarter of 2018 there were four retail deliveries totaling 98,615 SF, higher than the previous year. Furthermore, 16,772 SF of retail space has been under construction in the City of Chattanooga.

According to NAI Charter, the City's strongest retail corridor along Gunbarrel Road, as well as the East Brainerd submarket continues to be an attractive place for national retailers to enter the market. CBL Properties is planning the redevelopment of the Sears property at Hamilton Place Mall into a dynamic town center. This redevelopment is aligned with the national movement moving away from large enclosed mall retail formats and towards mixed-use developments that offer a diverse, pedestrian-oriented experience.

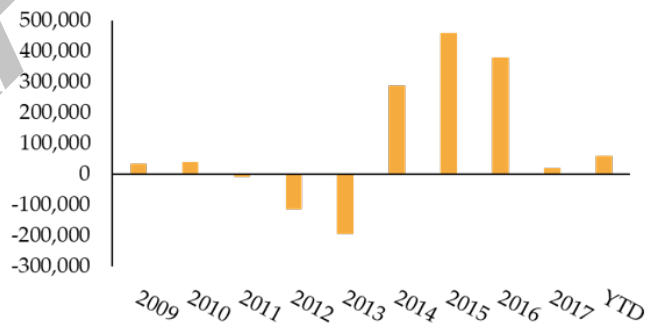
The proposed redevelopment has attracted interest from the Cheesecake Factory, one of the most successful and highly coveted restaurants in the country, which demonstrates that there is still high demand for retail in the area.

Chattanooga Retail Vacancy & Rent Trends



Data Source: Chattanooga Area Chamber of Commerce

Net Absorption SF Direct



Data Source: Chattanooga Area Chamber of Commerce

BY THE NUMBERS: RETAIL 2018

<p>21,361,576 SF TOTAL RETAIL INVENTORY</p> <p>4.5% VACANCY RATE</p>	<p>AVERAGE RENTAL RATE</p> <p>\$13.59 per square foot</p>	<p>TOTAL NET ABSORPTION</p> <p>59,383 square feet</p>	<p>UNDER CONSTRUCTION</p> <p>2 Buildings 16,772 square feet</p>
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RETAIL SUPPLY ANALYSIS

Competitive retail supply is concentrated along the I-75 and Lee Highway, due to the high degree of accessibility and visibility (Figure 5-13).

The two most notable retail developments are Hamilton Place Mall and Hamilton Village, which comprise 1.5 million SF and 429,325 SF respectively.

The primary retail formats surrounding the study area include Big Box Retail, Power Centers and Strip Retail Centers. Not surprisingly, these retail developments are surrounded by large surface parking lots which make them predominantly auto oriented.

The only significant anchor retailer in the study area is Sam's Club. The area is under served by grocery stores and fresh food options as the majority of restaurants in the study area are fast food chains.

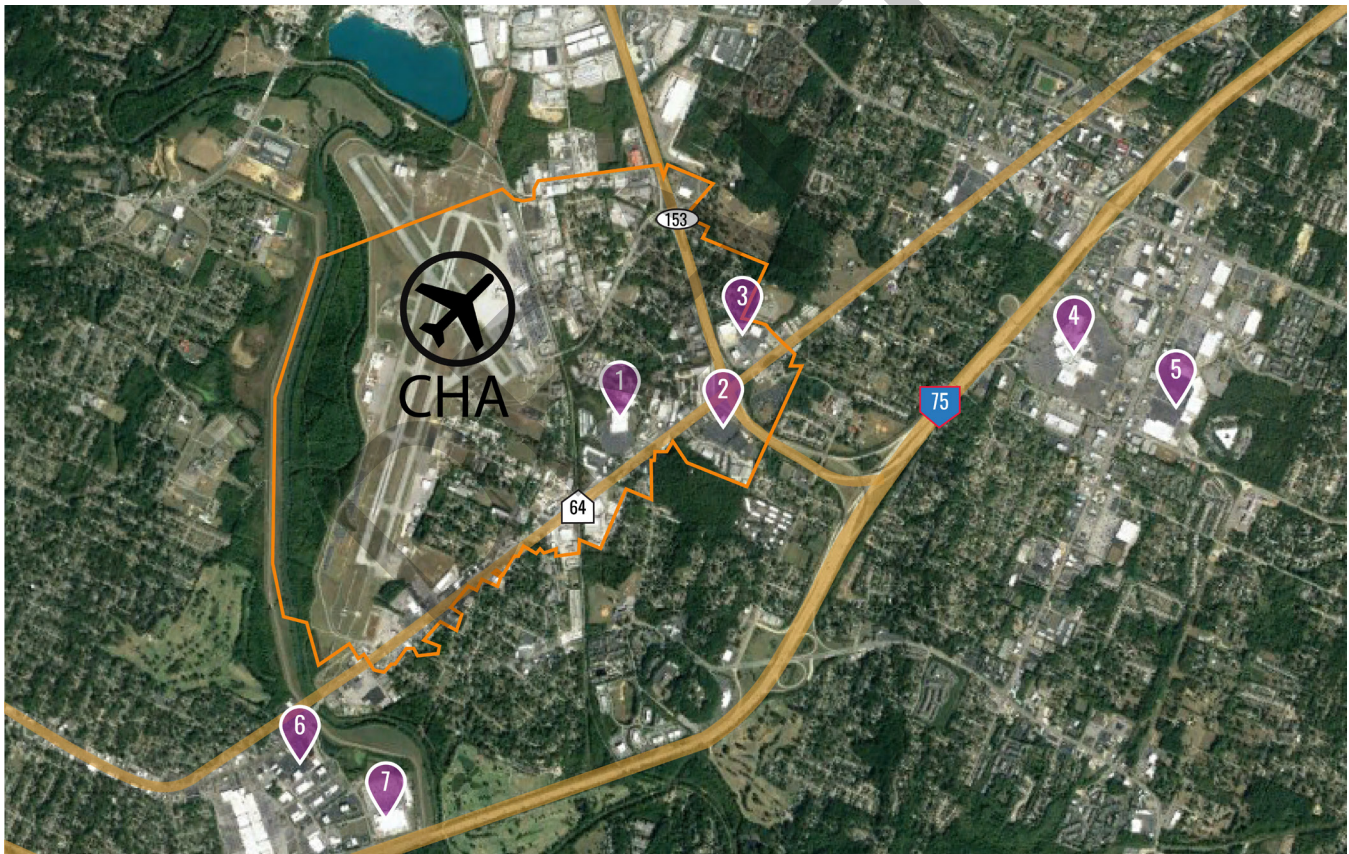


FIGURE 5-13 MAP OF RETAIL COMPETITIVE INVENTORY

#	Development Name	Format	Square Footage (Approx)	Anchors
1	Chattanooga Sam's Club	Big Box Retail	130,000	
2	Perimeter Place	Strip Plaza	157,685	Sportsman's Warehouse, Planet Fitness, Kumon Math & Reading Center
3	Lee Pointe	Strip Plaza	125,186	Subway
4	Hamilton Place	Power Center	1.5 million	Academy Sports, TJ Maxx, Old Navy, DSW Shoes, P.F. Chang's, Dillards, Belk
5	Hamilton Village	Power Center	429,325	Walmart, Dick's
6	Brainerd Village Shopping Center	Strip Plaza	222,000	Conn's HomePlus, Badcock Home Furniture Store, Woodcraft
7	Walmart Supercenter	Big Box Retail	210,000	

RETAIL DEMAND ANALYSIS

The metro Chattanooga region is expected to add 9,520,891 SF of new retail space over the next 20 years.

space will be absorbed in the Airport District in the next 10 years. Looking forward to 2040, it is expected that between 223,000 SF and 371,000 SF of new retail development can be supported in the Airport District.

The competitive market share analysis projects between 120,000 SF and 200,000 SF of new retail

Subject Site Development Program & Land Requirements (Cumulative)					
Scenario	2020	2025	2030	2035	2040
Conservative					
Gross Bldg Area (SF)	11,000	67,000	120,000	172,000	223,000
Net Developable Area (Acres)	1	4	8	11	15
Moderate					
Gross Bldg Area (SF)	15,000	89,000	160,000	229,000	297,000
Net Developable Area (Acres)	1	6	10	15	19
Aggressive					
Gross Bldg Area (SF)	19,000	111,000	200,000	286,000	371,000
Net Developable Area (Acres)	1	7	13	19	24

FIGURE 5-14 SUMMARY OF 20-YEAR FORECASTED DEMAND FOR RETAIL



RETAIL MARKET-KEY TAKEAWAYS

The area surrounding the study area is saturated with power centers and large retail formats, which serve as the primary shopping destinations for residents in the area. The study area is therefore not expected to attract any large retailers such as clothing or jewelry tenants.

There are limited amenities such as grocery, F&B, health and wellness in study area.

While there is minimal residential development occurring in the study area to support new retail, there is a notable gap in the supply of certain retail categories that makes new development feasible.

Accordingly, demand for an approximate 160,000 SF of retail space is forecasted for the next 10 years, growing to 297,000 SF over the next 20 years.





EMBASSY SUITES CHATTANOOGA HAMILTON PLACE

5.2.5 HOTEL MARKET OVERVIEW

The hotel market in Hamilton County is performing well due to the growing tourism industry.

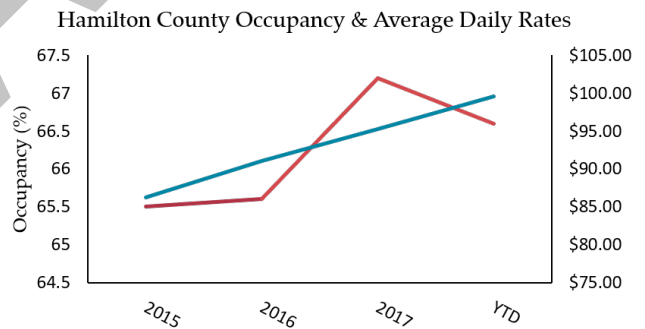
In 2017, the Chattanooga area welcomed 15.6 million visitors which generated \$1.2 billion in direct visitor spending, a 5 percent increase from 2016. Of the total visitor spending, \$204 million (17 percent) came from lodging.

Occupancy rates in Hamilton County have remained steady over a three-year period, indicating strong consumer demand for hotel accommodation.

As of Q3 2018, occupancy rates in the County averaged 67 percent, which is considered to be healthy rate to support further hotel development. The 2018 Q3 average daily rates (ADR) increased significantly in 2018, rising from \$95.28 to \$99.54.

The demand for hotel can be attributed to Chattanooga’s central location at the crossroads of three states, which makes it a strategic stop-over for travelers in the southwest U.S.

Hotel construction in Hamilton County has been strong in 2018. The current inventory of 100 hotels in the county will be supplemented by 16 hotels in the development pipeline that will deliver 1,509 hotel rooms. Of the 16 hotels in the pipeline, four are already under construction and 12 are in the planning phase.



Data Source: Chattanooga Area Convention & Visitors Bureau

BY THE NUMBERS: HOTEL 2018

<p>87 (8,540 keys) TOTAL HOTELS IN CHATTANOOGA</p> <p>66.6% OCCUPANCY RATE</p>	<p>AVERAGE DAILY RATE (ADR)</p> <p>\$99.54 (Hamilton County)</p>	<p>TOTAL HOTELS IN PIPELINE: 12 (1,217 keys)</p> <p>UNDER CONSTRUCTION: 4 (383 keys)</p> <p>IN PLANNING PHASE: 8 (834 keys)</p>
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HOTEL SUPPLY ANALYSIS

The supply of competitive hotel inventory is primarily characterized by a cluster of mid-range hotels (2 to 3 stars). The hotels are concentrated along the I-75 at Shallowford Road, due to the ease of access to the airport and the Enterprise South Industrial Park.

Extended Stay America and InTown Suites Extended Stay are two-star hotels located within the study area. Both hotels have excellent visibility from the highway, with Extended Stay along Highway-153 and InTown Suites along Lee Highway.

These hotels provide affordable accommodation options for leisure and business travelers and offer amenities to support longer stays. Extended Stay America and InTown Suites Extended Stay are the only hotels located in the study area, which presents an opportunity for more hotel development in the future if market conditions are favorable.

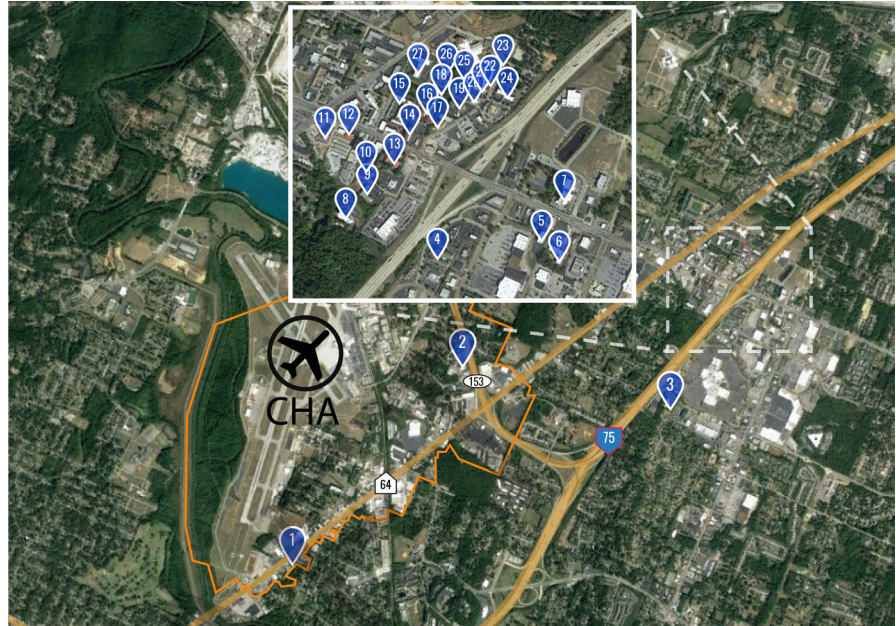


FIGURE 5-15 MAP OF HOTEL COMPETITIVE INVENTORY

#	Development Name	Number of Rooms	Class (Stars)
1	Intown Suites Extended Stay America Chattanooga TN - Airport	133	2
2	Extended Stay America Chattanooga - Airport	120	2
3	Hampton Inn & Suites Chattanooga/Hamilton Place	134	3
4	Courtyard by Marriot Chattanooga at Hamilton Place	109	3
5	Wingate by Wyndham Chattanooga	82	3
6	Studio 6 Near Hamilton Place Mall & WW Plant and Amazon	68	3
7	Embassy Suites by Hilton Chattanooga Hamilton Place	203	3
8	Holiday Inn Chattanooga - Hamilton Place	138	3
9	MainStay Suites	77	3
10	Homewood Suites by Hilton Chattanooga - Hamilton Place	76	3
11	Athena Inn Boutique Chattanooga	31	2
12	SureStay Plus Hotel by Best Western Chattanooga	35	2
13	Red Roof Inn Chattanooga Airport	109	2
14	Staybridge Suites Chattanooga - Hamilton Place	88	4
15	Quality Inn	93	2.5
16	Baymont by Wyndham Chattanooga - Hamilton Place	132	2.5
17	Comfort Inn & Suites	76	2.5
18	Microtel Inn and Suites by Wyndham Chattanooga/Near Hamilton Place	100	2
19	Hilton Garden Inn Chattanooga/Hamilton Place	112	4
20	Fairfield Inn and Suites by Marriot Chattanooga	108	2
21	Sleep Inn Chattanooga	57	2.5
22	Travelodge by Wyndgam Chattanooga/Hamilton Place	42	2
23	La Quinta Inn & Suites Chattanooga Hamilton Place	82	3
24	Days Inn by Wyndham Chattanooga/Hamilton Place	105	2
25	Super 8	51	2
26	TownPlace Suites by Marriot Chattanooga Near Hamilton Place	87	2
27	Residence Inn by Marriot Chattanooga Near Hamilton Place	109	3

HOTEL DEMAND ANALYSIS

Taking into account all the hotels in the pipeline as well as continued growth in visitors to the region, a projection was made of the number of new rooms required in the market. From this total a market share was assigned to the Airport District to determine how much of the new hotel development could reasonably be captured in this area.

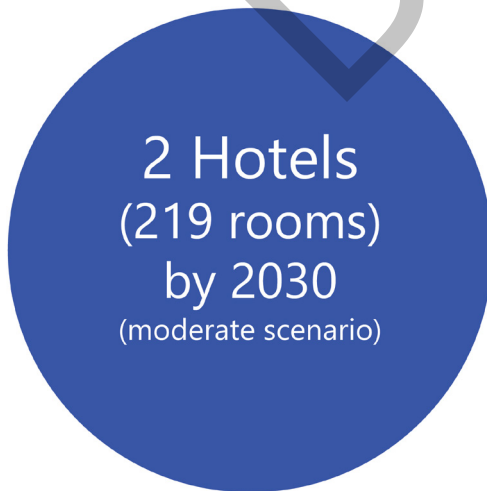
Based on this analysis, it is estimated that between 160 and 278 hotel rooms could be supported in 10 years. Over 20 years, between 437 and 796 rooms could be supported in the Airport District.

Project Supportable Keys					
	2020	2025	2030	2035	2040
Aggressive (20% Market Share)	-35	60	278	522	796
Moderate (15% Market Share)	-26	51	219	407	616
Conservative (10% Market Share)	-18	42	160	291	437

FIGURE 5-16 SUMMARY OF 20-YEAR FORECASTED DEMAND FOR HOTEL (KEYS)

Estimated Development Acres Required					
	2020	2025	2030	2035	2040
Aggressive (20% Market Share)	(0.6)	1.0	4.6	8.6	13.1
Moderate (15% Market Share)	(0.4)	0.8	3.6	6.7	10.1
Conservative (10% Market Share)	(0.3)	0.7	2.6	4.8	7.2

FIGURE 5-17 SUMMARY OF 20-YEAR FORECASTED DEMAND FOR HOTEL (ACRES)



HOTEL MARKET-KEY TAKEAWAYS

The hotel market surrounding the study area is saturated with mid-range 2 and 3 hotels.

The concentration of hotels in this area is attributed to the ease of access and high degree of visibility from the I-75 and their proximity to the retail, entertainment and F&B amenities at Hamilton Place Mall and Hamilton Village.

A Hotel within the Airport District would be supported by the overnight stays generated by the Airport Campus. Based on information provided by the CMAA, commercial flight crew occupy approximately 90 hotel rooms per night. Wilson Air Center and West Star customers book an estimated 25 Hotel rooms per night. These particular Hotel users generally prefer to stay in closer proximity to the Airport.

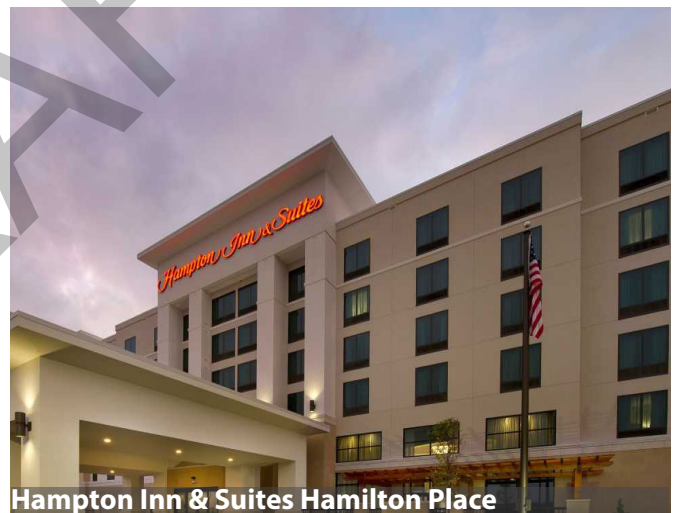
New hotel supply is in the development pipeline in Hamilton County as a result of the positive performance metrics but are all concentrated in the downtown area.

Current development activity projected to result in an oversupply of hotel that outpaces demand, leading to a decrease in occupancy rates. The market does not currently support new hotel development in the study area.

The market analysis indicates that demand for 219 keys within 2 hotel developments in the study area is expected to occur by 2030. Over a 20-year period, 616 hotel rooms are projected to be feasible in the study area.



The Edwin Hotel



Hampton Inn & Suites Hamilton Place



▶ THE VILLAGE AT APISON PIKE

5.2.6 MULTI-FAMILY RESIDENTIAL OVERVIEW

The residential rental market in Chattanooga has seen additional pressure in 2018 due to increased population and economic growth in the region.

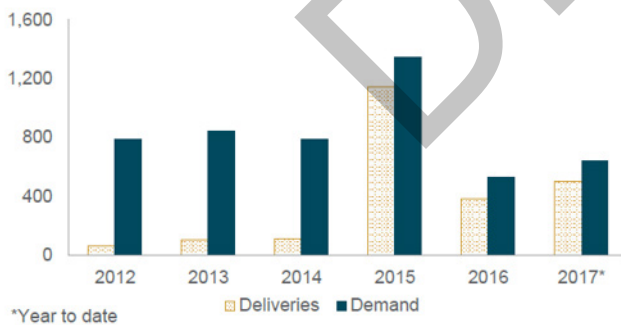
As people relocate to Chattanooga for employment at companies such as Volkswagen, Blue Cross, and FedEx, the residential market has been unable to keep up with demand.

Rental rates have risen more than 15 percent between 2017 and 2018, with the average rental for a 1-bedroom apartment now at \$760 per month. Including all multi-family product (townhomes, rowhomes, etc.) average asking rent is \$945 per month according to Berkadia.

The south submarket has the highest rental rates at \$1,006 per month for all multi-family product. Chattanooga was listed 9th in the “Top cities for apartment rates increases” in a Zumper survey of the United States 100 largest cities.

Between 2012 and 2017, demand has outpaced delivered multi-family product city-wide. The rental vacancy rate as of Q3 2017 was 4.7 percent, and Chattanooga has not experienced a vacancy rate of higher than 6 percent since 2013. Due to increased demand, affordability in the residential rental market has been challenging.

SUPPLY AND DEMAND OF MULTI-FAMILY RESIDENTIAL UNITS IN CHATTANOOGA (Q3 2017)



Source: Berkadia

BY THE NUMBERS: MULTI-FAMILY

501 units
TOTAL DELIVERIES (2017)

639 units
NET ABSORPTION (2017)

AVERAGE
EFFECTIVE RENT

\$945

VACANCY
RATE

4%

UNDER
CONSTRUCTION

1,600
units



▶ INTEGRA HILLS

MULTI-FAMILY RESIDENTIAL MARKET OVERVIEW

According to the Tennessee Housing Development Agency (THDA), almost 25 percent of renters are paying more than 50 percent of their income on housing. It is typical in North America that workforce housing is no more than 30 percent of income. While rents are lower than major cities such as Nashville and Atlanta, many residents are still struggling to find suitable accommodation based on their wages.

Multiple studies have been completed in the last few years demonstrating the need for thousands of new market-rate and affordable homes in the Chattanooga area. This includes the National Resource Network Team's report titled "Bridging the Gap: Affordable Housing and Workforce Development Strategies". The 2018 Housing Connections Conference also addressed the need for more workforce and affordable homes in the region.

The rising cost of construction coupled with increased land prices make building affordable homes a challenge for private developers.

Typical prices in East Brainerd and Ooltewah for new one-bedroom rental apartments are over \$1,000 a month and target middle class residents who desire luxury finishings and amenities. 2- and 3-bedroom apartments can range from \$1,300 to \$1,600 per month and are increasingly becoming in higher demand due to young families moving to Chattanooga for new jobs and the outdoor lifestyle.

The City has allocated \$1 million for workforce housing in 2018, however more funding is required from State and Federal governments to assist in funding sub-market rental housing.

Continued economic growth and population increases will generate further demand for rental housing over the next few years.

Recently built Multi-family rental projects around the study area include:

- Hawthorne at the Summit: A 849 SF 1-bedroom apartment rents for \$1,000 per month.
- The Village at Apison Pike: A 725 SF 1-bedroom apartment rents for \$1,000 per month.
- Integra Hills: A 735 SF 1-bedroom apartment rents for \$1050 per month.

MULTI-FAMILY RESIDENTIAL DEMAND ANALYSIS

A high-level Multi-family Residential Analysis was conducted to determine how many new multi-family units will be in demand in Hamilton County over the 2020 to 2040 forecast horizon as well the share of new demand that will be absorbed by the Airport District.

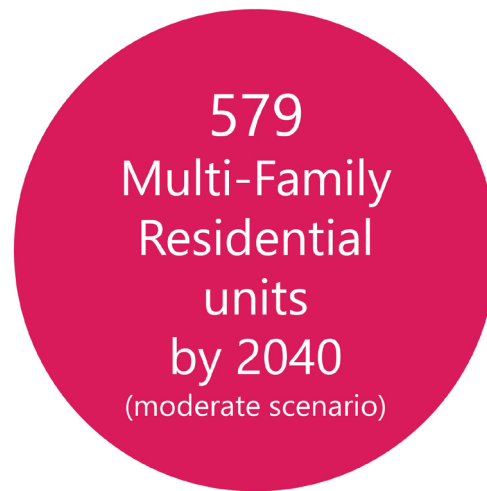
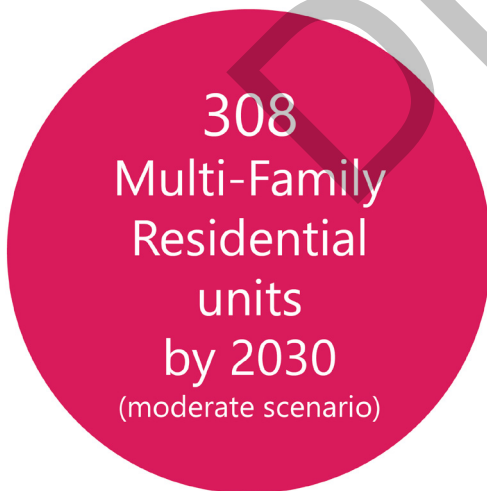
Based on population growth, average household size, and trends in average household size, it is projected that the number of households in Hamilton County

will grow by 24,187 over 20 years. Accordingly, demand for multi-family units in Hamilton County is expected to grow by 3,860 units over the 20-year period.

