One of the longer term goals of the Bus Transit to Workplace study is to identify specific strategies that will help improve the accessibility of employment. In particular, the study has taken a case study approach to look at the current availability and utilization of multi-modal transportation networks at different clusters of job sites in Shelby County.
INTRODUCTION

One of the longer term goals of the Bus Transit to Workplace ("Bus Transit") study is to identify specific strategies that will help improve access to regional employment. The study has taken a case study approach to look at the current availability and utilization of multi-modal transportation networks at different clusters of job sites in Shelby County.

Although the information is static, patterns are expected to remain broadly constant, so that lessons identified will be valid for the near future. These case studies can serve as illustrations of both the challenges and opportunities associated with retrofitting an automobile oriented development pattern to multi-modal transportation choices.

The image below shows the five focus areas for case studies. They include the suburban and sprawling Collierville, the industrial developments on President’s Island, the agglomeration of hospitals in the medical district, the rapidly changing area around the airport, and the growing developments in Southaven, Mississippi. Together, these five areas provide a snapshot of the variety of transportation challenges and opportunities in Shelby County.

Case Study Focus Areas
34% of total employment in the Mid-South region is airport related, driven by the Memphis International Airport (MEM). MEM is the world’s second busiest cargo airport, with over 4,000,000 metric tons of cargo passing through the facility annually and over 3,000,000 passengers in 2012. As a result of this strong infrastructure, transportation has become the lifeblood of local businesses that connect to the airport, such as those in logistics and warehousing. In total, the study area for this case study houses over 83,000 jobs.

This document outlines the multi-modal connections available in the Aerotropolis and suggests implementation strategies and common lessons that will make the region more accessible to more people. The analysis takes a closer look at the spatial relationships and transportation linkages in the entire Aerotropolis area as well as data related to specific area employers and their locations.

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* Memphis Airport Summary Report, Executive Summary, 2013: p. 1
*** Airports Council International – North America, Airport Traffic Reports, 2012 http://www.aci-na.org/content/airport-traffic-reports
Case Study Focus Area

The roads bounding the Aerotropolis are East Shelby Drive to the south, Elvis Presley Boulevard to the west, Hickory Hill Road to the east, and Interstate 240 to the north, as shown on the map below.

The building typology and area character varies widely within the focus area. As the map below shows, there are clusters of industrial development as well as residential, and, in many cases residential areas surrounded by industrial areas.

While these areas are well connected via vehicle-oriented arterial roads, in many cases it is difficult to travel between these areas, particularly without a car.

Major industrial areas lie to the northwest and southeast within these bounds. The main access roads into these areas include:
- Millbranch Road
- East Brooks Road
- Airways Boulevard
- Lamar Avenue (Federal Route 78)
- Getwell Road (State Route 176)
- East Raines Road
- Swinnea Road
- Democrat Road
- East Shelby Drive

Of these, the most heavily traveled corridors are Lamar Avenue, Shelby Drive and Elvis Presley Boulevard.

*Memphis Aerotropolis Airport City Master Plan, 44*
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Airport City Master Plan

In 2014, the City of Memphis will complete a U.S. Department of Housing and Urban Development (HUD) Community Challenge funded Master Plan for Airport City.

The plan hinges on HUD’s livability principles, which include provide more transportation choices. Transportation therefore plays a pivotal role as the area works towards the vision of “community, connection, competition and collaboration” outlined in the master plan.

Regional Setting

The figure above shows a comparison between the Aerotropolis regional definition, the Aerotropolis grant study area, and the bus transit study area.

The Memphis Chamber of Commerce provides the following definition for an Aerotropolis:

A city or an economic hub that extends out from a large airport into a surrounding area that consists mostly of distribution centers, office buildings, light manufacturing firms, convention centers, and hotels, all linked to the airport via roads, expressways, and rail lines.*

Master Plan Corridors and Nodes

Memphis’ Airport City Master Plan identified several focus areas of a variety of types. (See also map to right)

- **Freight Corridors:** Lamar Avenue, Airways Boulevard, and Holmes Road to the south have direct access to the airport and BNSF Railway intermodal facility.

- **Multi-modal Corridors:** The Plan recommends Elvis Presley Boulevard, Tchulahoma Drive, Winchester Road, and Shelby Drive as multi-modal corridors. These are recommended to have local transit, on-street bike facilities, and other facilities to accommodate all modes of travel.

- **Activity Nodes:** The plan identifies 14 nodes as centers of both economic activity and community character. They are meant to have a mix of uses oriented toward one of five categories: Town Centers, Urban Villages, Creative Centers, Employment Hubs, and Logistics Hubs.

- **Town Center/Urban Villages:** Are intended as “lifestyle-oriented” uses with elements such as tourist hotels and mixed use developments.

Key Findings

These plans have several implications for the Bus Transit study, summarized below:

- The focus on multi-modal corridors is good, but does not go far enough. Businesses and other establishments located proximate to the multi-modal corridors should help the corridor to succeed by enhancing front-door access for those on foot or a bicycle.

- Activity Nodes will provide important lifestyle enhancements to those working in the area, such as restaurants and/or places to run errands. Connections to these areas, particularly Urban Villages, will be important in ensuring areas are accessible.

- Freight corridors are the lifeblood of many industries along the corridor. Streamlining freight flow to these routes could open up other roads for more complete streets improvements. However, these roads should not become barriers to other modes in the focus area.