It is expected that between 205 and 411 units will be absorbed in the Airport District in 10 years and between 386 and 772 units over the 20-year period.

Cumulative MF Unit Absorption Forecast	2020	2025	2030	2035	2040
Conservative	20	116	205	294	386
Moderate	30	174	308	441	579
Aggressive	41	232	411	588	772

FIGURE 5-18 SUMMARY OF 20-YEAR FORECASTED DEMAND FOR MULTI-FAMILY RESIDENTIAL



5.2.7 MAJOR COMMERCIAL DEVELOPMENTS INTRODUCTION

This section highlights the most notable commercial development projects that are either proposed, planned or under construction in Chattanooga. While this is not an exhaustive list, it highlights the location and respective development mixes of competitive developments that are targeting similar uses and end user tenants as the Airport District.





GE/ALSTROM SITE

Urban Story Ventures in partnership with West End Property LLC is planning to redevelop 112-acres of land in Chattanooga's West End district which includes the former GE/Alstom turbine plant in addition to adjacent lands and industrial buildings. The Alstom manufacturing facility will remain intact in the proposed development as its connectivity to Interstate 27 coupled with its waterfront orientation and presence of specialized equipment make it the ideal site for future manufacturing activities. The lands adjacent to the site will be redeveloped into a mixed-use community inclusive of office space, restaurants and residential units and a unique distillery, brewery and winery that will all be housed in one facility. Full build out for the development is expected to take 10 years.



U.S. PIPE/WHELAND FOUNDRY SITE

The Lyndhurst Foundation funded a master plan study in 2008 to redevelop the 141-acre riverfront industrial property that formerly housed U.S. Pipe and Wheland Foundry facilities. The study envisioned the creation of a mixed-use community encompassing residential units, office and flex buildings and a retail and entertainment district. The owner, Perimeter Properties, agreed to contribute land to connect the site to the downtown River Walk. The South Broad Study was initiated by the Chattanooga Design Studio and concluded the adaptive reuse of historic foundry buildings that would catalyze the creation of a "gateway into the City" and spur further development in the area. The plan recommends improving the I-24 exit to offer better connectivity to the site. The recommendation coincides with TDOT's \$37 billion project that plans to build a new I-24 exit between the Wheland Foundry site and Tennessee River.



RIVERTON DEVELOPMENT

The Riverton Development Group, a local residential and commercial developer, bought a 210-acre tract of undeveloped land formerly owned by BlueCross BlueShield in North Chattanooga for \$8.1 million. The site, known as the Lupton City property, is located on Chattanooga's north shore and fronts onto the Tennessee River. Branded as the Riverton Development, the developer plans to create a mixed-use community that embodies "New Urbanism" design principles. The development will be inclusive of 400 residences and a 45,000 SF town village with restaurants, stores and medical offices. The project is expected to have a direct and indirect economic impact of \$225 million. While the project is still in the preliminary planning stages, it is expected to take five to seven years to complete after receiving approval from council.



HAMILTON PLACE SEARS REDEVELOPMENT

CBL Properties recently announced its plans to redevelop the Sears property at Hamilton Place Mall. The company acquired the site with the intention of redeveloping the department store footprint into a suburban town center to increase foot traffic to the Hamilton Place complex. The proposed redevelopment plans to include a 145-room boutique-style hotel, Class A office space, as well as restaurants and specialty retail. The Cheesecake Factory has been confirmed as an anchor tenant and the company recently announced the addition of Dave and Busters as a junior anchor tenant for the site. Project construction is expected to begin in early 2019.

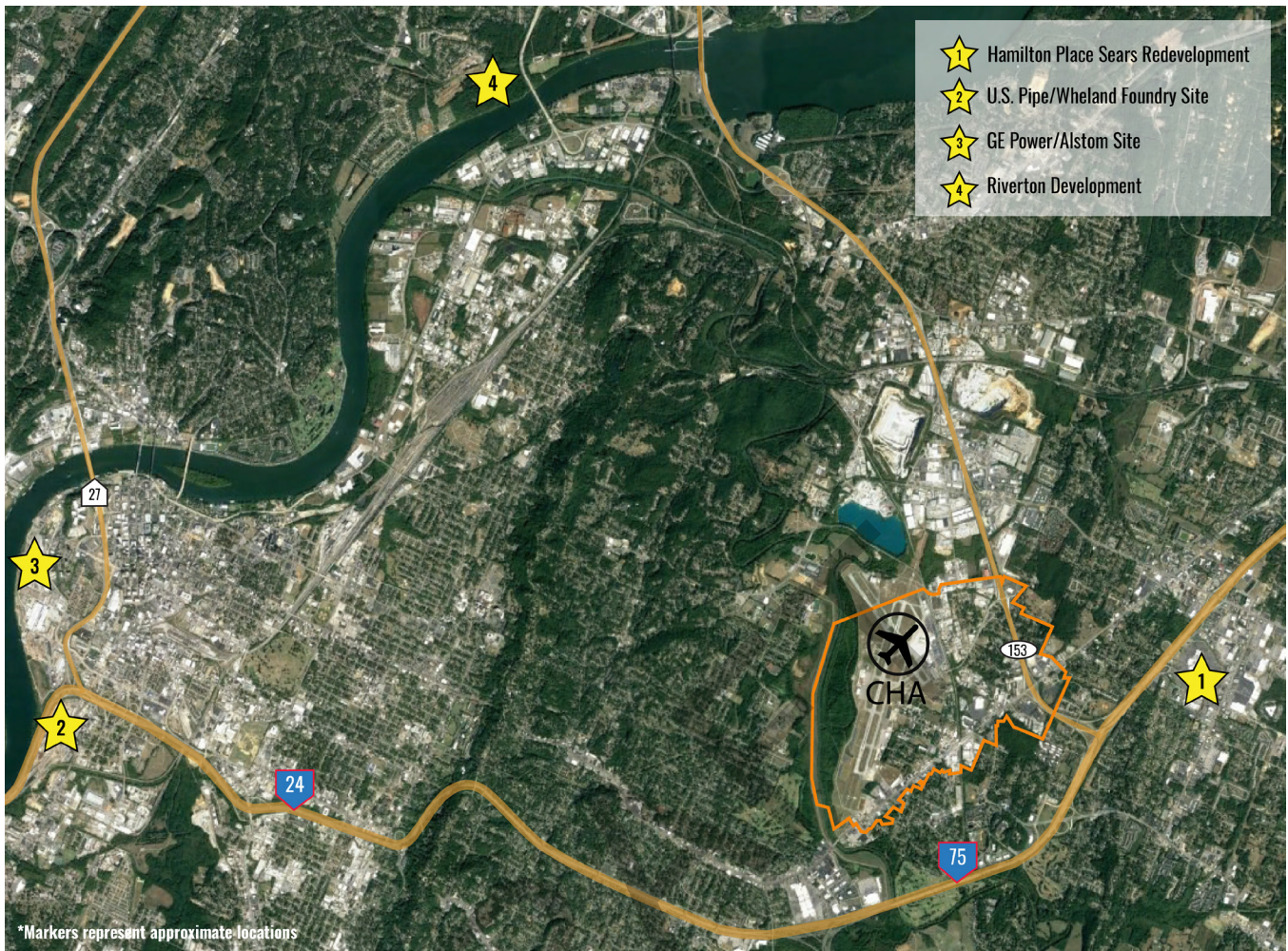


FIGURE 5-19 MAJOR COMMERCIAL DEVELOPMENTS IN CHATTANOOGA

MAJOR COMMERCIAL DEVELOPMENTS SUMMARY

Many of the planned development projects in Chattanooga are mixed and multi-use development formats that are anchored by office and/or flex space and residential units.

Almost all of these development plans include retail and F&B concepts into the development mix. As shown in Figure 5.19 most of the new development is occurring in proximity to the downtown area. A common theme amongst all of the projects is their connection to major transportation corridors.

The GE/Alstrom and U.S. Pipe/Wheland Foundry development sites are the most notable competitive projects given their proposed development mix and accessibility via the I-24.

AIRPORT DISTRICT MARKET ANALYSIS SUMMARY

The culmination of the economic and market analysis informed the demand forecast for the Airport District. These tables summarize the amount of new development that can be supported by the market over a 10- and 20-year time period.

The forecasted absorption accounts for “Low”, “Moderate” and “High” economic growth scenarios, however the “Moderate” scenario was used for land use allocation for the Airport District. This allocation informed the priority area and the catalytic site programming. Table 5-1 below illustrates the forecasted absorption for the Airport District by asset class over the next 10 years.

TABLE 5-1 AIRPORT DISTRICT RECOMMENDED DEVELOPMENT MIX (YEARS 1 THROUGH 10)

Land Use	Local Market Current Gross Building Area (GBA)	Local Market Projected 10-Yr Potential Absorption (GBA)	Airport District Study Area 10-Yr Potential Absorption LOW	Airport District Study Area 10-Yr Potential Absorption MODERATE	Airport District Study Area 10-Yr Potential Absorption HIGH
Office/ Business Park	37.7 m SF	3.8m SF	301,000 SF 20 AC	401,000 SF 26 AC	501,000 SF 33 AC
Accommodation	9,542 keys	1,182 keys	160 keys 79,279 SF 2.6 AC	219 keys 109,771 SF 3.6 AC	278 keys 140,263 SF 4.6 AC
Retail	49.5m SF	3.9m SF	120,000 SF 8 AC	160,000 SF 10 AC	200,000 SF 13 AC
Light Industrial/Flex	75.2m SF	10.3m SF	258,000 SF 15 AC	344,000 SF 20 AC	430,000 SF 25 AC
Multi-Family Residential	72781 units	2,053 units	205 units	308 units	411 units

AIRPORT DISTRICT MARKET ANALYSIS SUMMARY

The Airport District positioning and land use allocation also considers the amount of development that can be supported by the market in the long term.

Table 5-2 outlines the recommended development mix by asset class for the Airport District over a cumulative 20-year period.

TABLE 5-2 AIRPORT DISTRICT RECOMMENDED DEVELOPMENT MIX (20-YEAR CUMULATIVE)

Land Use	Local Market Current Gross Building Area (GBA)	Local Market Projected 20-Yr Potential Absorption (GBA)	Airport District Study Area 20-Yr Potential Absorption LOW	Airport District Study Area 20-Yr Potential Absorption MODERATE	Airport District Study Area 20-Yr Potential Absorption HIGH
Office/ Business Park	37.7m SF	7.3m SF	560,000 SF 37 AC	746,000 SF 49 AC	933,000 SF 61 AC
Accommodation	9,542 keys	3,591 keys	437 keys 219,542 SF 7.2 AC	616 keys 307,969 SF 10.1 AC	796 keys 399,445 SF 13.1 AC
Retail	49.5m SF	7.5m SF	223,000 SF 15 AC	297,000 SF 19 AC	371,000 SF 24 AC
Light Industrial/Flex	75.2m SF	19.6m SF	482,000 SF 28 AC	642,000 SF 37 AC	803,000 SF 46 AC
Multi-Family Residential	72781 units	3,860 units	386 units	579 units	772 units

5.3 RECOMMENDATIONS AND POSITIONING INTRODUCTION

The following section outlines the recommended positioning for Office, Industrial, Retail, Hotel and Multi-family Residential asset classes at the Airport District. The culmination of the economic and market research and analysis have informed these recommendations. The positioning provides a foundation for the land use allocation for the three identified Priority Areas.

“NEW OFFICE PRODUCT SHOULD FOLLOW A MULTI-TENANT BUILDING FORMAT.”

OFFICE

The new office product should follow a multi-tenant building format as opposed to a single-user campus which typically require larger tracts of greenfield land for development.

Planned expansion of West Star Aviation’s operations presents opportunities for office development that supports administrative/back office activities.

Target sectors for new office product in the study area include the burgeoning aviation and aerospace sector, health services and healthcare systems, technology firms, and back office operations.

Suburban employment nodes are strengthened by the presence of F&B concepts, green space, retail, wellness facilities and transit/cycle path connectivity. It is recommended that new office product is developed in proximity to these types of amenities to better attract the highly skilled, educated workforce that is being cultivated by the region’s academic assets.





“SMALLER, MORE-EFFICIENT USES OF LIGHT INDUSTRIAL AND FLEX INDUSTRIAL SHOULD BE TARGETED.”

INDUSTRIAL

Limited supply of flex space exists in the current market. The market analysis indicates that there will be demand for industrial/flex product in the study area over the 10- and 20-year time periods.

Tenants in flex business parks and general light industrial typically occupy spaces of between 10,000 to 100,000 SF. The study area does not currently have any large, contiguous parcels of land to support large warehouse/distribution industrial typologies. The demand forecast suggests that smaller, more efficient uses of light industrial and flex industrial should be targeted.

There are opportunities within the study area for consolidation and redevelopment of larger, obsolete buildings into light industrial flex space that is conducive to a variety of target sectors and sub-sectors. These include warehousing and shipping, light assembly, manufacturing and testing, research and development, food processing and food

production. It should be noted that current land costs and construction costs limit the feasibility of redevelopment in the study area. If rents were to hit a higher price point, redevelopment could be explored in the future.

The study area’s proximity to key employers present an opportunity to partner with Chattanooga State and UTC to develop workforce development facilities that would require a flex industrial building typology. This facility would support education and hands-on skills training to incubate innovation and support economic growth.

Building on the strengths of the region’s Food and Beverage Production sector, partnerships with key academic institutions, local technology companies and food and beverage processing companies should be explored to develop a food processing incubator within the study.



“INNOVATIVE AND EXPERIENTIAL F&B CONCEPTS WILL HELP TO CULTIVATE A NEW IDENTITY FOR THE AIRPORT DISTRICT”



RETAIL

There is a saturation of aging strip centers, large retailers, and power centers in proximity to the study area. New retail development at Hamilton Place Mall is characterized by a town center format anchored by experiential F&B and entertainment concepts as well as hotel and office. The retail concepts in the study area will be positioned to support a smaller trade area to differentiate it from the destination retail positioning at Hamilton Place Mall.

While there is a forecasted demand for 160,000 SF of retail space over the 10-year horizon and 297,000 SF over the next 20 years, limited residential growth in the study area may be a hindrance to future retail growth in specific categories.

In response to prevailing national retail trends, new retail concepts in the study area should be positioned to cater to “experience-oriented” consumer preferences. Retail development should include a multi-use, pedestrian-oriented retail center anchored by a fresh food grocery store, coffee shops, independently owned retail concepts, and local restaurants.

The study area should also target a hybrid of retail and light industrial concepts such as a micro-brewery, distillery or a food incubator with a restaurant. Innovative and experiential F&B concepts will help to cultivate a “new identity” for the Airport District.

The study area will primarily target passengers traveling through the Airport, people living and working in the area, as well as commuters driving downtown via Lee Highway, a major arterial in the area.



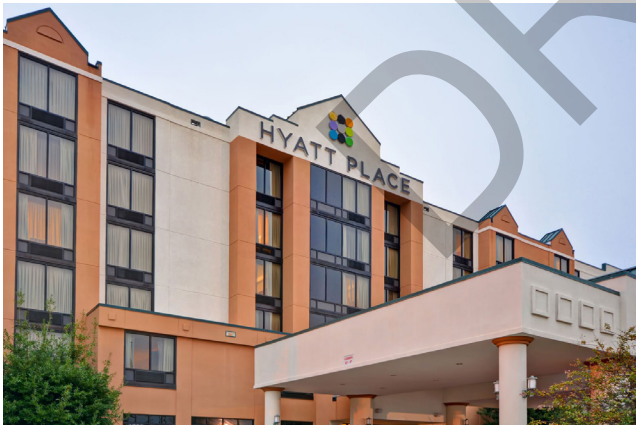
HOTEL

There is a large amount of hotel stock in the development pipeline that is projected to oversaturate the market in the next few years, resulting in a decrease in occupancy rates. Hotel development in the study area is currently not feasible but could be supported in the future if critical mass within study area increases.

The demand forecast indicates that 219 rooms within 2 hotels can be supported in 10-years, these hotels should vary in price-point. Over a 20- year period 616 hotel rooms can be supported; however the number of hotels will depend on the positioning. A typical limited service hotel has anywhere between 90 and 150 rooms which would mean up to five new hotels could be developed. Higher end hotels with over 200 rooms and a conference center may bring the number of new hotel developments closer to three over the 20-year period.

Development should begin with a modest 3-star hotel, such as a Hilton Garden Inn or Hyatt Place. If the study area market conditions improve, a higher caliber 4-story hotel could be supported.

Hotel development is also contingent on a high-degree of visibility and access from major highways or other thoroughfares as well as access to amenities such as restaurants and retail shopping. Accordingly, a hotel located on airport property is feasible in longer-term horizon (10-20 years), after the establishment of an off-airport hotel with high visibility to Lee Highway or Highway 153.



“HOTEL DEVELOPMENT IS ALSO CONTINGENT ON A HIGH-DEGREE OF VISIBILITY AND ACCESS.”





“WILL HELP TO SUPPORT EMPLOYMENT GROWTH IN SOME OF THE KEY COMPANIES AROUND THE STUDY AREA.”

MULTI-FAMILY RESIDENTIAL

Based on the market analysis and information gathered from the stakeholder consultation, it is recommended that new housing development in the study area encompass a mix of market-rate and workforce housing units.

Given the discrepancy between the supply and demand of housing in Chattanooga, particularly at an affordable price point, it is reasonable to expect that there is a demand of 308 units of multi-family housing by 2030 and will grow to 579 units by 2040. The development of affordable multi-family units in the study area will help to support employment growth in some of the key companies around the study area, such as Volkswagen.

It is recommended that new multi-family development in the study area encompass a mixture of rental and for-sale units. Multi-family development should encompass a diverse mix of residential typologies such as condominiums, apartments, multi-plexes and townhomes.

Due to the limited availability of greenfield land in the area, it may not be economically feasible to redevelop properties into workforce multi-family product in the short-term. Development of workforce housing could be viable with the support of public funding sources and incentives.



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DISTRICT



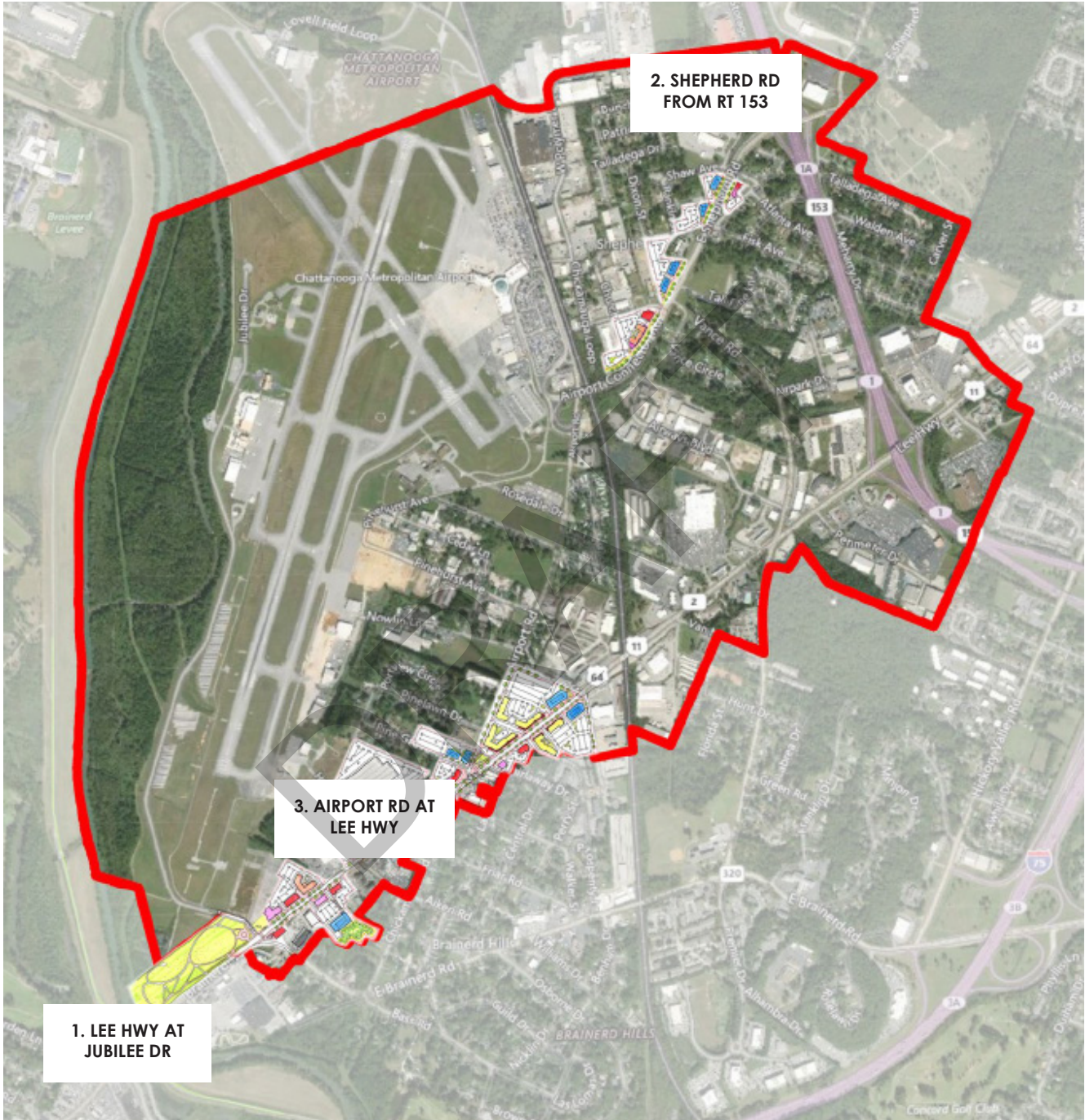


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6

PRIORITY DEVELOPMENT AREAS & CATALYTIC SITES

Outlines three target redevelopment areas within the Airport District to direct public and private investment. Within these priority areas, specific catalytic projects have been identified to enable redevelopment.



PRIORITY DEVELOPMENT AREAS

PRIORITY DEVELOPMENT AREAS/ CATALYTIC SITES

The Airport District Planning study area is a large, diverse area with conditions ranging from busy commercial corridors to quiet residential streets. Left unchecked, any market-driven reinvestment is likely to lack strategic direction which minimizes its impact. Instead, the City wants to identify strategic investments that can catalyze much broader change. The City wants to guide investment in the Airport District to capitalize on opportunities for transformative change that creates a destination and spurs further private investment. To do so, it is necessary to identify priority development areas in which to direct public and private investment. Setting a vision for these areas gives property owners confidence that conditions are changing for the better and encourages them to look for redevelopment opportunities that contribute to achieving the vision.

Public investment may include strategic projects to enhance the physical streetscape, address safety and lighting issues, or mitigate stormwater near catalyst sites. Private investment must follow the Brainerd Overlay requirements intended “to create a vibrant town center” along Brainerd Road, including bringing new buildings to the back of the sidewalk creating a more pedestrian-friendly streetscape, locating parking behind buildings and limiting the number and width of curb cuts.

Due to physical constraints of the existing Lee Highway right-of-way and the desire to create a more walkable environment, dedication of private frontage is required to create the street edge and bike/ped zones called for in the overlay. These zones are critical to improving the streetscape and creating the environment to support new private investment. The street edge zone provides an important physical buffer between cars and pedestrians. The bike/ped zone provides a safe, convenient, and inviting environment to encourage people to walk and bike.

Building Design:

- New buildings should be built to the back of the sidewalk. The ground floor should be primarily transparent glazing with at least one pedestrian entry to the building accessible from the sidewalk. Awnings may encroach over the bike/ped zone to provide shade and weather protection.

PRIORITY AREAS

1. LEE HWY @
JUBILEE DR
2. SHEPHERD RD
FROM RT 153
3. AIRPORT RD @
LEE HWY

- Dining and retail uses are encouraged to make use of the sidewalk with cafe seating and outdoor displays. These enliven the sidewalk and contribute to a growing sense of vitality in the area.
- Parking should be located behind the building. Curb cuts should be combined where possible and shared access between adjacent parcels should be provided to minimize short trips to Lee Highway.

PRIORITY AREAS

Three priority development areas (PDAs) were identified through analysis, stakeholder discussions, and public input. These PDAs are described in more detail in the following pages:

1. Jubilee Crossing
2. Chickamauga Triangle
3. Lovell Field Gateway

Criteria for selecting these PDAs included:

- **Aggregate land area:** Larger contiguous areas are better for creating critical mass.
- **Site conditions:** Aging and underused sites are prime candidates for redevelopment.
- **Ownership:** Common ownership among multiple parcels is best; more owners typically adds complexity to the land consolidation and development process.
- **Visibility along major corridors:** Lee Highway and Shepherd Road provide the highest visibility to demonstrate positive change.
- **Potential to spur economic development:** Job growth opportunity.
- **Potential to spur residential development:** Increase housing choices.
- **Potential to improve the public realm:** Opportunities for public investment in streets and sidewalks that can incentivize private redevelopment.

JUBILEE CROSSING

OVERVIEW

Jubilee Crossing is the western gateway to the Airport District, the first impression coming from Midtown, the interface with the Chickamauga Creek Greenway, and the front door for Wilson Air Center clients. Currently the only indication of this location's significance is a gateway entrance sign to the Airport.

Redevelopment along Lee Highway will transform the appearance and function of this area. Several vacant or underused commercial sites are poised for new development once public investment in streetscapes, intersections, and green space takes the lead. The Airport owns several parcels that could host catalytic redevelopment as well. Underused land adjacent to the airside of FedEx facility creates an attractive opportunity to add jobs to the District.

The Lee Highway/E. Brainerd Road intersection is a high-crash location. The crash data at the intersection (provided by CDOT) is approaching the Critical Crash rate for similar intersections in the State. Geometry, signal, and pedestrian improvements should be made that reduce these crashes, provide safety improvements for those on foot and incentivize catalytic development in the area (see Section 2.2 - Transportation and Infrastructure Analysis). Simplifying it by closing the slip lane turning from E. Brainerd right onto Lee Highway will improve safety. The right of way may be retained for public use or abandoned to be combined with adjacent parcels to form larger developable lots.

The intersection improvement would tie into future streetscaping along the Jubilee Crossing Catalyst Site properties as they are redeveloped; many of which are already under Airport Authority ownership, making a continuous streetscape project easier to implement. The future catalyst site streetscape combined with approximately 1,400 linear feet of existing multi-use path, adjacent to Airways Park, would create a total of 2,500 linear feet of multi-use path along the Lee Highway corridor. This is a visually impactful location that helps set the tone for future development patterns within the Airport District.

COMPONENTS

PDA Size: 28 Acres

Hotel - 150 keys

Retail/Food & Beverage - 55,000 SF

Office - 25,000 SF

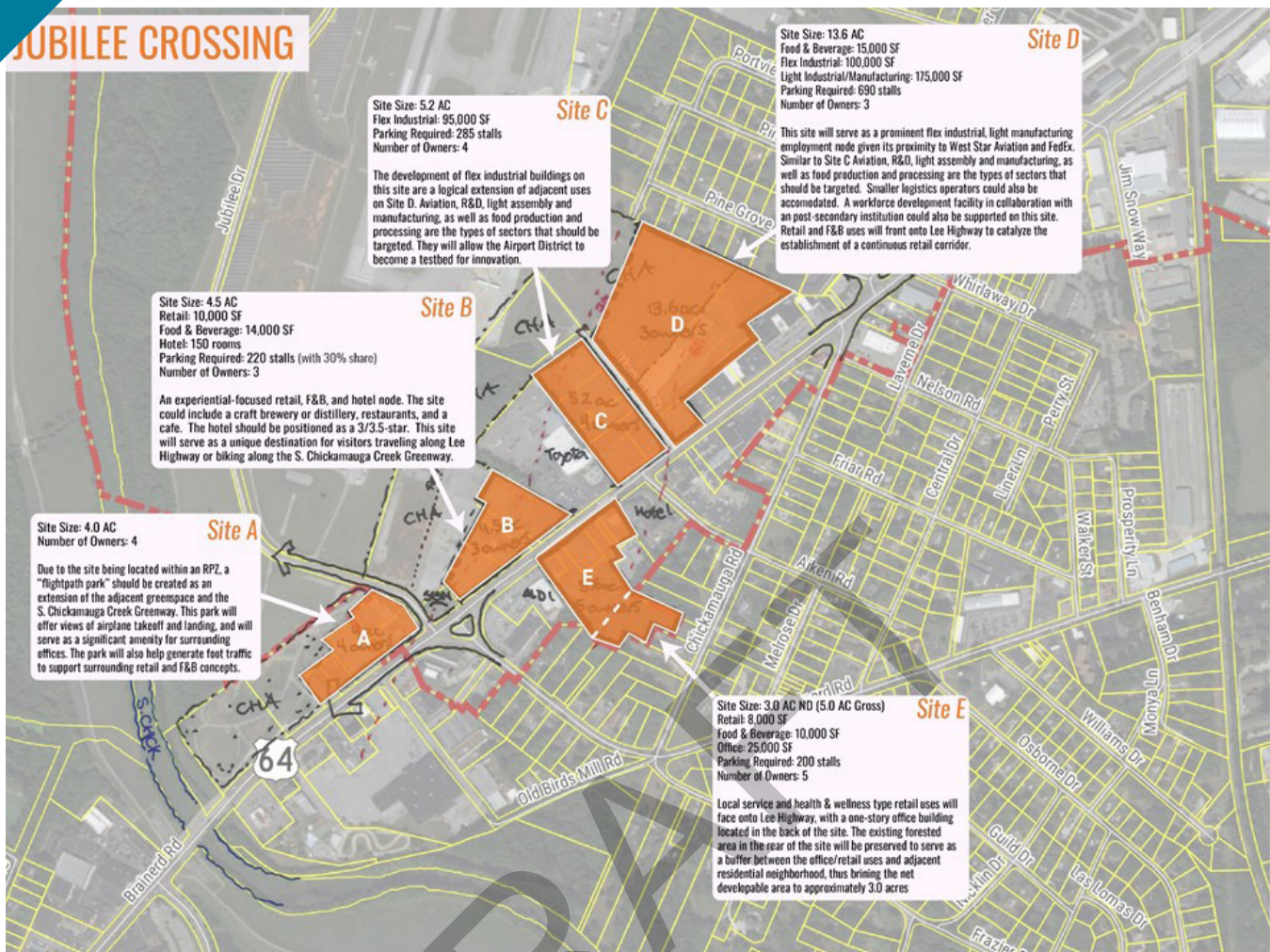
Flex Industrial -290,000 SF

See Appendix 3 for Priority Development Area Parcel Identification and Development Programming.



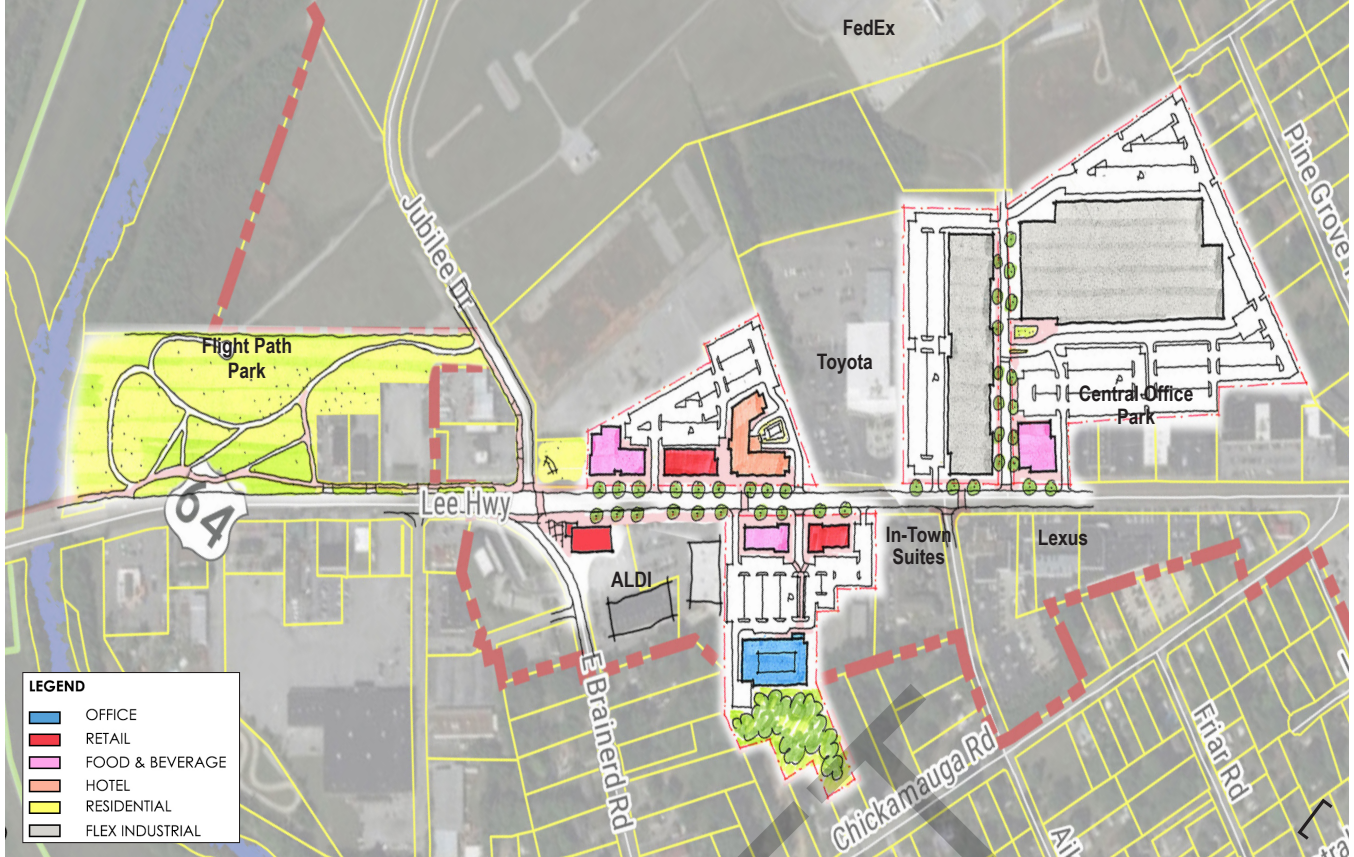
EXISTING CONDITIONS INCLUDE A DANGEROUS INTERSECTION AND VACANT OR UNDERUSED PROPERTIES THAT COULD BE GIVEN NEW LIFE.

JUBILEE CROSSING



KEY INVESTMENTS

- Improve connection between South Chickamauga Creek Greenway and Midtown/Airport District to draw visitors into the area. Near-term improvements may include signage and wayfinding and painting a striped buffer along the curb in the outside travel lane on Lee Highway. Longer-term improvements may include a widened sidewalk/multi-use path across the bridge to provide a more comfortable experience.
- Enhance Flight Path Park as an attractive gateway landscape and passive greenspace. This space should be better leveraged to provide a high-quality landscape that amenitizes nearby development.
- Improve Lee Highway streetscape to signal entry to the Airport District and encourage development. Options to explore include the addition of pedestrian-scale light standards, wayfinding or banner signage to create a distinct identity, and sidewalk widening and improvements can foster a more walkable environment.
- Close right fork of E. Brainerd Road at Lee Highway to simplify traffic operations and create infill development site.
- Create hotel opportunity adjacent to destination food-and-beverage and near private aviation clients at airport.
- Provide airport-related business opportunities along access to FedEx facility.



ILLUSTRATIVE PLAN FOR JUBILEE CROSSING

The following are precedent imagery for potential development in the Jubilee Crossing:



OFFICE TYPOLOGY



FLEX INDUSTRIAL TYPOLOGY



FOOD & BEVERAGE TYPOLOGY



HOTEL TYPOLOGY



MIXED USE SPACE WITH RETAIL AND FOOD & BEVERAGE TYPOLOGY



**VIEW OF POTENTIAL HOTEL AND MULTI-USE PATH LOOKING WEST TOWARD S. CHICKAMAUGA CREEK OVERPASS
NOTE: ARTIST RENDERING**

► CHICKAMAUGA TRIANGLE

OVERVIEW

Chickamauga Triangle is at the heart of the Airport District and the intersection of several neighborhoods. This intersection has the highest critical crash rate in the Airport District. It has the potential to build on existing neighborhood-serving uses to become a true village center amenity for existing and new residents. Creating a new urban form will be critical to the success of this site. New development should embody the best walkable mixed-use design principles, with pedestrian-friendly ground floor uses and design, a complementary mix of uses including residential and office, and high-quality building materials.

Assembling development parcels will be a key challenge here. The prominent triangle block has small parcels and multiple owners. However, a large catalytic redevelopment project is necessary here to establish a critical mass of activity, rather than relying on small individual projects.

The intersection of Lee Highway with Airport Road and Chickamauga Road is very wide and challenging to navigate. It is recommended to be re-designed as two T intersections. The Chickamauga Road approach has sufficiently low volumes to operate as an unsignalized stop intersection. The Airport Road approach would operate with a simpler signal phasing with left turns to Chickamauga removed.

COMPONENTS

PDA Size: 22.5 Acres

Retail/ Food & Beverage - 50,000 SF

Office - 200,000 SF

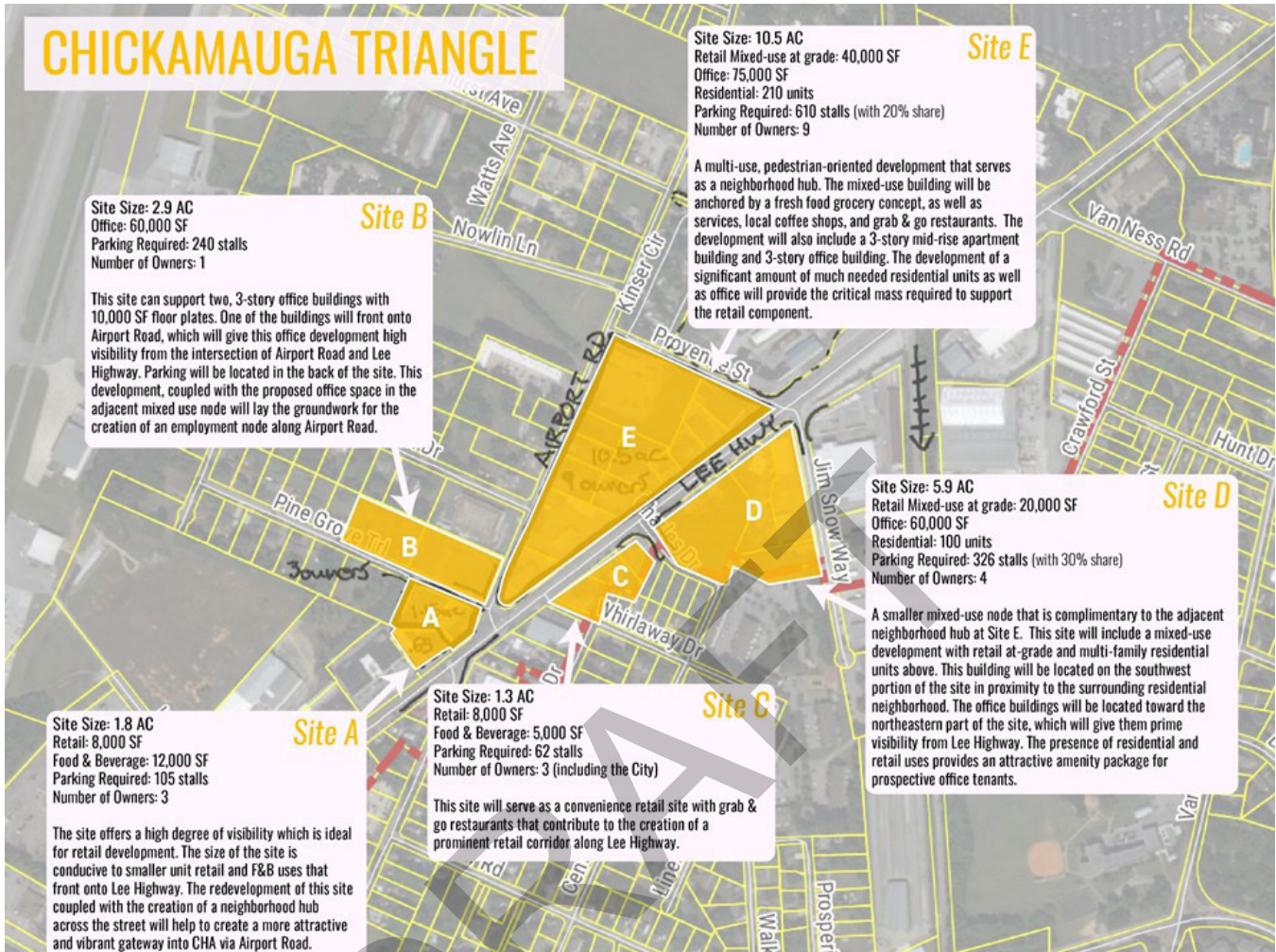
Residential - 310 units

See Appendix 3 for Priority Development Area Parcel Identification and Development Programming.



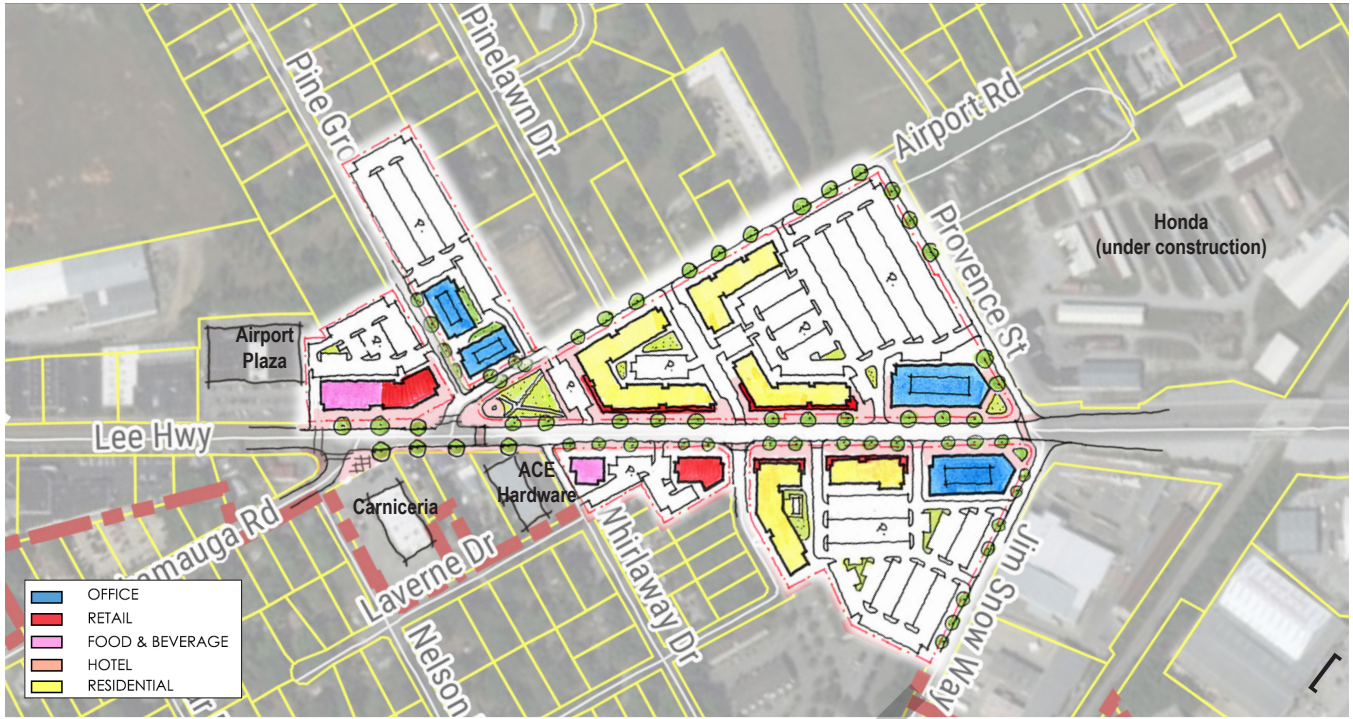
▲ **THE LEE HIGHWAY/AIRPORT ROAD INTERSECTION IS A CAR-DOMINATED EXPANSE THAT COULD BE TRANSFORMED INTO A VILLAGE CENTER.**

CHICKAMAUGA TRIANGLE



KEY INVESTMENTS

- Improve intersection to create safer space for cars, bus riders, pedestrians, and bicyclists. Realign the cross streets closer to 90-degree intersections with Lee Highway and install high visibility crosswalks and bus shelters (see Chapter 8 for more details).
- Re-align intersection to improve safety and sight lines, upgrade traffic signals and upgrade walking amenities, and shorten pedestrian crossings.
- Create gateway plaza/greenspace at realigned intersection to anchor neighborhood center and convey new character.
- Improve streetscape along Lee Highway to support catalytic redevelopment. Pedestrian-scale light standards with banner signage can create a distinct identity, while sidewalk widening and improvements can foster a more walkable environment.
- Facilitate transformative development opportunity by assembling land at northeast corner of intersection for walkable mixed-use development including housing for airport employees and others, new retail and dining options, and office space.
- Encourage additional mixed-use development opportunities to diversify housing stock.



ILLUSTRATIVE PLAN FOR CHICKAMAUGA TRIANGLE

The following are precedent imagery for potential development in the Chickamauga Triangle:



RETAIL TYPOLOGY



OFFICE TYPOLOGY



MIXED USE FOOD & BEVERAGE AND RESIDENTIAL TYPOLOGY



RESIDENTIAL TYPOLOGY

▶ **LOVELL FIELD GATEWAY**

OVERVIEW

Lovell Field Gateway is the primary gateway to the Airport and the first and last impression of the city for flyers. Rental car maintenance facilities, vacant lots, and a wide expanse of road greet these people today without any indication that the Airport is next door. It is critical for the growth of this study area and the city that the Lovell Field Gateway become a point of pride demonstrating hospitality, economic opportunity, and neighborhood integration.

Shepherd Road is a key focus of this study that has 80 feet of paved width and includes a hard shoulder, two travel lanes in each direction, and a continuous center turn lane. It is curbless and abutted immediately on both sides by a drainage ditch. The City has currently earmarked funds for upgrading the road which will include a multi-use path along the South side (using the existing shoulder), street trees and bike lanes. The upgrades for the roadway including design, bidding, and construction should be completed by summer of 2020. Daily vehicular volumes have steadily increased over the last ten years. Today the roadway carries approximately 13,000 - 15,000 vehicles daily. The Airport's recent Master Plan recommends consolidating rental car facilities which would make land available for redevelopment. These two actions will catalyze private redevelopment that will contribute to the success of this important gateway.

COMPONENTS

PDA Size: 10 Acres

Hotel - 140 keys

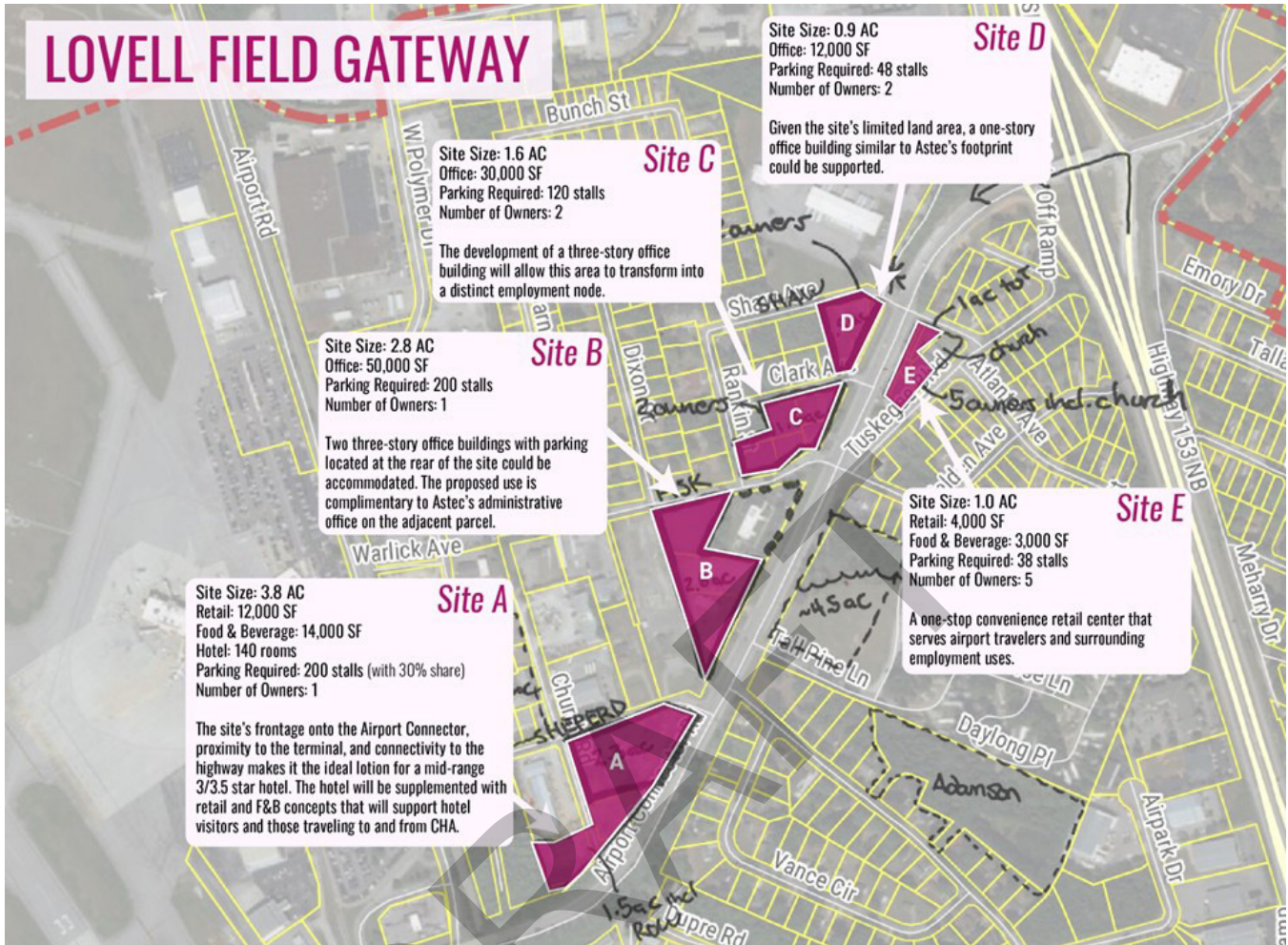
Retail/Food & Beverage - 15,000 SF

Office - 90,000 SF

See Appendix 3 for Priority Development Area Parcel Identification and Development Programming.

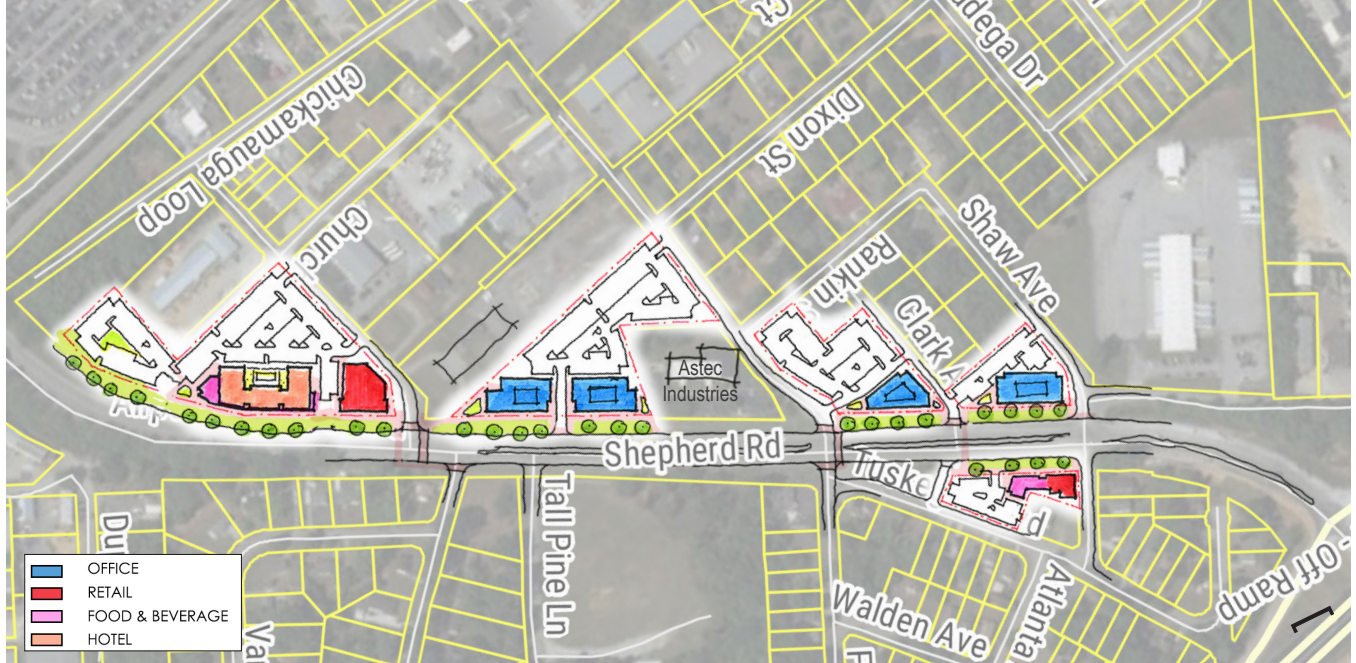


SHEPHERD ROAD TODAY IS TOO WIDE AND LACKS ANY INDICATION ABOUT APPROACHING THE AIRPORT. ITS VISIBILITY MAKES IT PRIME FOR HIGH-VISIBILITY OFFICE SPACE AND ITS PROXIMITY TO THE AIRPORT MAKES IT AN ATTRACTIVE HOTEL LOCATION.



KEY INVESTMENTS

- Improve streetscape and install banner signage, public art and wayfinding, and lighting opportunities for CHA airport to indicate gateway.
- Prioritize hotel opportunity adjacent to airport to meet needs of passengers and employees.
- Support high-visibility business opportunities along Shepherd Road.
- Consider converting center turn lane into planted median with left turn pockets to enhance visual appeal of airport entry.

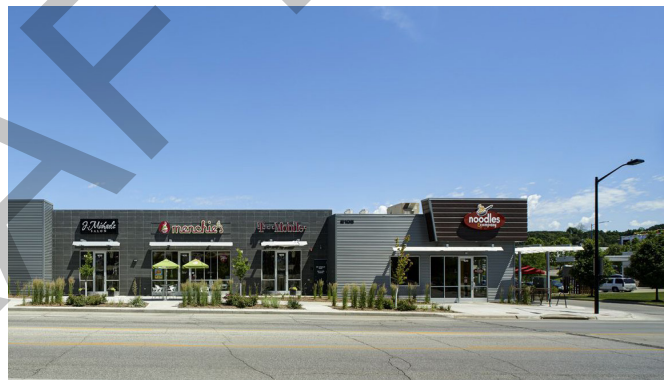


ILLUSTRATIVE PLAN FOR LOVELL FIELD GATEWAY

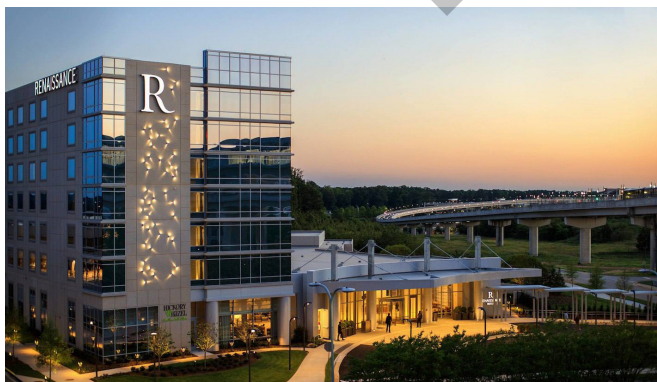
The following are precedent imagery for potential development in the Lovell Field Gateway:



FOOD & BEVERAGE TYPOLOGY



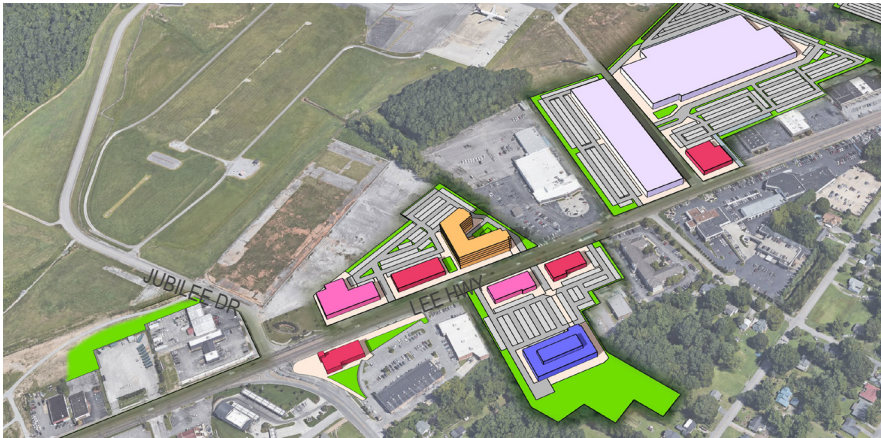
RETAIL TYPOLOGY



HOTEL TYPOLOGY



OFFICE TYPOLOGY



JUBILEE CROSSING

Lee Highway at Jubilee Drive transforms into a distinctive gateway for the Airport District, with unique food and beverage offerings to serve visitors at the hotel and those coming from the greenway.



CHICKAMAUGA TRIANGLE

Lee Highway at Airport Road evolves into a bustling village center with new housing choices, office space, and neighborhood-serving retail.



LOVELL FIELD GATEWAY

Shepherd Road becomes a true gateway experience for the airport, with a hotel and dining to support visitors and new office space demonstrating economic development.

CATALYTIC DEVELOPMENT PROJECTS

Catalytic development projects are highlighted in addition to the three priority areas and recommended infrastructure improvements. These catalytic projects are major developments that have the ability to activate the three priority areas that have been identified in this report. Catalytic projects

are the result of information gathered during the stakeholder focus groups sessions, community stakeholder meetings, market & economic analysis, and case study review. These projects seek to trigger redevelopment in the Airport District, enable economic growth, and change the perception of how residents and the development community view the area.

ATTRACT

Acts as an anchor to attract further economic development and investment

ACCELERATE

Accelerates real estate development in the district

ENABLE

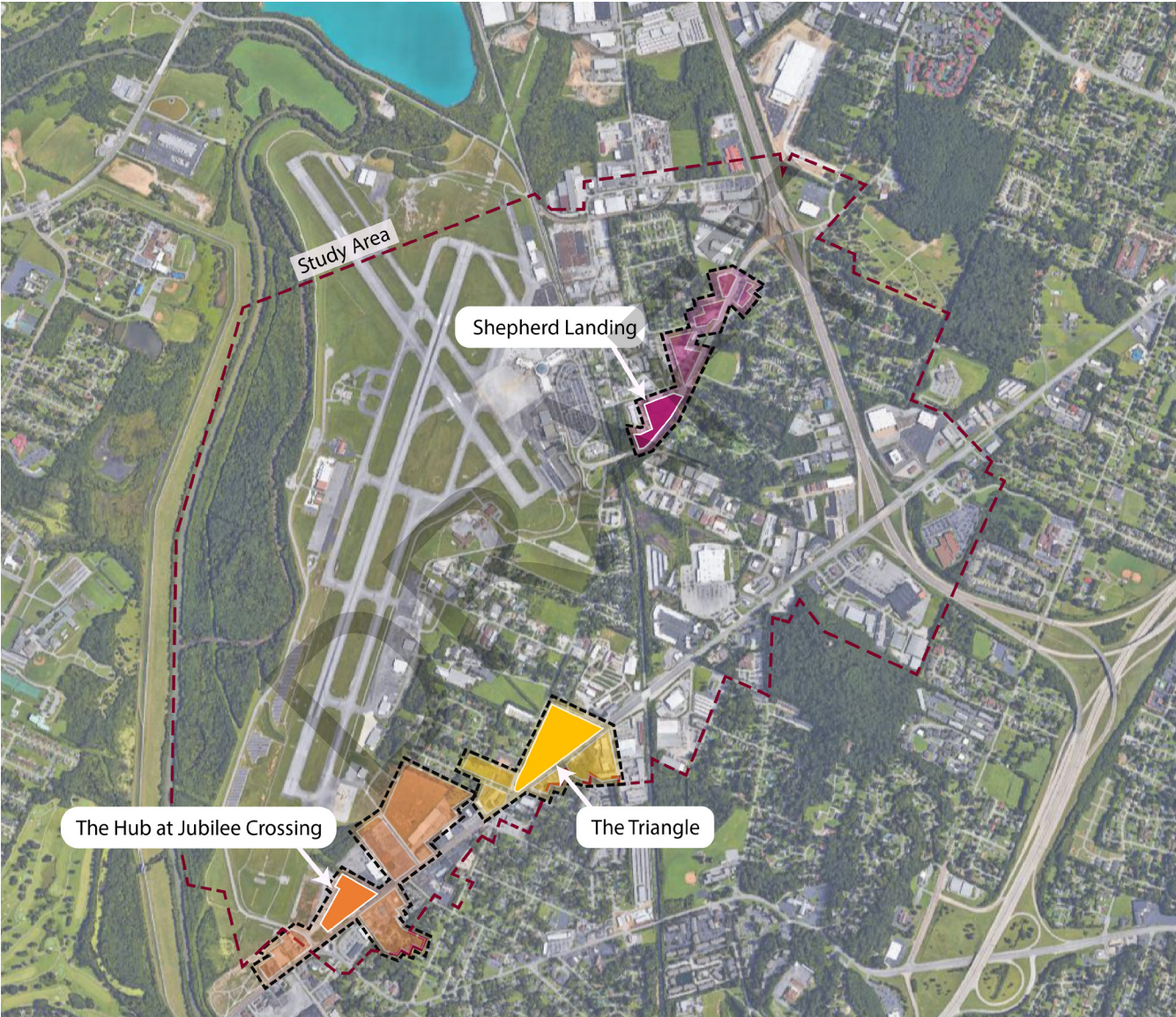
Enables emerging economic sectors and new development typologies

ENCOURAGE

Encourages a change of public perception for the district

MAP OF CATALYST SITES

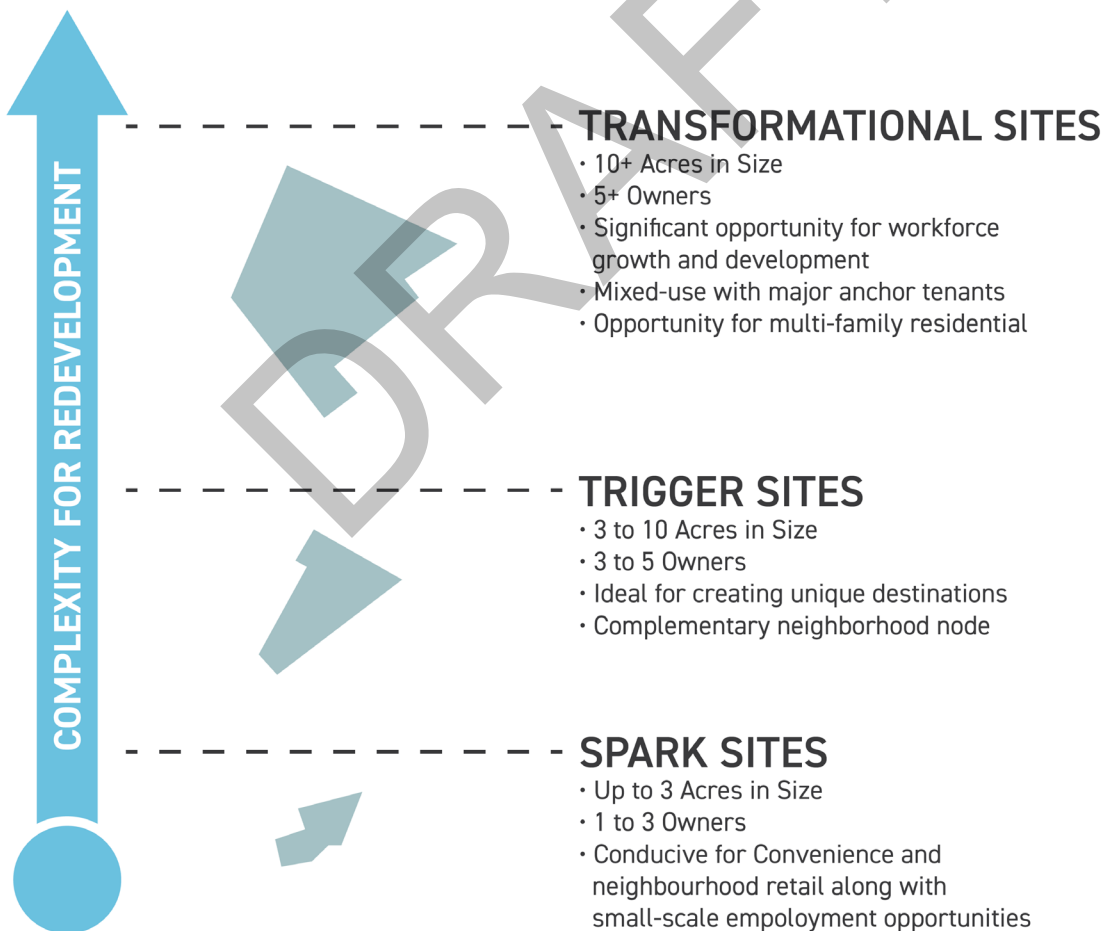
Each catalytic project has the ability to enable significant change in its respective priority area.



COMPLEXITY OF REDEVELOPMENT SITES

Redevelopment in the Airport District will require the area to adapt to changes in urban form, connectivity, land use functions, and general public perception. Turning underutilized and greyfield sites into vibrant multi and mixed-use communities requires buy-in from both the public and private sector. Redevelopment sites that are large in scale, require land assembly from numerous private owners, and have multiple planned land uses are more

challenging to initiate and implement, but the end-results can generate significant change for a neighborhood. While Transformational Sites may be more complex and will likely take longer to redevelop than Spark or Trigger Sites (as displayed in the diagram below), they allow the Airport, the City and area stakeholders to think differently on how the Airport District can function. This will ultimately lead to a District that is attractive from a live, work, stay, play perspective.





▶ HUB AT JUBILEE CROSSING

OVERVIEW

This catalytic project aims to become a culinary and hospitality destination for the western gateway of the Airport District and CHA. A multi-use development that incorporates a boutique-style hotel with restaurants and a craft brewery/distillery will generate excitement and activity to an underused area. Proximity to the Chickamauga Creek Greenway will draw pedestrians, runners, and cyclists to The Hub at Jubilee Crossing, to mix with local employees and residents.

The boutique-style hotel will provide much needed accommodation for the airport and major anchors such as Wilson Air Center and West Star Aviation.

WHY THIS WORKS FOR THE DISTRICT

- Western gateway to the district and CHA has limited visual appeal.
- Current lack of destination appeal along the Chickamauga Creek Greenway.
- The need for amenities and a future hotel.

OUTCOMES

- Creates a signature gateway development for the district and CHA.
- Attracts further redevelopment and investment on surrounding parcels along Lee Highway.
- Attracts new companies that may have not previously considered the area due to an interesting mix of culinary concepts.
- Destination for Greenway users.

COMPONENTS

Site Size: 4.5 Acres

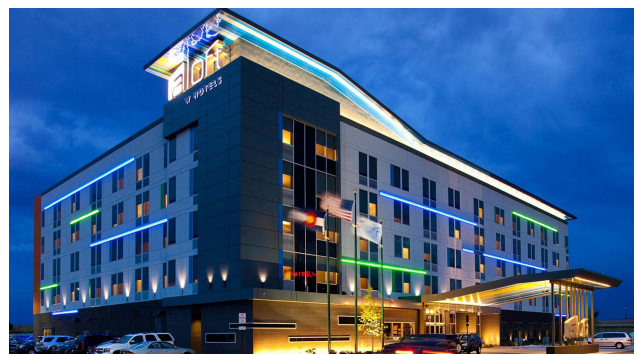
Retail - 10,000 SF

Food & Beverage 14,000 SF

Hotel - 150 Rooms

PRIORITY AREA ACTIVATION

Jubilee Crossing





▶ THE TRIANGLE

OVERVIEW

A multi-use pedestrian-oriented development that serves as the heart for the neighborhood. An iconic mixed-use building will be anchored by a fresh food grocery concept, as well as services, cafes, and grab 'n go food concepts. In addition to the mixed-use building, the development will also include mid-rise apartments and an office building.

The development of a significant amount of much needed residential units as well as office space will provide the critical mass required to support the retail component. Introducing high-quality multi-family product generates much needed workforce housing in the Airport District.

WHY THIS WORKS FOR THE DISTRICT

- Airport Road lacks a gateway development.
- Airport District requires placemaking that will stitch all local neighborhoods together.
- The need for transformational development at a critical transportation intersection.

OUTCOMES

- Introduces mixed and multi-use development to the Airport District.
- A gateway development for CHA that will trigger future redevelopment opportunities along Airport Road and Lee Highway.
- Densification of a current low-density area.
- Provides much needed multi-family housing.
- Creates a heart for the Airport District.
- Improved walkability and quality of life for residents without access to vehicles.

COMPONENTS

Site Size: 10.5 Acres

Retail Mixed-Use - 40,000 SF

Office - 75,000 SF

Multi-Family Residential - 210 Units

PRIORITY AREA ACTIVATION

Chickamauga Triangle





► SHEPHERD LANDING

OVERVIEW

Shepherd Landing will trigger transformation of the priority area into a proper primary gateway for CHA. The site's frontage onto Shepherd Road, proximity to the terminal, and connectivity to the highway makes it an ideal location for a mid-range 3 or 3.5-star hotel.

The hotel will be supplemented with retail and food & beverage concepts that will support hotel visitors and those traveling to and from CHA. Local residents living in the Shepherd community will be able to comfortably walk to the site for dining options and services.

WHY THIS WORKS FOR THE DISTRICT

- Currently no hotel in close proximity to the CHA airport terminal.
- The need to create a first and last gateway experience for people flying in and out of Chattanooga.

OUTCOMES

- Much needed airport-centric hotel.
- Creates new hospitality and commercial corridor.
- Improves the commercial attractiveness for the CHA gateway.
- Introduces an amenity package for future office tenants locating in the Lovell Field Gateway.

COMPONENTS

Site Size: 3.8 Acres

Retail - 12,000 SF
 Food & Beverage - 14,000 SF
 Hotel - 140 rooms

PRIORITY AREA ACTIVATION

Lovell Field Gateway



U.S. FOREST SERVICE

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7

LAND USE PLAN

Sets forth the overall Vision for the Chattanooga Airport District and designates the appropriate future land uses for the District.

MASTER PLAN

VISION

This Study is a product of a 10-month-long neighborhood-level visioning process where city officials and community leaders, residents, property owners, and others engaged in a series of conversations to consider practical approaches for building upon the assets of the Airport District and making it an even better place to live, work, play and visit.

This Study evaluates multiple real estate development sectors including retail, office, light industrial, hotel, and multi-family residential for redevelopment of parcels in the Airport District. It examines the potential for revitalization along important connective corridors including Lee Highway and Shepherd Road. The Study includes

an examination of specific parcel redevelopment potential, a retail/office market analysis and examines parcel development potential, resulting in an action plan that aims to boost economic activity and inclusivity in the Airport District and better connect it with the booming Chattanooga economy. It also examines other potential connective corridors including Shepherd Road.

The Vision for the Chattanooga Airport District Master Plan is creating “A Gateway for Chattanooga and a Connected Community”.

Improved Gateway Experience
of Shepherd and Airport Road

Redevelopment
of underutilized sites

Revitalization
of underperforming properties

New Amenity Package
with hotels, restaurants,
greenspace, and sidewalks

“A Gateway for
Chattanooga
and a Connected
Community”

VISION FOR THE AIRPORT DISTRICT



Economic Development Initiatives



Improved Walkability and Gathering Places



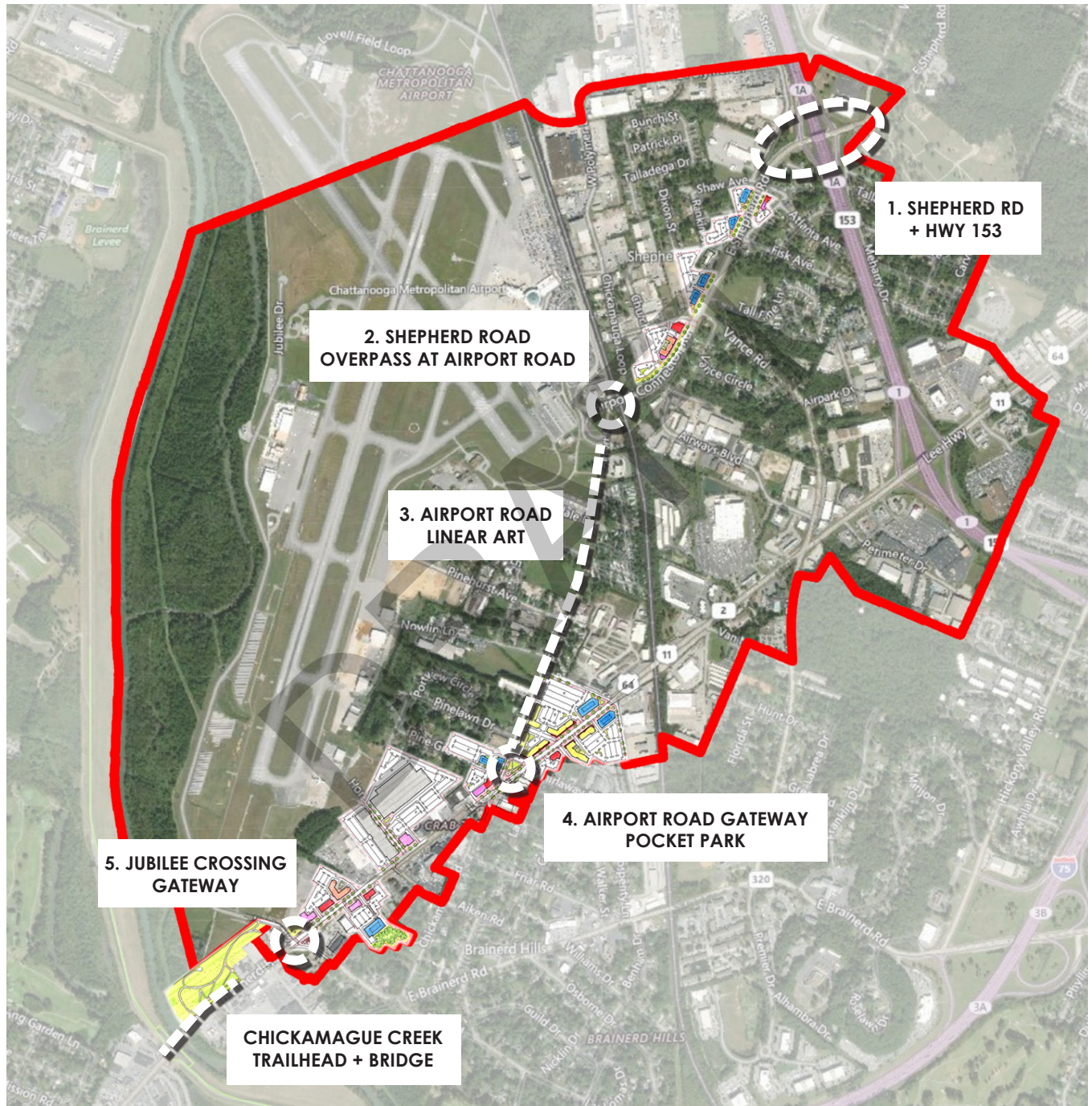
New Development such as Hotels



Improved amenity package for hotel travelers and the local community

A GATEWAY FOR CHATTANOOGA AND A CONNECTED COMMUNITY

PUBLIC ART OPPORTUNITIES



CHATTANOOGA AIRPORT MASTER PLAN PUBLIC ART OPPORTUNITIES

In February 2019, the City of Chattanooga adopted the “City of Chattanooga Public Art Strategic Plan”. This plan advances the City’s vision for an “equitable, authentic, and inclusive community” by recognizing the value that public art adds to the economy and community. The Plan serves as a guide for all artwork proposed for City property and the public realm in general. The following public art opportunities are recommended for the Catalytic projects within the three Priority Areas defined in this document:

1. Shepherd Road and Hwy153

Significance: The multi-use path on Shepherd road is an important pedestrian connection for the Shepherd community, previously divided by Highway 153. A wrapped bus shelter project has been implemented for the South side of West Shepherd Road on the East side of the interchange.

Opportunities: Fence installations and painted murals.



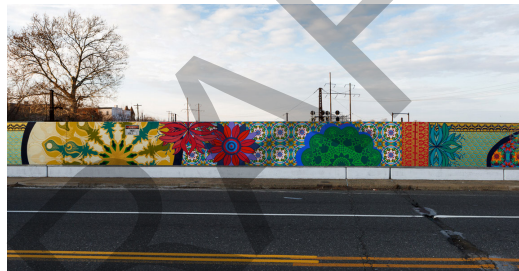
Shepherd Road Multi-use Path Over 153



Fencing Treatments



Fencing Treatment



Painted Murals



2. Shepherd Road Overpass and Airport Road

Significance: Front door of the Airport. Highly visible area from both Shepherd and Airport Road.

Opportunities: Sculpture, lighting and mural paintings.



Painted Murals



Sculpture



Lighting

3. Airport Road

Significance: A primary corridor to the Airport, infrastructure improvements are costly and time consuming. Needs short term strategies for building momentum for re-development in the area.

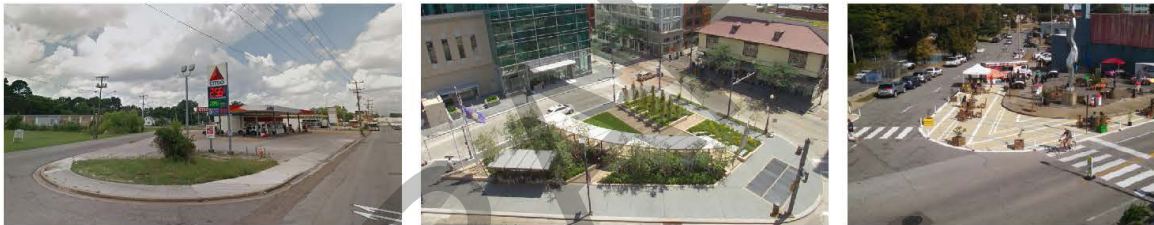
Opportunities: Temporary art installations in partnership with owners of underutilized or vacant private parcel.



4. Airport Road and Lee Highway Gateway

Significance: Important gateway to the Airport from Lee Highway.

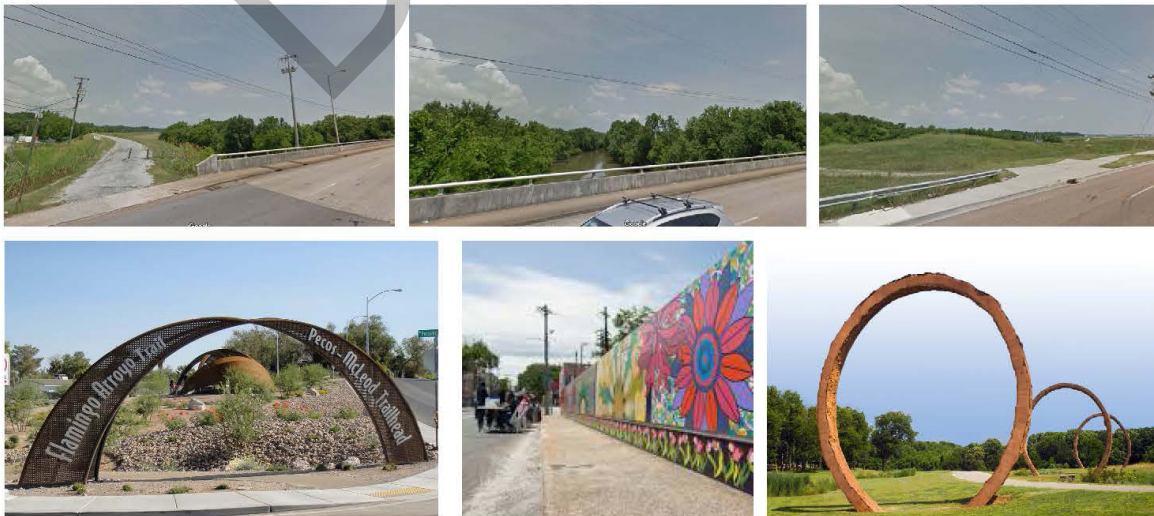
Opportunities: Pocket Park sculpture and installations, and facade improvements.



5. Jubilee Crossing

Significance: Primary Southern gateway into the Airport District.

Opportunities: Sculpture or installation to denote the entrance to S. Chickamauga Greenway, bridge treatments, fencing and bridge walls, art installations in Airways Park meeting FAA Guidelines.



AIRPORT DISTRICT LAND USE PLAN

AIRPORT DISTRICT LAND USE POLICY LANGUAGE

This Master Plan Study is further implemented by adopting new land use policies and goals for the Airport District. The proposed land use policy language identifies the three priority areas and defines the vision for each. In addition, the new language allocates new land use categories with their definitions and identifies their locational criteria.

AIRPORT DISTRICT PRIORITY AREAS

Jubilee Crossing

Lee Highway at Jubilee Drive transforms into a distinctive gateway for the Airport District with unique food and beverage offerings to serve visitors at the hotel and those coming from the greenway and retail uses. Additional green space, pedestrian oriented streetscape elements, 12' wide multi-use path, street trees, and intersection improvements are proposed.

Lovell Field Gateway

Shepherd Road becomes a true gateway experience for the airport by infilling underutilized lots with office space, some retail space and potential hotel and dining to support visitors demonstrating economic development.

Chickamauga Triangle

Lee Highway at Airport Road evolves into a bustling village center with multi-family residential building with ground floor retail and offices, and neighborhood serving retail.

LAND USE CATEGORIES

Locations: Lee Highway Corridor

Mixed Use Corridor (Yellow-Green)

Currently a mixture of offices, institutional uses, retail and restaurants are found along this corridor. Over time this plan supports a transition to multi-family residential of sufficient density to support transit. Retail uses should instead be clustered at the Jubilee Crossing catalytic site.

Light Industrial Mix (Blue Solid=Existing)

This area would predominantly include a variety of light industry, office, storage, and service businesses.

Locations: Shepherd Road

Single-Family Residential (Yellow)

These existing single-family neighborhoods should be protected from encroachment from higher intensity uses. Adjacent multi-family residential, office, retail, industrial or other higher intensity uses should provide landscaped buffers and/or transitions in building height to within one story of these existing single-family homes.

Light Industrial Mix (Blue Hatched=Transition too)

This area would predominantly include a variety of light industry, office, storage, and service businesses. Due to the adjacency of the Airport many of these businesses may be aviation related.

Multi-Family Residential (Orange Hatch = Transition too)

These areas may transition over time to moderate density residential uses that will support the district's commercial uses and transit service, as well as Airport-related job growth. Such redevelopment should occur as entire blocks rather than one parcel at a time.

Locations: Airport Road

Single-Family Residential (Yellow)

These existing single-family neighborhoods should be protected from encroachment from higher intensity uses. Adjacent multi-family residential, office, retail, industrial or other higher intensity uses should provide landscaped buffers and/or transitions in building height to within one story of these existing single-family homes.

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Multi-Family Residential (Orange Hatch = Transition too)

These areas may transition over time to moderate density residential uses that will support the district's commercial uses and transit service, as well as Airport-related job growth. Such redevelopment should occur as entire blocks rather than one parcel at a time.

Location: Highway 153 Interchanges

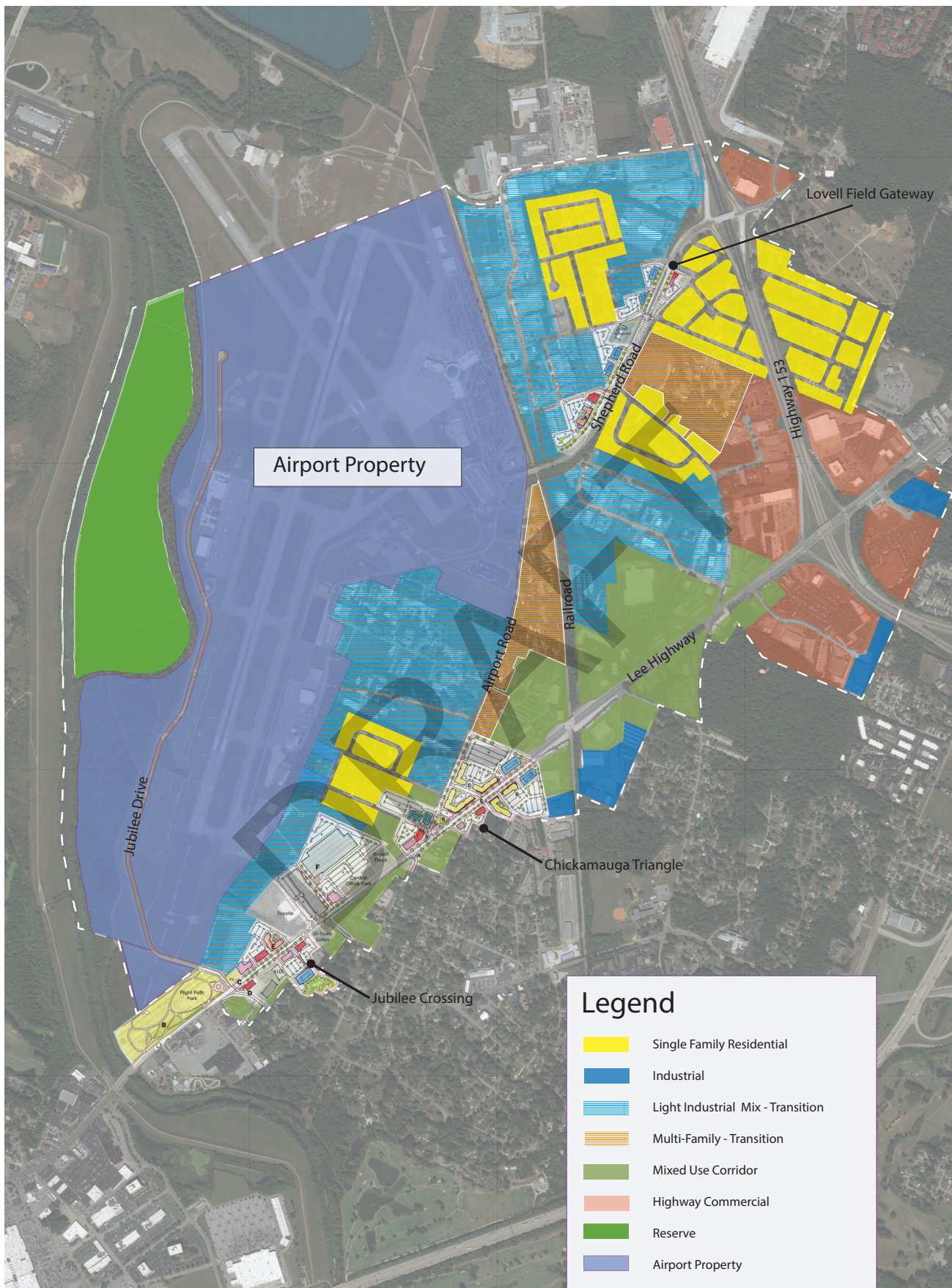
Highway Commercial (Pink)

Due to the location around a highway interchange these uses tend to be auto oriented with a mixture of retail, service, office and institutional uses.

Location: Airport Area

Natural Preserve (Green)

This land along South Chickamauga Creek is owned by the City of Chattanooga for flood control purposes.







8

IMPLEMENTATION & RECOMMENDATIONS

Outlines the implementation strategy and recommended action items to accelerate redevelopment in the Airport District.

IMPLEMENTATION

IMPLEMENTATION

Realization of a vision requires diligence, patience and the management of change. Accepting a new vision for the Chattanooga Airport District requires a commitment to make changes that assure economic growth and prosperity for residents.

The Chattanooga Airport District Master Plan Study serves as the foundation for decision making and a reference for the City of Chattanooga officials, residents, and stakeholders as they consider development proposals, capital improvements, infrastructure investments, policy changes, and other actions in the decades to come. For the vision of the Airport District to be realized, the City, Airport Authority, and area stakeholders must be proactive, serving in a leadership capacity to spearhead, implement, and coordinate recommendations within the Study. This will require the support, participation, cooperation, and collaboration of local leaders, other public agencies, various neighborhood groups and organizations, the local business community, property owners, developers, and residents.

This chapter presents an implementation framework that the City can use to initiate and undertake key recommendations included in the Study. The actions and strategies identified in this section establish the “next steps” to be taken in continuing the process of community planning and investment.



FOR THE VISION OF THE AIRPORT DISTRICT TO BE REALIZED, THE CITY, THE AIRPORT AUTHORITY, AND AREA STAKEHOLDERS MUST BE PROACTIVE, SERVING IN A LEADERSHIP CAPACITY TO SPEARHEAD, IMPLEMENT, AND COORDINATE RECOMMENDATIONS WITHIN THE STUDY.

METHODS TO ACCELERATE LAND REDEVELOPMENT

Redevelopment in a district that has not yet seen major initiatives occur can increase difficulty of revitalization. The private development community can be risk-averse in the first several years. There are numerous ways to accelerate land redevelopment in suburban areas. Each City, County, and Region has created specific methods that are tailored to a unique set of planning, land development, and economic development challenges.

The City of Chattanooga has already set aside funds for infrastructure upgrades of Shepherd Road that will create an environment that is more conducive to redevelopment of underutilized property. The below diagram highlights several of the most prevalent methods employed by government agencies. The RPA should undertake further analysis of these methods to determine their validity and implementability for the Airport District.





OVERCOMING BARRIERS TO LAND ASSEMBLY

One of the largest hurdles to redevelopment in suburban areas is when the majority of lots are small in size, and the lots are owned by various individual private land owners. The Airport District features many irregularly shaped and small lots (sub 2-acres), especially along Lee Highway and Shepherd Road. Land assembly is required in these instances to amalgamate lots so that catalytic development projects can be undertaken and transform the area.

Land assembly is a complicated process that requires a range of expertise, including lawyers, planners, engineers, architects, and financial analysts, among others. It also requires collaboration among private land owners and may involve many players, so patience is key as the process can take multiple years to complete.

The following are **primary barriers** to land assembly for redevelopment and represent best practices in the industry:

1. Private property owners may be unwilling to sell;
2. Multiple members in ownership group;
3. Absentee owners that do not live in the local region;
4. Successful local businesses operating on property;
5. Legal issues with parcels;
6. Contention between existing value versus redevelopment value of property; and
7. Speculation of redevelopment or the City's vision for the Airport District pushes up land values, generates an over evaluation of property.

Five innovative methods that the City can potentially employ to **overcome barriers to land assembly** are listed below and represent “Best Practices” in the industry. Further analysis of these methods should be undertaken to determine their validity and implementability for the Airport District.

- 1. CHA LEADS THE WAY** - CHA Airport Authority purchases properties from private land owners. Properties are assembled and then redeveloped through a public-private-partnership (P3) land lease deal. Typical land lease deals between airport authorities and private developers are 40 to 50 years in length.
- 2. SEEK FUNDING** - Make use of State Housing Finance Agency Funds to purchase and assemble sites that will be redeveloped to include workforce housing.
- 3. TIF DISTRICTS AND INNOVATIVE FUNDING SCHEMES** Create a Tax Increment Financing (TIF) district that will incentivize developers or companies to assemble land. Private developers or companies will have a portion of their property taxes put towards improving the infrastructure and visual appeal of the Airport District, ultimately raising property values. Developers can gain future approval from Local and State governments to divert the “second revenue stream” taxes established in a TIF structure towards the development site itself, such as repaying construction debt.
- 4. CHATTANOOGA DEVELOPMENT CORP** Establish a City of Chattanooga Development Corporation that acts at an arms-length entity from the City. Purchases properties for land assembly. Once land is assembled, establish private-public-partnerships (P3) with private developers. The City provides the land and gets the site shovel-ready, while the private developer constructs the vertical improvements. Development Corporation profits from development are re-invested in the CDC to support operating costs and future projects.
- 5. UNIFIED OWNERSHIP STRUCTURES** - Encourage private land owners to combine their land and become a development entity through unified ownership. Through this unified ownership structure, each land owner has “shares” in the development entity that is based on their proportional value of their original land holding. Share value reflects the market value of the entire property and not just the original land holding, making it beneficial to enter the unified ownership structure. This development entity could be provided with an expedited planning and development approvals process if the land is redeveloped for uses that are in-line with the City’s vision.

RECOMMENDATIONS

TRANSPORTATION & INFRASTRUCTURE STRATEGIES

This chapter provides a summary of transportation and infrastructure strategies within the study area. This focuses on the best strategic investments and upgrades to public infrastructure that are most likely to incentivize private development and investment in the area immediately surrounding Chattanooga Airport. Cost estimates and the recommended projects are divided into the following two categories:

Up-Front Capital Improvements. These are projects that should proceed with or without private investment and new development. The selection criteria for these include safety, improved transportation connectivity (for all modes and especially improving neighborhood walking and transit access), ability to implement in the short-term, financial feasibility, high visibility and spurs economic development.

Projects in Concert with Private Development. These projects are those that are best leveraged through private investments. Selection criteria includes the need for incentives to support the re-development of vacant or underutilized properties within the catalytic sites that are longer-term and that may require ROW acquisition.

PLANNING FOR SUCCESS

Effective transportation improvements will both enhance the airport area as a point of arrival for visitors to the City of Chattanooga and make it a better place to reside and do business. Strategic transportation enhancements will also support private investment and re-investment within the district – a key goal of this study. From a user perspective, success can be measured as follows:

- Local residents: Greater affordability and choice for local trips, less reliance on vehicular trips, improved safety, better access to transit, recreation, schools and essential services
- Local workers and employers: Less congestion, more choice and affordability
- Airport users, business travelers and tourists: Better access to Downtown Chattanooga, easier transfer between modes to reach local destinations
- Future residents and workers: A transportation network that helps to attract and retain workers. Today this means more bikeshare, car share, connections to recreation and “car-lite” living

The latter group is especially important as the City plans for a future with declining household size resulting in “a need for a greater variety of housing with a premium on convenient access to jobs and

community services as households diversify.” The premium is on convenient access which is only really attainable by providing greater choice and safety for non-Single Occupancy Vehicle (SOV) modes.

The economic analysis conducted as part of this study supports a future with greater social and economic diversity, calling for a mix of market rate and workforce housing units – condominiums, apartments, multi-plexes and townhomes. Growth areas include industrial/flex product space, and businesses related to Chattanooga State and University of Tennessee Chattanooga, aviation and aerospace sectors, health services and technology firms. All of these sectors place a premium on proximity to transit and cycle/multi-use path connectivity. New office space developed in proximity to these amenities helps to attract a highly skilled, educated workforce and build on the region’s academic assets.

The City’s transportation policies recognize this and directly support mobility upgrades in the District. This includes BRAINERD... a vision for Today and the subsequent new Brainerd Overlay zoning. Targeted investments in the study area’s transportation infrastructure will help leverage private investment and give the study area a head start on competitors.

SELECTION CRITERIA

The Stantec team criteria for identifying the universe of projects included the following:

- **Overall public benefit:** An effort was made to identify improvements that serve not just future market demand but also the existing neighborhood and needs for walkability and better access to local service, retail, recreation, and open space.
- **Cost and phasing:** The approach to cost is conservative and phasing prioritizes projects that will best leverage private investment. Phasing follows the two categories described above. Upfront, requiring short-term investment and in

concert with private development, that could be at least partially funded with private dollars as part of a new development/re-development.

- **Safety:** In locations with high crash clusters an effort was made to recommend intersection improvements such as clearer sightlines, better street geometry and shorter crossing distances for those on foot.
- **Multi-modal access:** Improvements to intersections and street segments also focused on improving access for foot traffic.
- **Stormwater and drainage:** The entire district suffers from a lack of stormwater and drainage infrastructure, so improvements assume the addition of curbing, catch basins and stormwater infrastructure.
- **Public comment and feedback:** Strategies also considered feedback received from local residents and key stakeholders during outreach.

RECOMMENDATIONS

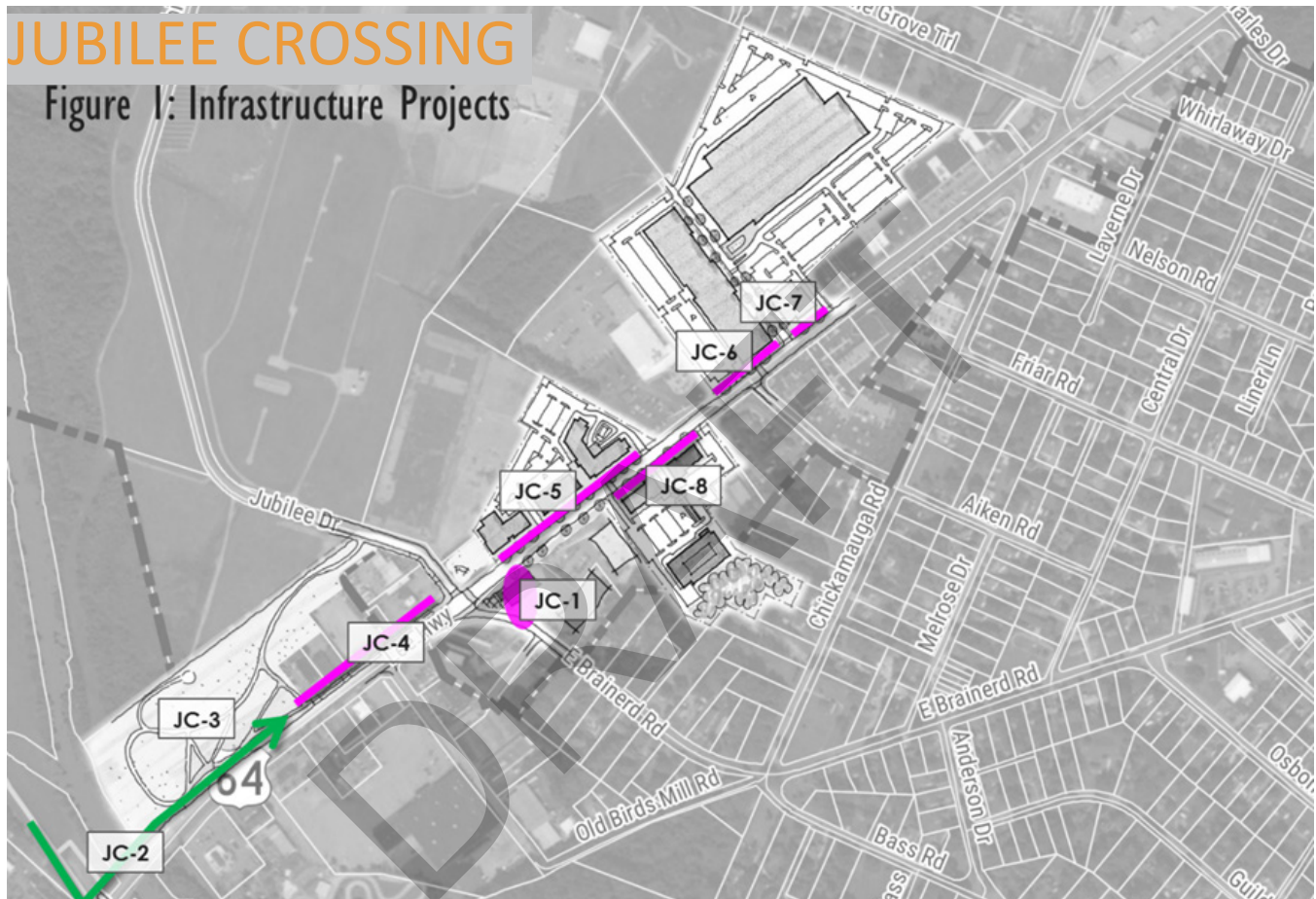
CATALYTIC SITES

The following three potential development sites have been identified as having the greatest economic potential to help transform the area adjacent to the Chattanooga Metropolitan Airport. In order to leverage private investment at each of these sites, upgrades and/or improvements are recommended mostly within the public right of way.

Jubilee Crossing (See Figure 1): This is the Gateway Site for the Airport Area for those arriving from the south and the recommended improvements proposed to expand the existing open space at Lee Highway north of South Chickamauga Creek by increasing continuity for pedestrian access. It also would act as a potential western gateway in the study area that would provide increased economic opportunity. Jubilee Crossing comprises a number of parcels along Jubilee Drive and Lee Highway.

Proximity to the Chickamauga Creek Greenway will draw pedestrians, runners, and cyclists to the site, to mix with local employees and residents. Goals of the concept are to:

- Create a western gateway to the district that is more visually appealing and creates a neighborhood center with better access on foot.
- Provide a destination along the Chickamauga Creek Greenway.
- Provides amenities for the future proposed hotel.
- Create a signature gateway development for the district and CHA.
- Attract further redevelopment and investment on surrounding parcels along Lee Highway.
- Attract new companies that may have not previously considered the area.



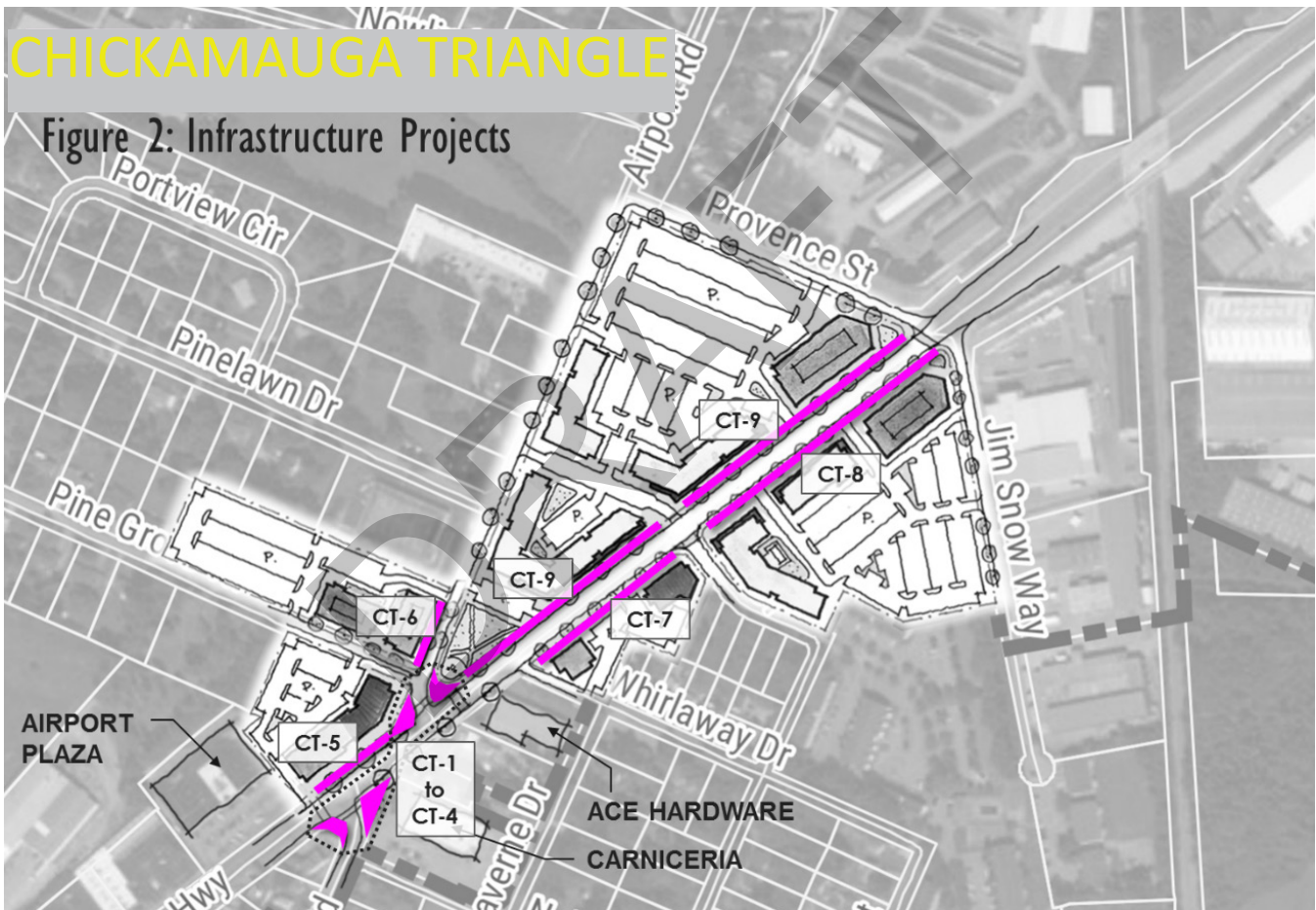
Project	Description	Cost Est.	Timing	Criteria/Notes
Lee Highway & East Brainerd JC-1	<ul style="list-style-type: none"> • At Island Liquor • Close Lane, remove paving and curbs • Traffic Signals upgrade 	\$300,000	Upfront 1-2 years (ROW only)	<ul style="list-style-type: none"> • High-crash location • Opportunity for intersection re-alignment and safety improvements, better walking connections and connectivity • Lane closure can add developable land
Streetscape JC-4 and JC-5	<ul style="list-style-type: none"> • Sidewalk, trees, stormwater, lights, crosswalk 	\$470,000	Upfront 1-3 years (ROW only)	<ul style="list-style-type: none"> • Upgrades about potential development parcels and will directly benefit future tenants • Opportunity to connect to the existing Greenway and open space
Connection to South Chickamauga Creek Greenway JC-2	<ul style="list-style-type: none"> • Connection across bridge and to Greenway • Lighting, signage/ transition from street/bridge to creek trail 	\$255,500	Mid-term 3-5 years	<ul style="list-style-type: none"> • Makes connection to Greenway – basic upgrades and signage • Requires coordination with TDOT to connect to path on other side of bridge
Jubilee Park JC-3	<ul style="list-style-type: none"> • Existing park upgrades 	\$200,000	With Development	<ul style="list-style-type: none"> • Upgrades include irrigation, plantings and maintenance • Could be further enhanced as future open space mitigation for redevelopment
Streetscape JC-6, JC-7, JC-8	<ul style="list-style-type: none"> • Sidewalks, trees, stormwater, lights, crosswalks 	\$360,000	With Development	<ul style="list-style-type: none"> • Upgrades about potential development parcels and will directly benefit future tenants • Opportunity to connect to the existing Greenway and open space

Jubilee Park: With a new connection created from Jubilee Crossing to the South Chickamauga Creek Greenway, there is an opportunity to upgrade the existing park located to the immediate northeast of the bridge to better incorporate it as part of the existing trail network and as an amenity for local residents and visitors. Vertical elements would be kept to a minimum since the park is located within the flight/restricted zone close to airport runways.

Chickamauga Triangle (See Figure 2): This site features a proposed re-alignment of intersections at Chickamauga Rd with Lee Highway, and Airport Road with Lee Highway. Sidewalk improvements are recommended to increase multi-modal connectivity,

safety and access to properties within this site which is proposed overall as either a residential plaza or office development. The goals for this concept include the following:

- Introduce mixed-use development to the Airport District.
- A gateway development for CHA that will trigger future redevelopment opportunities along Airport Road and Lee Highway.
- Provide much needed multi-family housing.
- Creating a new neighborhood commercial node for existing and future residents.
- Improved walkability and access to services for those on foot.



Project	Description	Cost Est.	Timing	Criteria/Notes
Lee Highway/ Chickamauga Road/ Airport Road Intersection Improvements CT1-CT4	<ul style="list-style-type: none"> • Includes traffic signal upgrades • Roadway reconfiguration • Neckdowns • Shorter, safer crossings • Re-aligned intersection • Better sight lines for turning vehicles 	\$730,000	Upfront 1-2 years (ROW only)	<ul style="list-style-type: none"> • High-crash location • Opportunity for intersection re-alignment and safety improvements, better walking connections and connectivity • Helps transform a commercial, car-oriented node into more of a neighborhood-oriented center
Streetscape – Chickamauga Triangle CT5 to CT-9	<ul style="list-style-type: none"> • Sidewalks, trees, stormwater, lights, crosswalks 	\$1,200,000	With Development	<ul style="list-style-type: none"> • Upgrades abut potential development parcels and will directly benefit future tenants

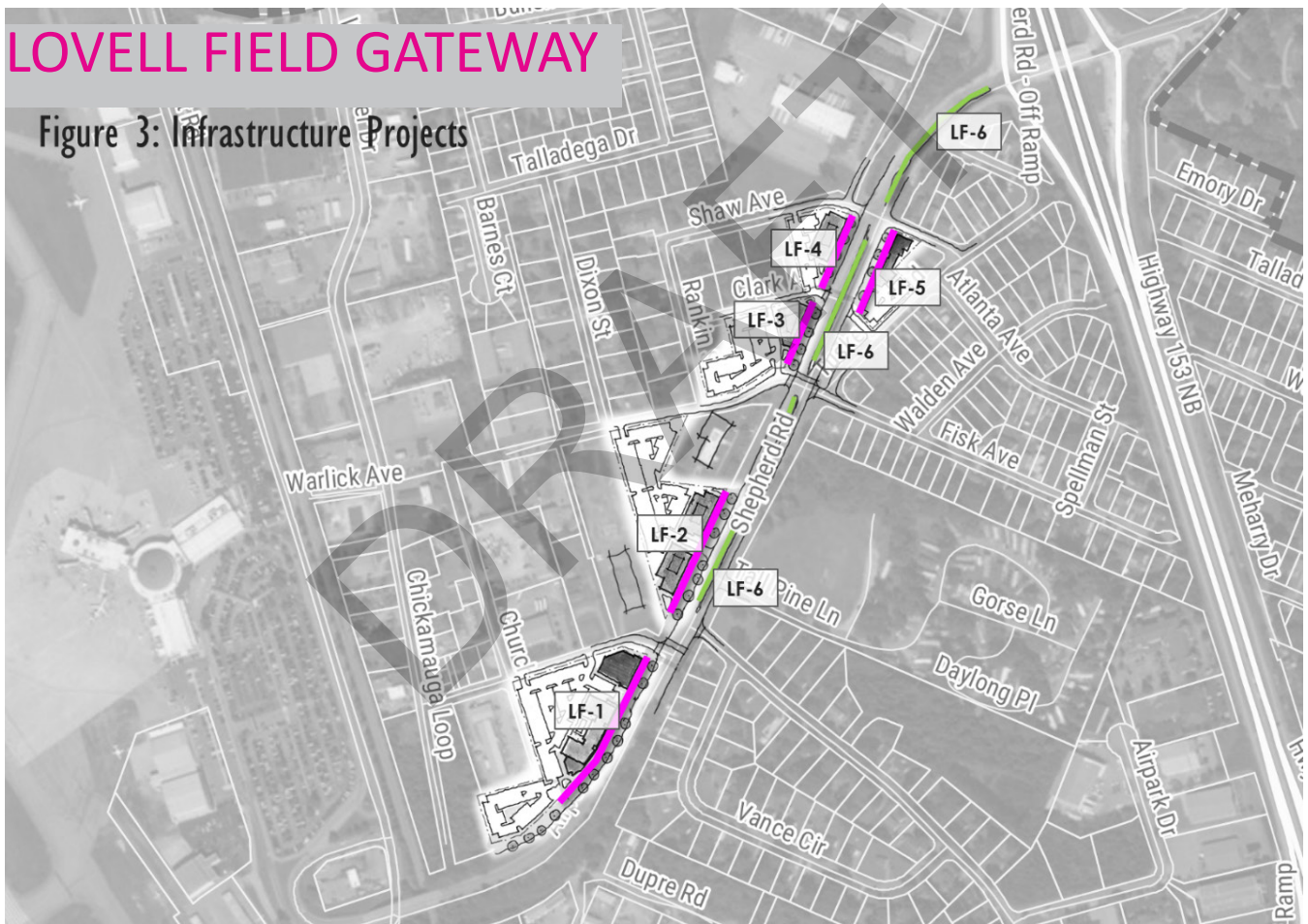
These proposed Capital Improvements are conceptual in nature and intended to guide city decision makers for budget planning. Recommendations made in a plan does not guarantee or allocate funding. More detailed cost estimates were produced for Capital Planning purposes for the City and are available upon request.

Lovell Field Gateway (See Figure 3):

Redevelopment of Shepherd Road and creation of the “Lovell Field Gateway” will transform current perceptions of the Airport District. The site’s frontage onto Shepherd Road, proximity to the terminal, and connectivity to the highway makes it an ideal location for a mid-range 3 or 3.5-star hotel. The hotel will be supplemented with retail and food & beverage concepts that will support hotel visitors and those traveling to and from CHA. Local residents living in the Shepherd community will be able to comfortably walk to the site for dining options and services. The proposed development will create a first and last gateway experience for people flying in and out

of Chattanooga. More specifically, the intent is to provide:

- A much-needed airport-centric hotel.
- A new hospitality and commercial corridor.
- Improved aesthetics.
- Improved commercial attractiveness for additional investment.
- Walkable employment to residential neighborhoods.
- And additional amenities for future office tenants locating in the Lovell Field Gateway area.



Project	Description	Cost Est.	Timing	Criteria/Notes
Streetscape - Lovell Field Gateway LF-1 to LF-5	• Sidewalks, trees, stormwater, lights, crosswalks	\$390,000	With Development	• Upgrades about potential development parcels and will directly benefit future tenants

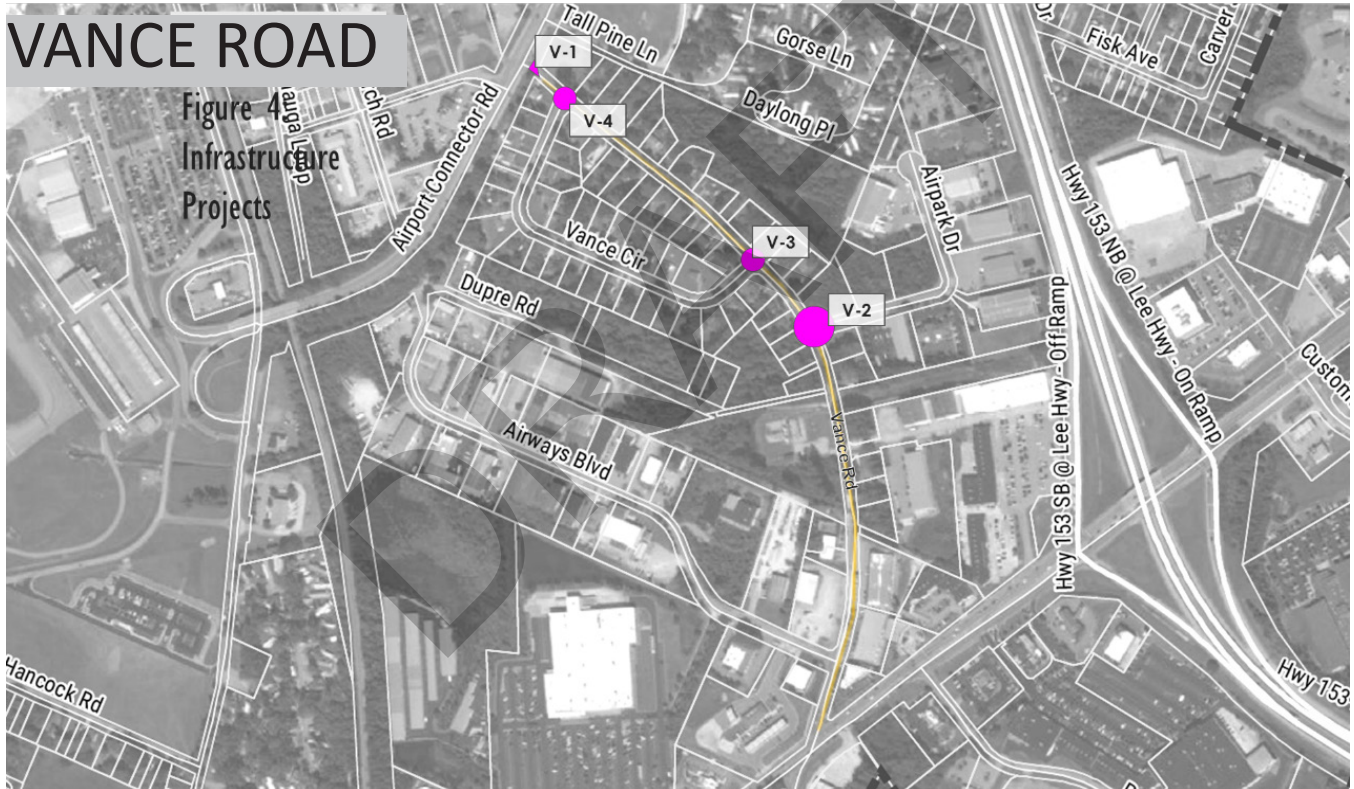
These proposed Capital Improvements are conceptual in nature and intended to guide city decision makers for budget planning. Recommendations made in a plan does not guarantee or allocate funding. More detailed cost estimates were produced for Capital Planning purposes for the City and are available upon request.

Connection to South Chickamauga Creek Greenway: It is recommended that the study area better connect to the existing South Chickamauga Creek Greenway. This is a recreational resource for both local residents and future visitors to the hotel and culinary and craft brewery/distillery recommended by the market study. This means providing a properly signed multi-use path connection across the Lee Highway bridge that crosses the Chickamauga Creek.

ROADWAY UPGRADES

Shepherd Road (under design and budgeted): Shepherd Road has been slated for reconstruction in the near term and pre-bid design plans currently exist. This project is not considered part of the future infrastructure program list.

Vance Road Traffic Calming (See Figure 4): This includes the addition of two mini traffic circles on Vance Road at Vance Court and the reconfiguration of the intersection with Shepherd Road to improve safety. Other traffic calming options that could be potentially used with limited ROW width are chicanes, splitter islands, and yield street segments. Also incorporated is a larger circle at Airpark Drive as currently proposed by Chattanooga DOT. A right-turn only re-configuration of the intersection with Shepherd Road is recommended to help discourage cut-through traffic destined for the airport. For this strategy to be even more effective a median on Shepherd Road would further discourage (future) illegal left turns.



Project	Description	Cost Est.	Timing	Criteria/Notes
Shepherd Road Rebuild LF-6	<ul style="list-style-type: none"> NOT PART OF THIS STUDY: New boulevard cross-section is under design 	Budgeted already	Immediate	<ul style="list-style-type: none"> Not part of future program list since this is under design and budgeted Note that this study recommends longer-term the addition of a median at Vance Road to assist with traffic calming
Vance Road Traffic Calming V-1 to V-4	<ul style="list-style-type: none"> 2 smaller traffic circles, 1 large circle, signage RT-only reconfiguration at Shepherd Road to reduce cut-through traffic 	\$50,000 \$100,000 \$6,000	Upfront 1-2 years (ROW only)	<ul style="list-style-type: none"> Airport traffic uses Vance as a cut through roadway Each smaller circle at roughly 20' radius Assume larger circle at Airpark Drive per City DOT Chicanes or other traffic calming could also be considered
Airport Road Sidewalk AR-1	<ul style="list-style-type: none"> Sidewalk on one side (west), drainage, pedestrian lighting 	\$2,300,000	Longer-Term	<ul style="list-style-type: none"> Based on cost estimates provided by City DOT Does NOT include ROW acquisition necessary to add a sidewalk

These proposed Capital Improvements are conceptual in nature and intended to guide city decision makers for budget planning. Recommendations made in a plan does not guarantee or allocate funding. More detailed cost estimates were produced for Capital Planning purposes for the City and are available upon request.

Airport Road: Airport Road was identified during outreach and the workshop as extremely unsafe for those on foot and sub-standard as a means of accessing the airport by any mode. Current conceptual plans exist that would add a sidewalk to the west side of the road and improve drainage. This is a longer-term project given the need to acquire private property to accommodate a sidewalk on the west side. Appendix 2 contains the estimated project costs for Airport Road conceptual sidewalk.

ADDITIONAL TRANSPORTATION RECOMMENDATIONS

District Walk and Bike Enhancements

- The South Chickamauga Creek multi-use path provides an opportunity to install bikeshare stations, especially as the Study area's bicycle accommodations grow over time.
- Better walk and bike infrastructure can help connect current and potential future riders to local CARTA bus service – journey to work mode share data indicates very low transit use.
- Better walking and biking connections will provide local residents and employees with cheaper, healthier options for local trips.
- Catalytic investment should aim to better connect walking and biking trips between residential neighborhoods and local services, groceries and retail. Sample locations include:
 - » Vance Road and Lee Highway
 - » Nelson Drive/Airport Road and Chickamauga Road

Rail Service

- As a longer-term strategy for supporting economic development in the airport area, efforts to restore rail service connecting Downtown Chattanooga and the airport would connect local residents with jobs downtown, reverse commuters including residents that live Downtown and work within the Study area, tourists and visitors and airport users.

CARTA Bus Service





- Amenities such as shelter, signage and seating should be prioritized for higher ridership stops on CARTA Routes 4 and 19.

Airport Express Service

- In the mid to long-term the airport should investigate the feasibility of a dedicated airport express bus service (examples are included at the end of this section).
- This will help to manage parking demand and boost the airport's profile with travelers.

While not strictly within the purview of this study, it is recommended that longer-term the airport, its users and the City of Chattanooga would benefit from a multi-modal hub/transfer that integrates:

- » CARTA services
- » An Airport Express Shuttle
- » Greyhound service

Bus Line	Image	Comments
RTD A-Line – Denver (Rail) <ul style="list-style-type: none"> • 15-minute headways 		Rail transit service similar to the A-line is envisaged on the Tennessee Valley Railroad corridor. This is a mid to long-term gold standard for better airport access.
FAST “Frequent Affordable Safe Transit” Network – Detroit (Bus) <ul style="list-style-type: none"> • 15-minute headways 		
28X Airport Flyer - Pittsburgh (Bus) <ul style="list-style-type: none"> • 30-minute headways 		These three examples of air-port bus service support larger, busier airports than Chattanooga. They provide different levels of service, starting with Charleston airport bus on 60-minute headways.
XP4 Airport Express – Charleston (Bus) <ul style="list-style-type: none"> • 60-minute headways 		



DISRUPTIVE TECHNOLOGIES & MOBILITY INNOVATION

Like many cities across North America, Chattanooga is projected to be growing both older and younger. This is visible in the re-birth of the City as a walking, bicycling, outdoor hub with a growing economy. To harness this potential, the Airport District needs to capture the same potential by embracing new mobility and technology. Locally, the airport already designates a waiting area and pick-up area for Transportation Network Companies (TNCs). The City's Smart City Division also plans for and develops new technology including autonomous vehicles (AVs), mobility as a service, and more.

The study area currently contains limited new transportation infrastructure. It lacks bikeshare, car share, bicycle paths, charging stations for electric vehicles (EVs), E scooters, and streets and infrastructure is oriented toward single-occupancy vehicles.

Although removed from Downtown, the Airport District and study area is part of the City's ongoing and future success. This means embracing new mobility.

AV technologies have the potential to support older adults and retirees who either do not want to own a car or who can no longer drive. Younger adults are also eschewing the single-family, two-car garage households of their suburban forbears and are adopting car-free and car-lite lifestyles. Cities that have recognized and embraced these trends are thriving.

Opportunities

- Explore opportunities to collaborate with City's Smart City Division through the Chattanooga Department of Transportation.
- Monitor ongoing positioning of City as a hub for new Electric Vehicle (EV) technology.
- This could be leveraged into local mobility innovations and solution.

STORMWATER RECOMMENDATIONS

The catalytic sites mentioned in this study suffer from poor drainage, under-sized culverts, and /or lack of stormwater infrastructure. To assist in mitigation these issues, stormwater Best Management Practices (BMPs) have been recommended at each site (see summary in Table 8-1). It is critical that these BMPs are designed to adequately filter and transport design flows. As development increases in these areas, stormwater runoff will change in speed and direction. In cases where culverts are undersized (see Chapter 2, Stormwater Analysis), the chosen method of conveyance associated with these BMPs will need to be increased to account for current and future runoff capacity.

Careful site planning includes reducing the amount of directly connected impervious areas, fitting the proposed improvements to the site terrain, preserving and using the natural drainage systems, and planning to replicate pre-development hydrology.

Developers and contractors can do even more during site construction to help manage quality and volume of stormwater flows. Minimizing site disturbance and compaction; retaining natural vegetation, minimizing parking areas and curb-and-gutter internal drainage controls in favor of vegetated swales, and maintaining natural buffers and drainage ways typically provide as great an impact as post-construction BMPs. Below are examples of common BMPs:

Culvert Sizing Study: Improves existing drainage by modeling stormwater flows to verify the need for increased capacity due to increased development.

Rain Gardens/Infiltration: Rain gardens are depressed areas that allow stormwater from streets, roofs, and parking lots to infiltrate the soil. These gardens can be planted with grasses and flowering perennials and are an economical and aesthetically pleasing alternative to traditional open channel conveyance.

Urban Stream Restoration: Stream restoration improves flood management by restoring riparian zones and the natural flow of stormwater.

Suspended Pavement Tree Wells: Suspended pavement provides a structure to support pavement and sidewalks, allowing for the soil below to remain uncompacted. This helps accommodate tree roots and provides room for stormwater piping and connection to downspouts.

Bioswales: In areas where open channel conveyance is undersized or there is a need for improved aesthetics along the right-of-way, bioswales provide a vegetated swale that helps retain water and flush out pollutants.

TABLE 8-1 RECOMMENDED BEST MANAGEMENT PRACTICES

Catalytic Site	Recommended BMP
Jubilee Crossing	Suspended Pavement Tree Wells/Sidewalk Bioswale
Jubilee Park	None
Chickamauga Triangle	Tree Wells/Sidewalk Bioswale
Lovell Field Gateway	Rain Garden/Infiltration and Culvert Sizing Study
Vance Road	Traditional Curb/Gutter with Sidewalk
CDOT Airport Road	Sidewalk Bioswale, Stream Restoration, and Culvert Sizing Study

CHICKAMAUGA TRIANGLE AND JUBILEE CROSSING

Chickamauga Triangle and Jubilee Crossing (Figure 8-1) suffers from a lack of infrastructure and vegetation. This area also has less space along the right-of-way with buildings close to the road. Tree wells can assist in channelizing stormwater without taking up needed space in the right-of-way for sidewalks.

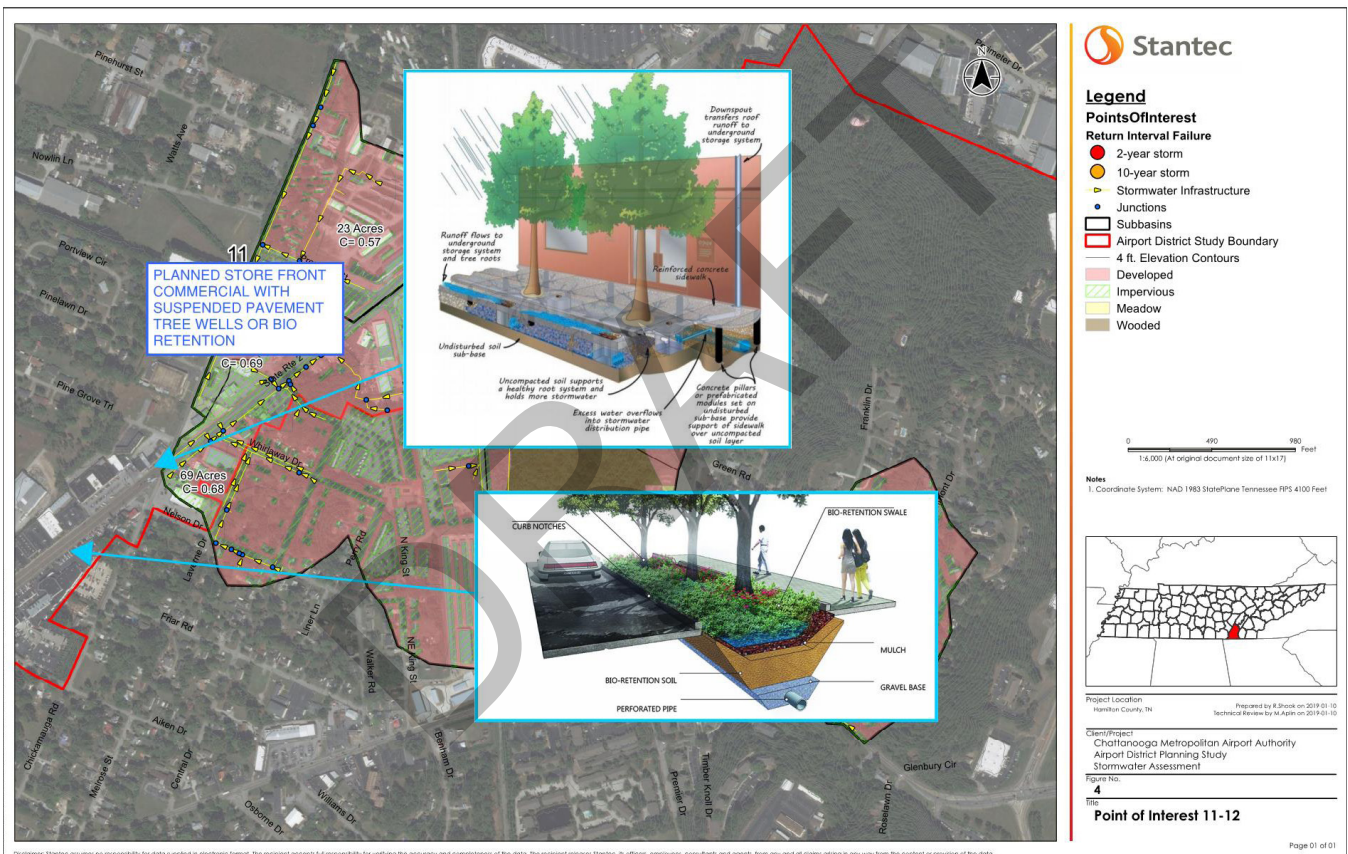


FIGURE 8-1 CHICKAMAUGA TRIANGLE AND JUBILEE CROSSING

LOVELL FIELD GATEWAY

Lovell Field Gateway, as shown in Figure 8-2, was found to have undersized culverts in multiple areas along Shepherd Road based on the stormwater analysis in Chapter 2. While the analysis performed during this study represents a high-level assessment and does not include detailed stormwater modeling, the results warrant further investigation into culvert sizes in this area. A study to verify the undersized culverts would identify areas for improvement

by increasing capacity. Additionally, rain gardens and detention/infiltration systems can assist in mitigating flooding in this area if properly designed. Increased conveyance would be necessary along with stormwater BMPs to adequately handle current and future design flow.

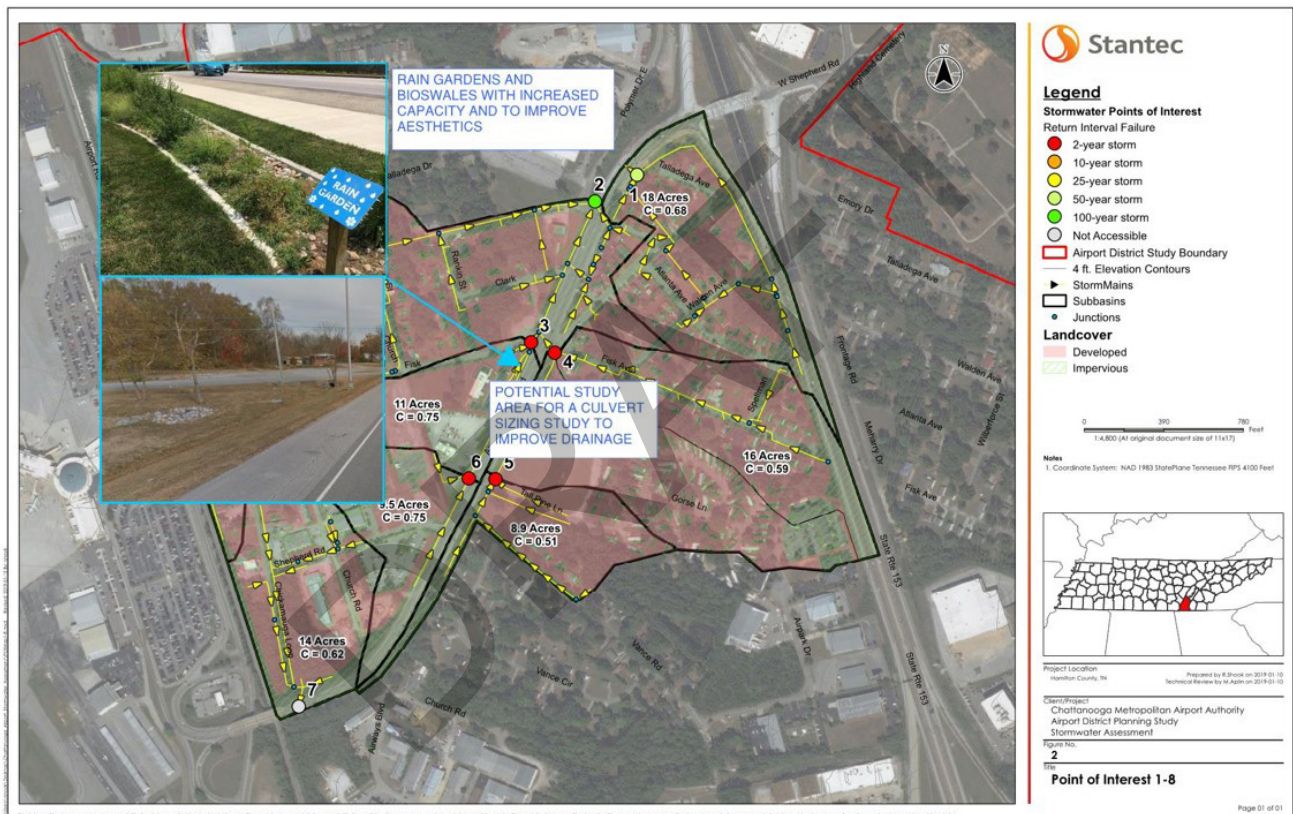


FIGURE 8-2 LOVELL FIELD GATEWAY-RAIN GARDEN/INFILTRATION

AIRPORT ROAD

Airport Road, as shown in Figure 8-3, was also found to have undersized culverts and has very little space along the right-of-way. Similar to the Lovell Field Gateway, a study to verify these undersized culverts is recommended. Existing channels that carry flow along Airport Road could also benefit from smaller bioswales with catch basins and increased conveyance capacity. Based on conversations with

stakeholders and site visits, the potential for small urban stream restoration in this area would improve stormwater drainage and allow future development along Airport Road.

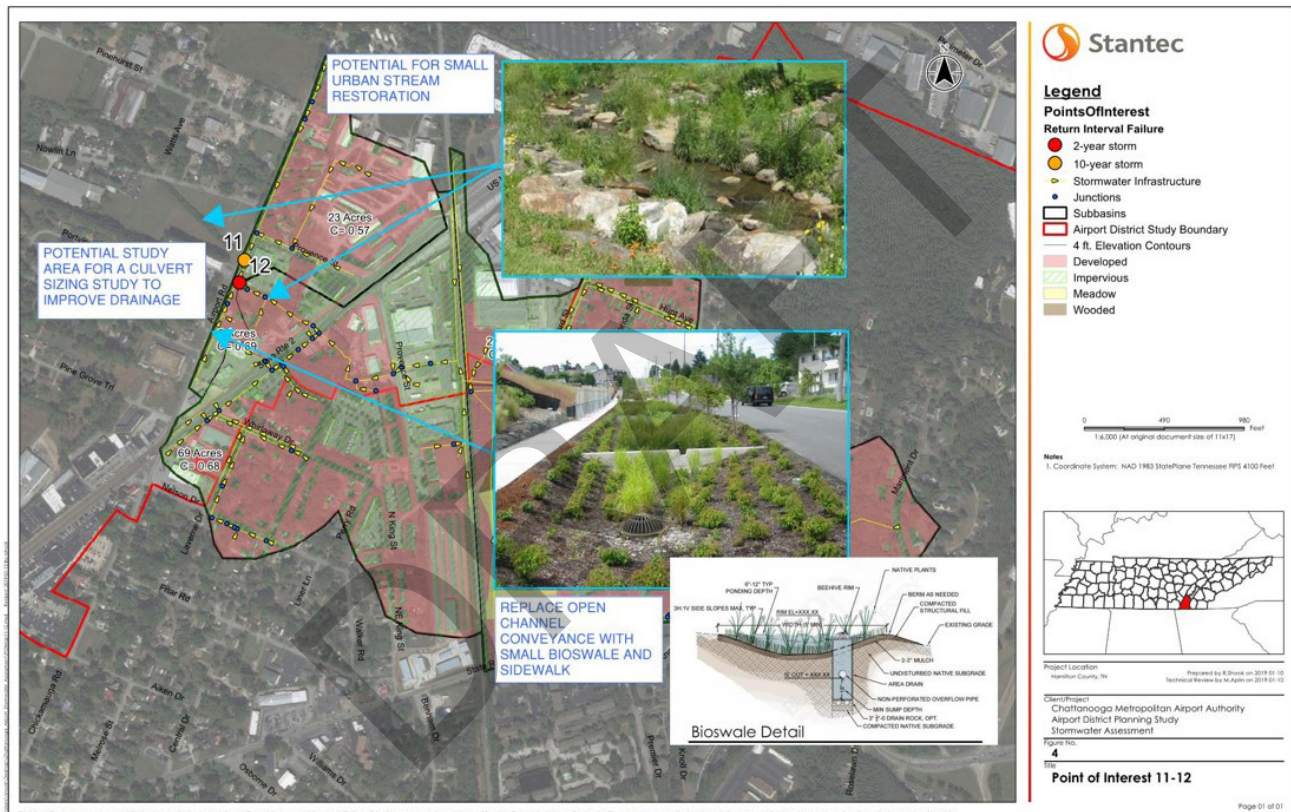


FIGURE 8-3 AIRPORT ROAD - SIDEWALK/BIOSWALE AND STREAM RESTORATION

ADVANCING THE CHATTANOOGA AIRPORT DISTRICT PLANNING STUDY FORWARD

The City and the Airport Authority can advance the Chattanooga Airport District Planning Study Forward by undertaking additional design of the priority sites, allocating and funding the Transportation and capital projects, conducting detailed financial analysis and creating branding for the catalytic sites to entice developers and share the vision.

1. PRIORITY AREA SITE PLANNING

- Zoom-In Detailed Site Plans
- Illustrative Site Plans
- Project Rendering Views

2. TRANSPORTATION/INFRASTRUCTURE CAPITAL PROJECTS

- Specifying Capital Projects
- Refined Cost Estimates
- Phasing Allocation

3. REAL ESTATE ACTIONS

- Financial Analysis
- Incentives & Inducements
- Property Offering Approaches

4. BRANDING & COMMUNICATIONS

- Overall Name, Logo & Images
- Sub-Area Identities
- Summary Packages

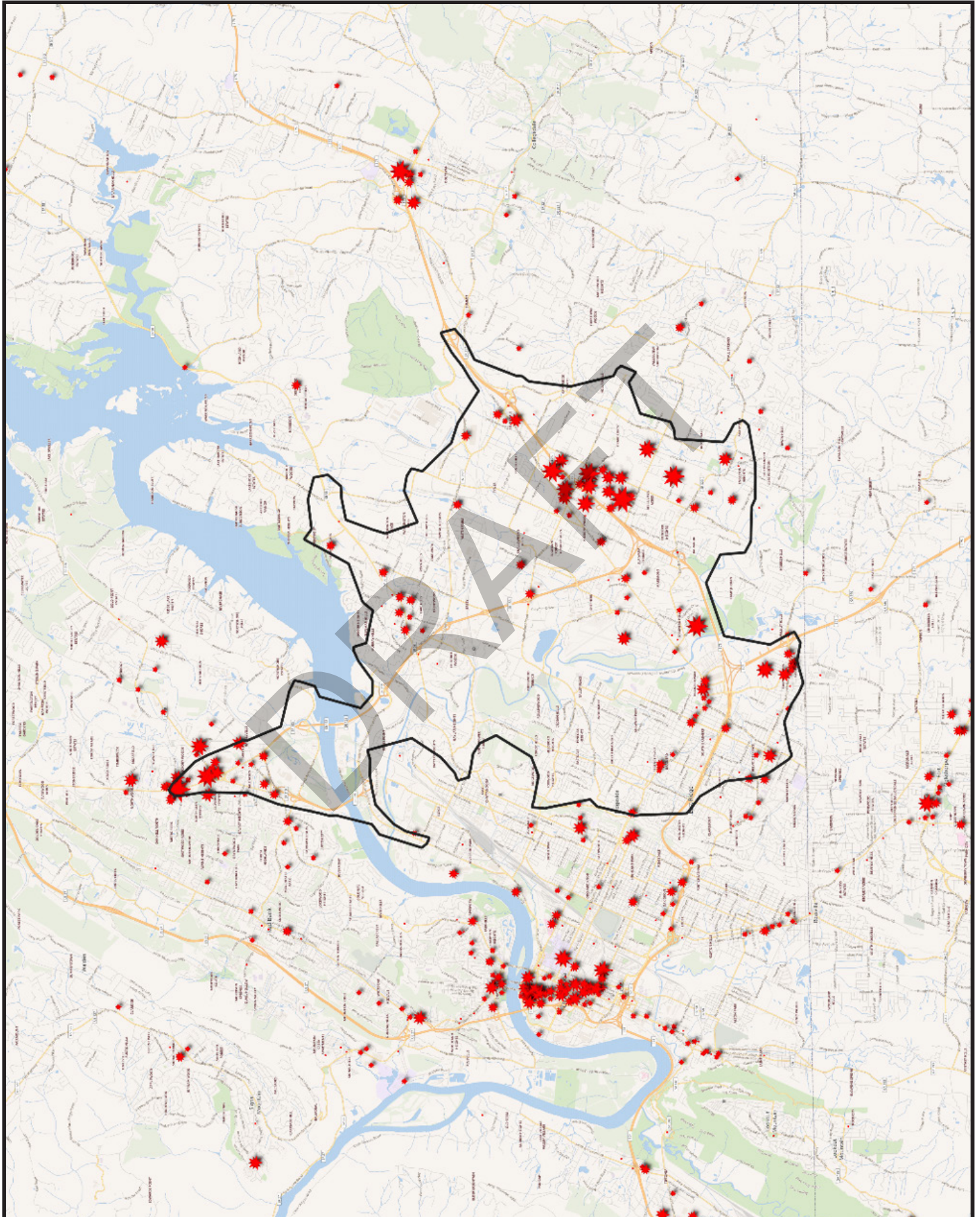
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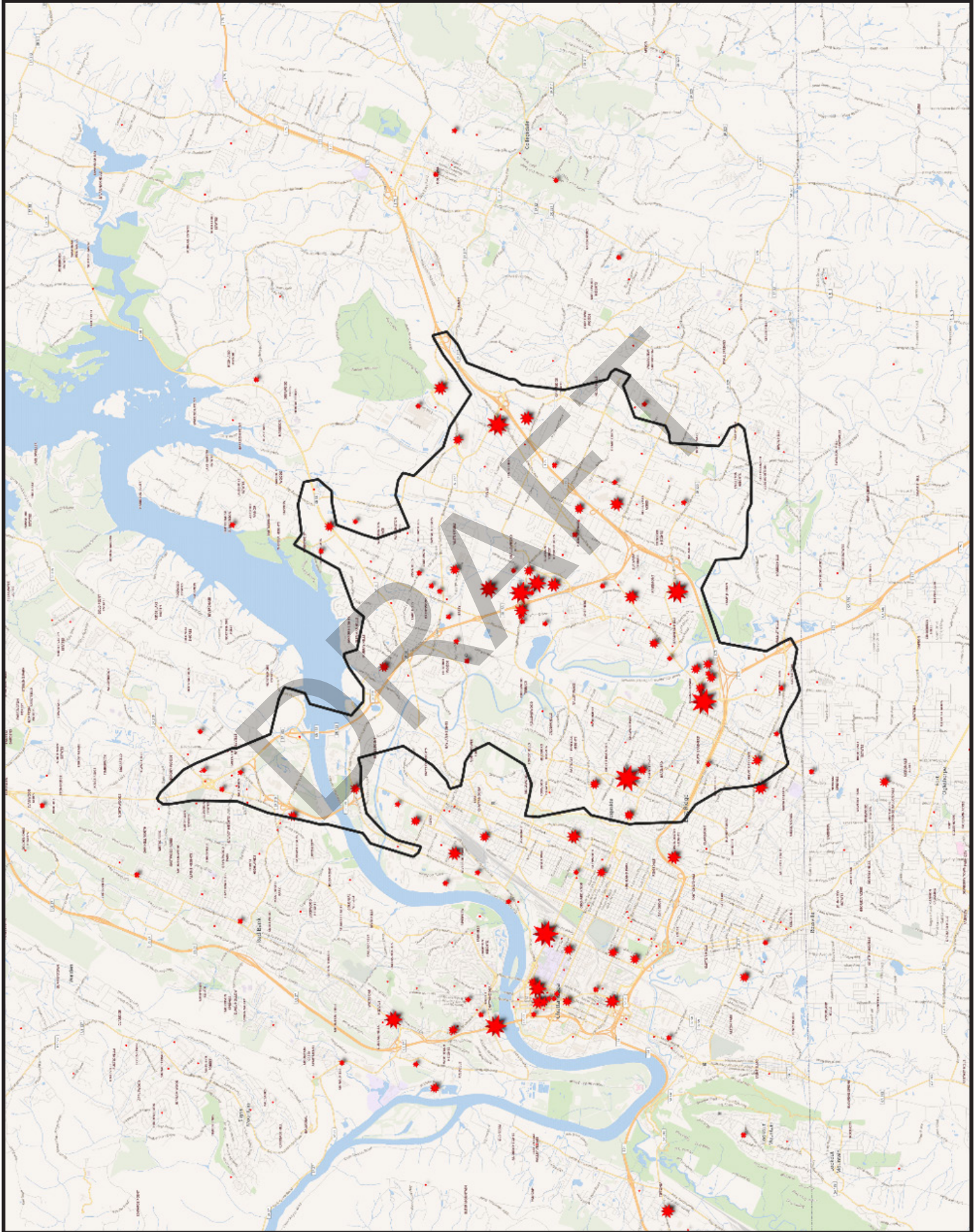
APPENDIX

Employment Concentration Maps

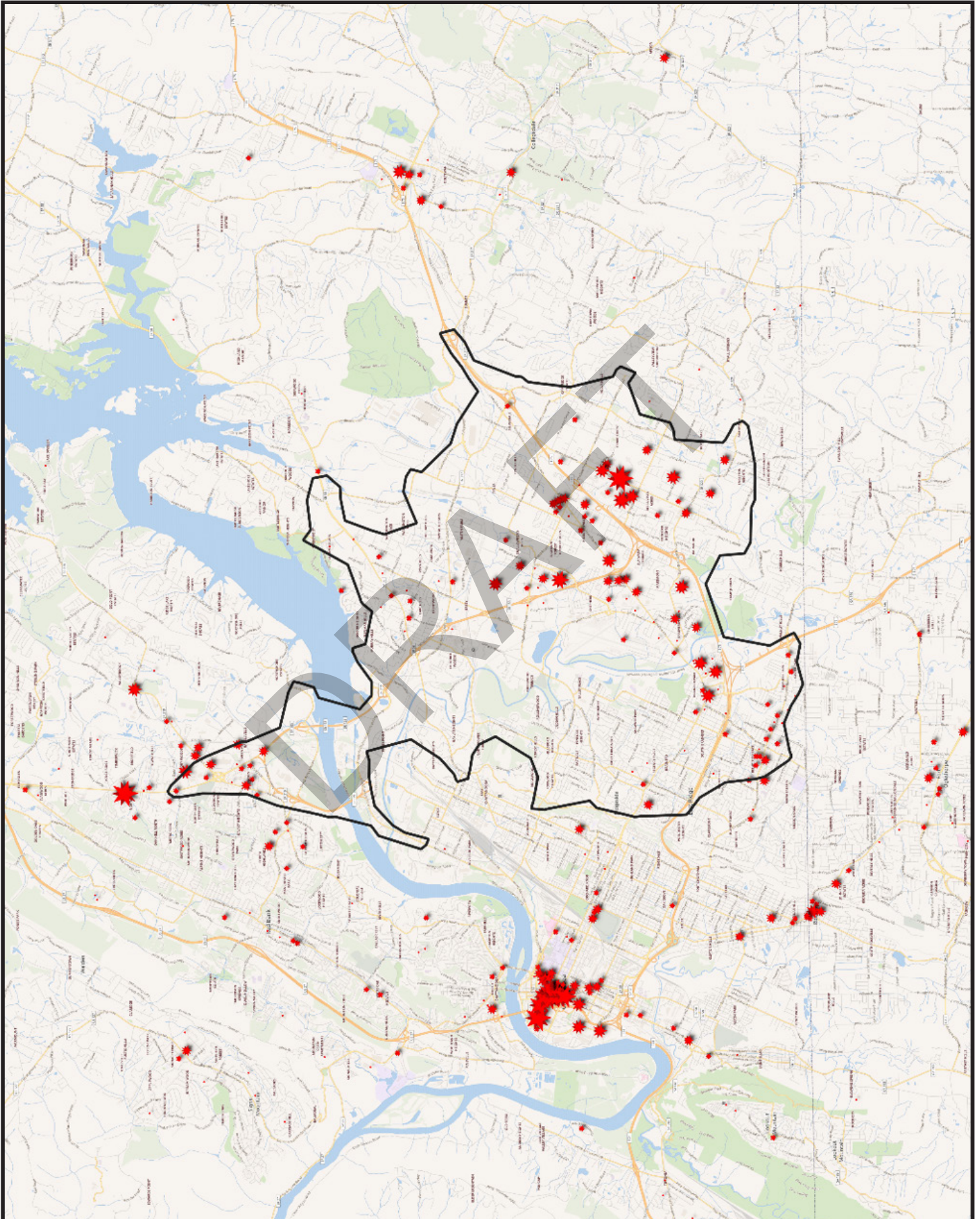
ACCOMMODATION AND FOOD SERVICE EMPLOYMENT MAP



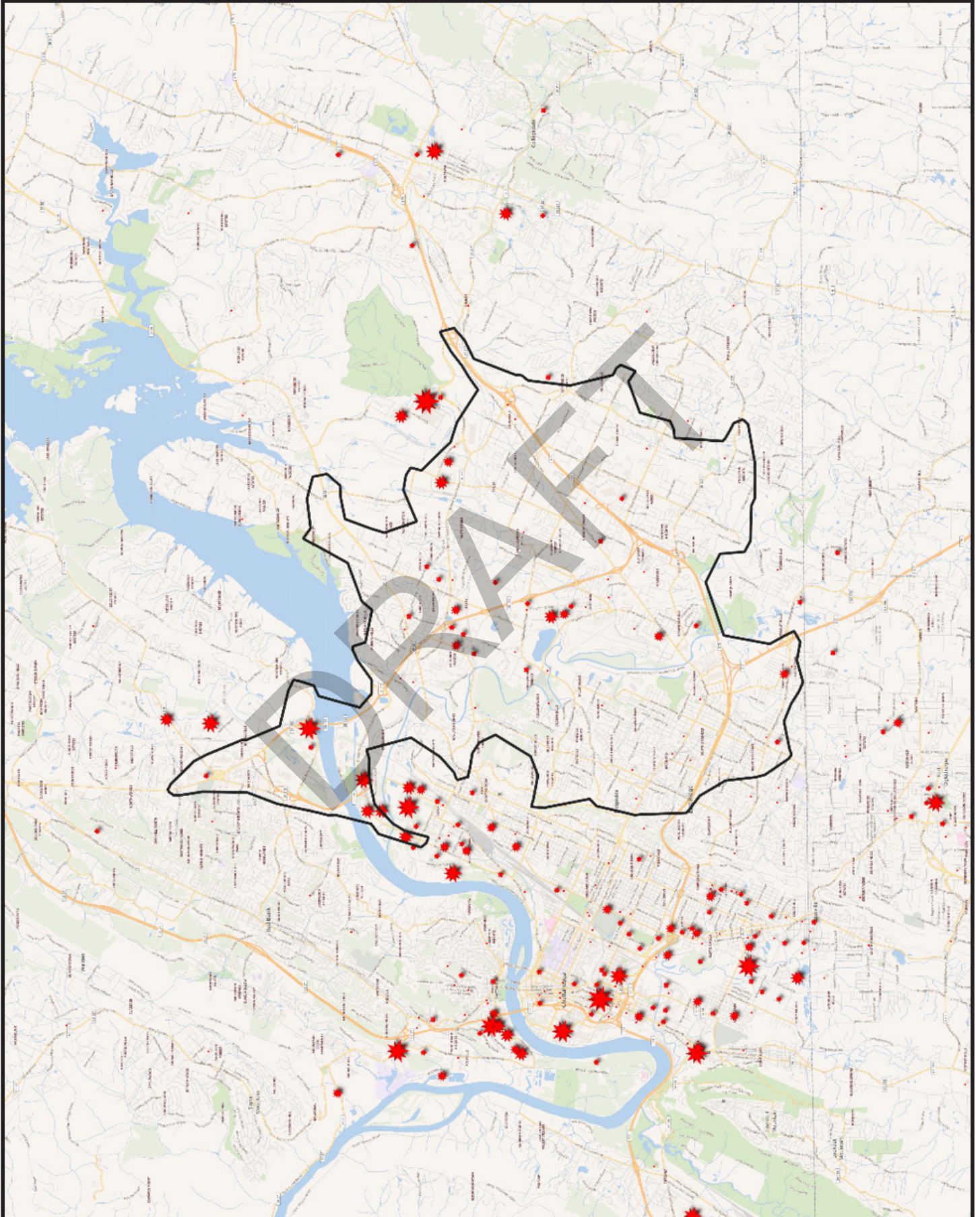
ADMINISTRATIVE AND SUPPORT EMPLOYMENT MAP



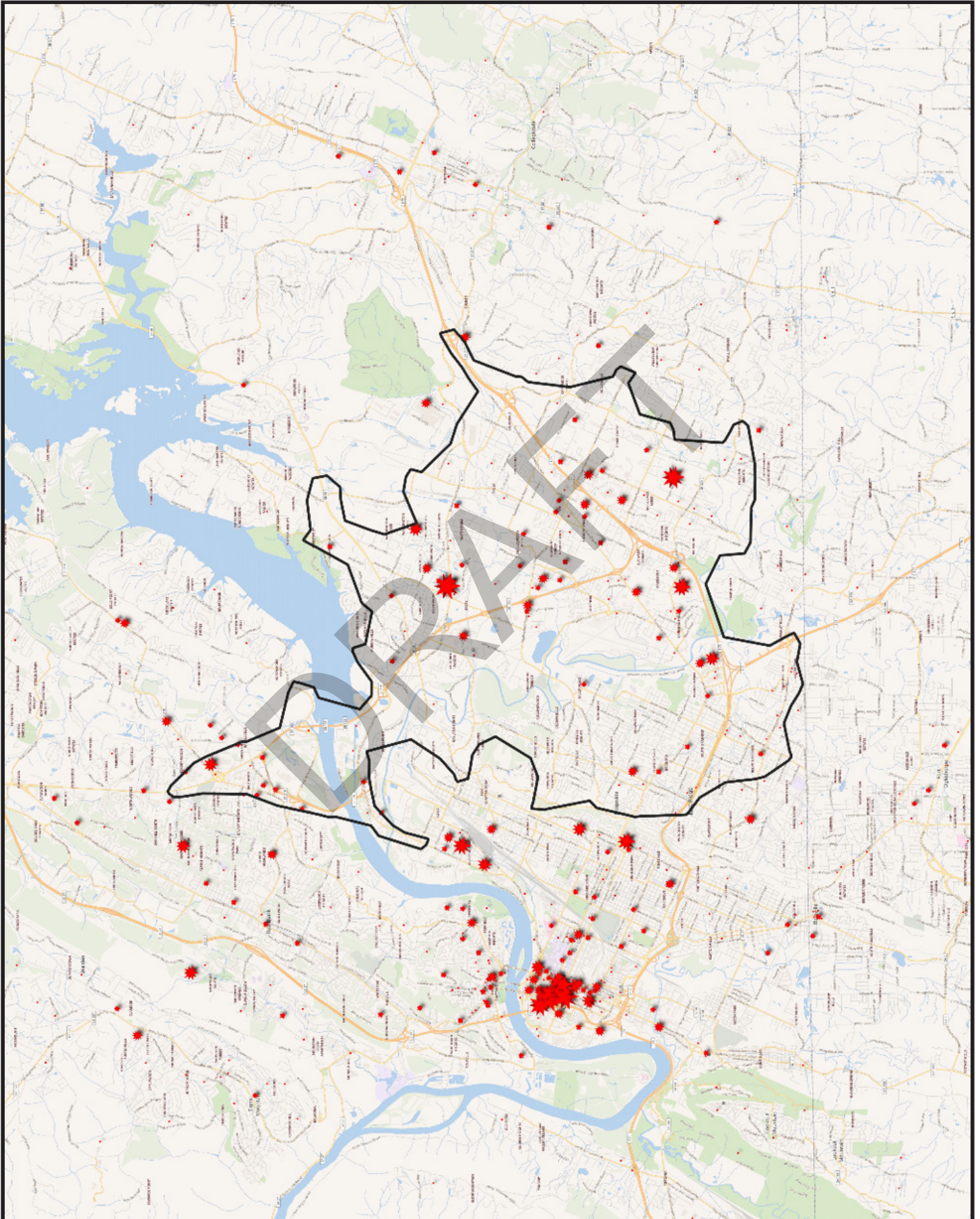
FINANCE AND INSURANCE EMPLOYMENT MAP



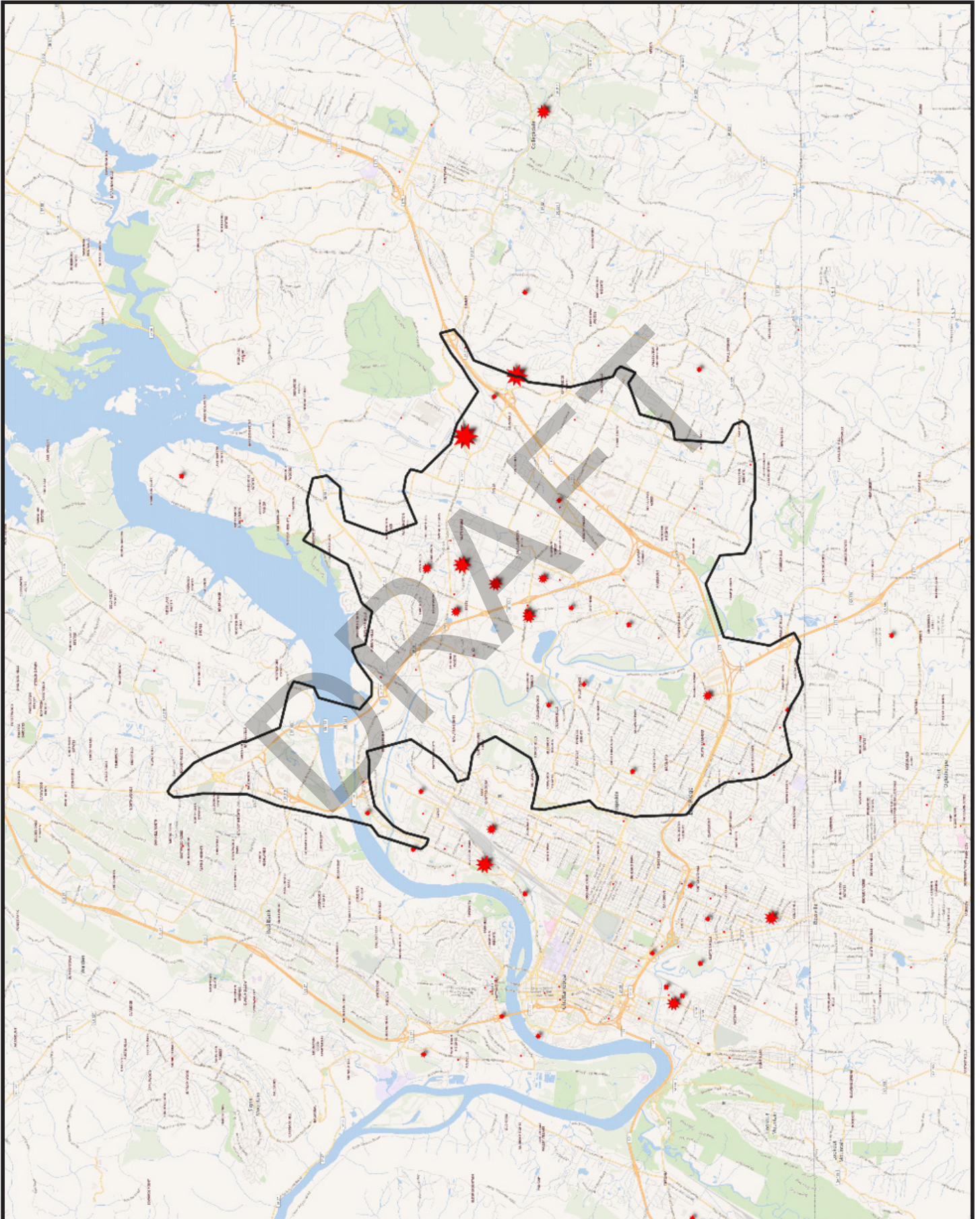
MANUFACTURING EMPLOYMENT CLUSTER MAP



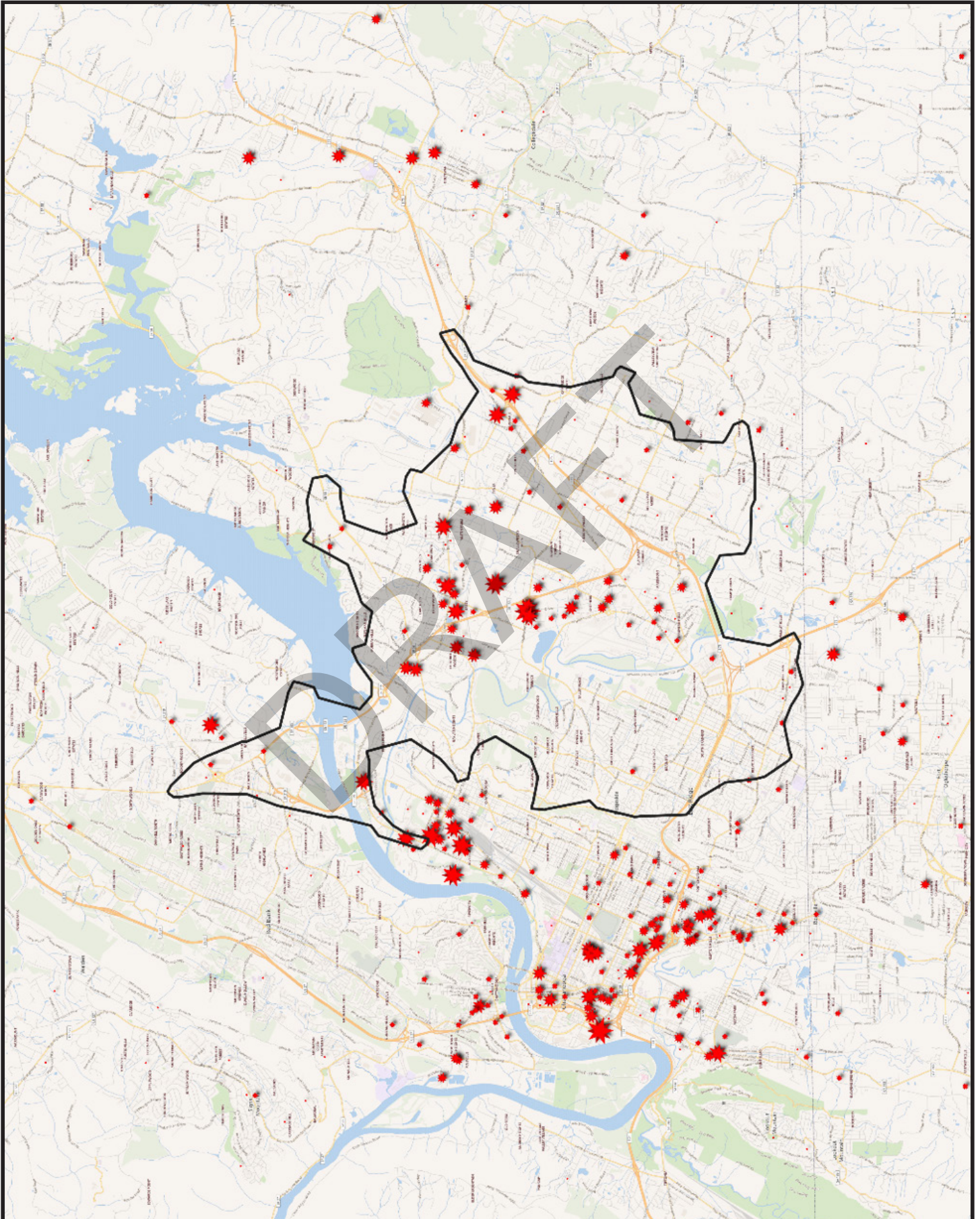
PROFESSIONAL, SCIENTIFIC AND TECHNICAL EMPLOYMENT MAP



TRANSPORTATION AND WAREHOUSING EMPLOYMENT MAP



WHOLESALING EMPLOYMENT MAP



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APPENDIX

**Estimated Project
Costs for Airport
Road Conceptual
Sidewalk**

Estimated Project Costs for:

Airport Road Conceptual Sidewalk

Westside only 11' Lane, Curb & Gutter, 4' Verge & 8' Sidewalk (from Pine Grove Trail to Airport Bus Stop)				
Demolition Items				
DEMOLITION SUBTOTAL				\$ 11,500.00
Construction Items: Sidewalk, Road, C&G, Trees				
CONSTRUCTION SUBTOTAL				\$ 946,087.50
Utility Items: Drainage Infrastructure and Utility Re-location				
UTILITY SUBTOTAL				\$ 586,560.00
Mobilization and Administrative Costs				
MOBILIZATION SUBTOTAL				\$ 25,000.00
PROJECT SUBTOTAL CONSTRUCTION ONLY				\$ 1,569,147.50
ROW Acquisition	14SF	5750 LF	10' ROW	\$ 805,000.00
ROW Plus Construction Cost				\$ 2,374,147.50
Design & Engineering				
Design & Engineering	15%	of construction		\$ 356,122.13
Construction Inspections	10%	of construction		\$ 237,414.75
Construction Contingency	20%	of construction		\$ 474,829.50
PROJECT TOTAL (Design, ROW, Construction)				\$ 3,442,513.88

Disclaimer:

This opinion of probable cost is based on conceptual level planning. It is intended only for use as a preliminary evaluation of the general magnitude of the general costs associated with the project. The material quantities shown herein are subject to change. Unit prices are compiled from job costs of similar projects when such information is available. In the absence of this source of information, other published references may be used to determine approximate unit prices. Variation in items such as raw material costs, labor efficiency, wage rates, and union practices will affect final project costs.

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APPENDIX

Priority Development Area Parcel Maps and Tables

JUBILEE CROSSING

The following table and corresponding map identify the parcels proposed for redevelopment in the Priority Area and provides the ownership data for each parcel. This information is compiled from public records (i.e. property assessor's office and GIS data) and may not represent the most updated info not available via public data bases. Due to the fact that many of the lots are small in size and owned by multiple property owner's assembly of redevelopment lands are often challenging. This Study explores these challenges and provides recommendations to overcome these barriers in Chapter 8 – Implementation & Recommendations of this Master Plan Study.

JUBILEE CROSSING PARCELS			
PARCEL NUMBER	ACREAGE	OWNER	ADDRESS
1	1	Chattanooga Metropolitan Airport Authority	103 Jubilee Drive
2	1	GDC, LLC	5969 Brainerd Road
3	1	Chattanooga Metropolitan Airport Authority	5959 Brainerd Road
4	1	Lighthouse Properties, LLC	5801 Lee Hwy
5	5.1	4-65 Forty-Eight Avenue Inc	108 Honest Street
6	1.24	Cruz Benigno & Paz	121 Honest Street
7	13.24	Chattanooga Metropolitan Airport Authority	128 Honest Street
8	1	Ann Martin	115 Honest Street
9	9.828	Chattanooga Metropolitan Airport Authority	Lee Hwy
10	1	Chen Pun Yee Chenyu, Inc	5709 Lee Hwy
11	1	Chattanooga Metropolitan Airport Authority	5705 Lee Hwy
12	1	Nancy Bennett	5707 Lee Hwy
13	1	Michael David Farlett	5712 Lee Hwy
14	1	Don Flanagan	5716 Lee Hwy
15	3.83	Barbara Wilson	5710 Lee Hwy
16	1.35	Mc Kamey Properties, Llc	127 Honest Street
17	1	Barbara Wilson	5710 Lee Hwy
18	1.04	Bellsouth Mobility Inc	5718 Lee Hwy
19	1	Cornerstone Auto Brokers Llc	5714 Lee Hwy
20	1.854	Xiaopu Li	6025 Brainerd Road
21	1.2	University Property Group Llc	5725 Lee Hwy
22	1	University Property Group Llc	5729 Lee Hwy

Jubilee Crossing Parcels



CHICKAMAUGA TRIANGLE

The following table and corresponding map identify the parcels proposed for redevelopment in the Priority Area and provides the ownership data for each parcel. This information is compiled from public records (i.e. property assessor's office and GIS data) and may not represent the most updated info not available via public data bases. Due to the fact that many of the lots are small in size and owned by multiple property owner's assembly of redevelopment lands are often challenging. This Study explores these challenges and provides recommendations to overcome these barriers in Chapter 8 – Implementation & Recommendations of this Master Plan Study.

CHICKAMAUGA TRIANGLE PARCELS			
PARCEL NUMBER	ACREAGE	OWNER	ADDRESS
1	1.6	Brainerd Hills Chapel	5931 Pine Grove Trail
2	1.4	Brainerd First Church of God, Inc	5921 Pine Grove Trail
3	1	S&M Development LLC	5932 Pine Grove Trail
4	1	Ringold Road Investors LLC	5835 Lee Hwy
5	1	Ramirez Maguadalupe Tellez	5825 Lee Hwy
6	1	Brock Roger	5821 Lee Hwy
7	1	Trotter Jackie M	510 Airport Road
8	1	Mc Kamey Properties LLC	512 Airport Road
9	2.9	Mc Kamey Properties LLC	521 Airport Road
10	1	The Radio Clinic LLC	5915 Lee Hwy
11	1	Levin Dale & Tane	5919 Lee Hwy
12	1	John Blewett	5917 Lee Hwy
13	1	Thomas M Gulas	5911 Lee Hwy
14	1	Wise Properties Tn LLC	5909 Lee Hwy
15	1.7	East Tennessee Enterprises, LLC	5907 Lee Hwy
16	1	Jeanne Dupree-Murphree Trust	5903 Lee Hwy
17	1	City of Chattanooga	5910 Lee Hwy
18	1	Eric P Gulas ETAL	5914 Lee Hwy
19	1	A D D Enterprises Inc	5910 Lee Hwy
20	2.4	Ora Powell	6000 Lee Hwy
21	1	6002 Lee, LLC	5950 Lee Hwy
22	1.39	Nancy Snow Evitt	5964 Lee Hwy
23	1	6002 Lee, LLC	Lee Hwy
24	1	East Tennessee Enterprises, LLC	508 Airport Road
25	1	JSW Properties, LLC	6204 Jim Snow Way
26	1	Thomas Gulas	5913 Lee Hwy

Chickamauga Triangle Parcels

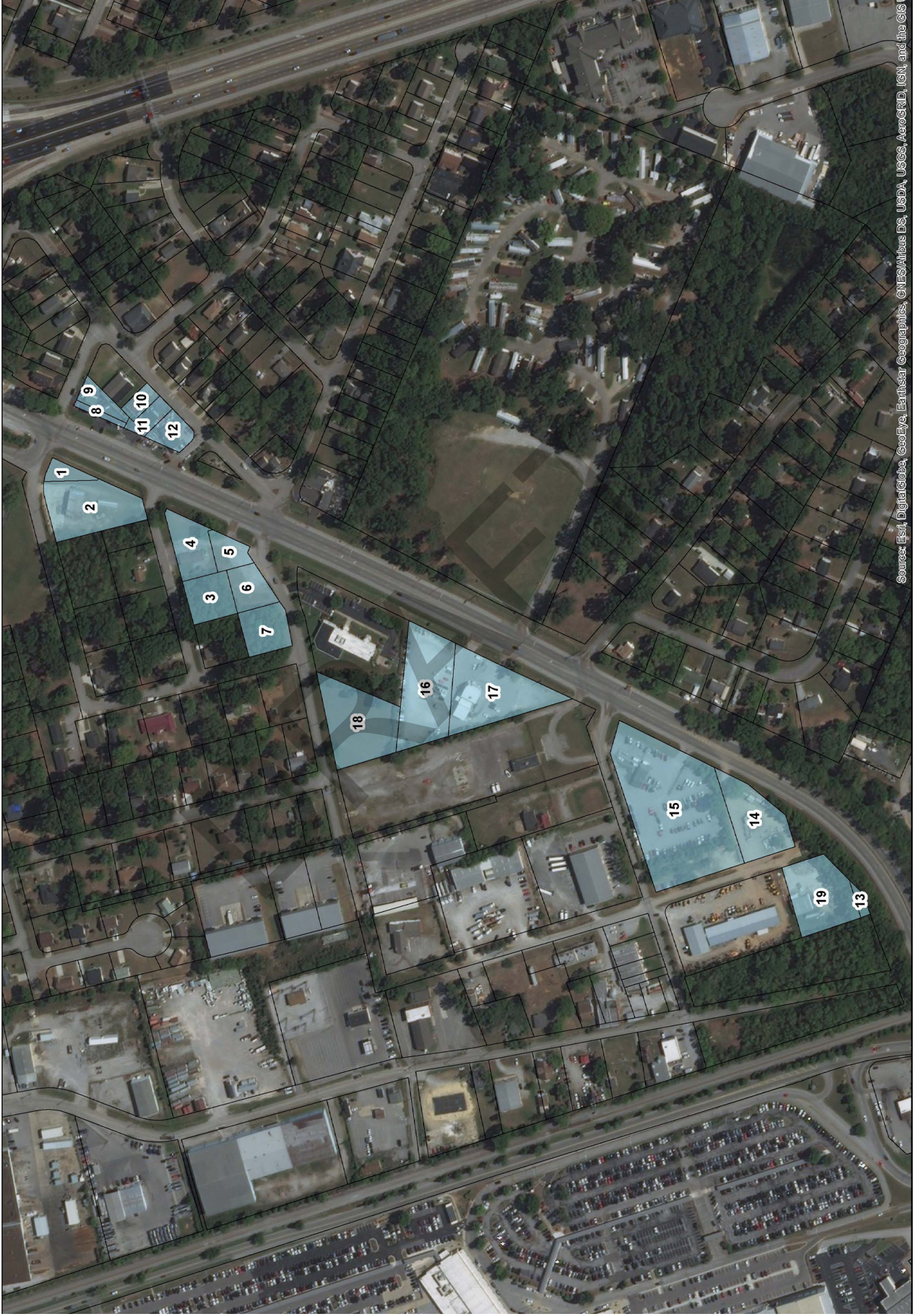


LOVELL FIELD GATEWAY

The following table and corresponding map identify the parcels proposed for redevelopment in the Priority Area and provides the ownership data for each parcel. This information is compiled from public records (i.e. property assessor's office and GIS data) and may not represent the most updated info not available via public data bases. Due to the fact that many of the lots are small in size and owned by multiple property owners' assembly of redevelopment lands are often challenging. This Study explores these challenges and provides recommendations to overcome these barriers in Chapter 8 – Implementation & Recommendations of this Master Plan Study.

LOVELL FIELD GATEWAY PARCELS			
PARCEL NUMBER	ACREAGE	OWNER	ADDRESS
1	1	Steven M Jacoway	Shaw Avenue
2	1	Willie Lee & Geneva Atkins	5910 Shaw Avenue
3	1	Hamzah Inc	Clark Avenue
4	1	Paul Wesley King	5912 Clark Avenue
5	1	Hamzah Inc	1801 Shepherd Road
6	1	Hamzah Inc	5933 Fisk Avenue
7	1	Hamzah Inc	Fisk Avenue
8	1	James Matthew Snowden	Shaw Avenue
9	1	James Matthew Snowden	5944 Shaw Avenue
10	1	Mark & Sharan Jackson	1819 Tuskegee Blvd
11	1	Delta & Pearl Brogden	1910 Shepherd Road
12	1	James Edward & Pearlene Smith	1815 Tuskegee Blvd
13	1	Alvin Thomas	Shepherd Road
14	1	Metro Stone Design Inc	1618 Church Road
15	1	Bonnie Howard	1624 Shepherd Road
16	1	Andrew & Robin Neyman	Shepherd Road
17	1.03	Andrew & Robin Neyman	1705 Shepherd Road
18	1	Andrew & Robin Neyman	5810 Fisk Avenue
19	0.76	Metro Stone Design Inc	1617 Church Road

Lovell Field Gateway Parcels



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4 APPENDIX

Land Use Map