A crossing on Elvis Presley Boulevard. The Airport City Master Plan recommends that the City improve the road to accommodate all modes of transportation. The crossing shown here is right by the tourist attractions of Graceland. However, pedestrians must cross several lanes of traffic to get between these places. Moreover, there are no ADA accommodations such as curb ramps in the area.
EXISTING CONDITIONS

Vehicular Access

Interstate Roads
I-240 and I-55/future I-69 provide limited-access routes into the Aerotropolis and beyond. I-240 runs east-west in the Aerotropolis and ultimately circles Memphis, while I-55 runs north-south, continuing to Saint Louis to the north and New Orleans to the south. The traffic count map to the right shows annual average daily vehicular traffic (AADT) as of 2012. This indicates that I-240 has slightly higher levels of traffic than I-55 near the focus area.

Major Roads
There are multiple major roadways in the Aerotropolis area as listed above. These roads are generally four lanes or greater with signalized intersections at other major roads. Some smaller residential roads also intersect these roadways at unsignalized intersections. Most of these roadways do not have continuous sidewalks.

Lamar Avenue, Airways Boulevard East Shelby Drive, and Elvis Presley Boulevard handle more vehicular traffic per day than many other roads in the area.

Minor Roads
There are many secondary roads in the focus area, many of which lead to the residential areas mentioned earlier. Others lead into industrial parks. Generally, however, these secondary roads are not very interconnected, as one can see in the map to the right.

Key Findings
- Most roadways in the study area have capacity for additional vehicles.
- High volume corridors include the interstates Shelby Drive and Winchester Drive as well as Lamar Avenue, and Elvis Presley Blvd.
- The secondary street network does not interconnect, meaning all travelers must rely on arterial connections to travel beyond their immediate neighborhood or employment center. This makes the area difficult to serve with traditional bus service and means anyone not driving must venture to arterials where there is little to no pedestrian or bicycle infrastructure. This type of street network also increases congestion, further exacerbating the challenges facing bus riders, walkers and cyclists.

Tchulahoma Road is an important link with only one lane in each direction.
Transit

MATA provides several routes of bus service in the Aerotropolis. Nine routes meet at the American Way Transit Center. Four routes meet at the Airways Transit Center, where regional Greyhound service is also available.

**MATA Route Details**

There are 10 MATA routes that serve the study area, summarized in the table below. These routes have a wide range of service hours and frequency, which may limit their usefulness for commuting or midday activities.

Route 36, 42 and 69 provide the most robust service, with frequencies under an hour throughout the day. Route 36 serves the northern part of the study area (in light blue in the figure to the right), Route 42 replaces the old Route 43 in the western section of the study area (shown in light blue in the figure to the right), while Route 69 provides a connection from the southwest through the airport to the northeast and the American Way Transit Center. These more frequent routes serve the Elvis Presley Boulevard corridor and the American Way Transit Center area well.

However, the significant developments to the southeast and northwest, including Nonconnah Corporate Center, are left with little to no transit service, particularly in the middle of the day.

### Aerotropolis MATA Service by Route

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>FROM</th>
<th>TO</th>
<th>SERVICE SPAN (M-F)</th>
<th>APPROXIMATE FREQUENCY</th>
<th>WEEKEND SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>North End Terminal</td>
<td>Memphis International Airport</td>
<td>M-F: 5:45 a.m. – 11:45 p.m.</td>
<td>15 min – 1 hr</td>
<td>Limited, Saturday and Sunday</td>
</tr>
<tr>
<td>7</td>
<td>American Way Transit Center</td>
<td>Hickory Hill Rd at Rains Road</td>
<td>M-F: 5:25 a.m.-7:47 a.m. and 3:00 p.m. – 5:00 p.m.</td>
<td>15 min – 45 min. Service gap midday</td>
<td>None</td>
</tr>
<tr>
<td>20</td>
<td>North End Terminal</td>
<td>Tchulahoma Rd at Shelby Dr</td>
<td>5:36 a.m. – 7:00 p.m.</td>
<td>1 hr</td>
<td>Limited Saturday</td>
</tr>
<tr>
<td>30</td>
<td>American Way Transit Center</td>
<td>Peebles Rd at Old Horn Lake Rd</td>
<td>5:40 a.m. – 6:40 p.m.</td>
<td>40 min – 1.5 hr</td>
<td>Limited Saturday</td>
</tr>
<tr>
<td>32</td>
<td>Airways Transit Center</td>
<td>May St at Amity Ave</td>
<td>5:45 a.m. – 10:45 p.m.</td>
<td>25 min – 1 hr</td>
<td>Limited Saturday</td>
</tr>
<tr>
<td>36</td>
<td>North End Terminal</td>
<td>Hacks Cross Rd</td>
<td>5:15 a.m.-7:45 p.m.</td>
<td>25 min</td>
<td>Limited Saturday</td>
</tr>
<tr>
<td>42</td>
<td>Holmes at Airways (old Route 43)</td>
<td>Smithridge Rd at Suncrest Rd</td>
<td>4:44 a.m. – 12:15 a.m.</td>
<td>20-30 min</td>
<td>Saturday, Limited Sunday</td>
</tr>
<tr>
<td>46</td>
<td>North End Terminal</td>
<td>Job Corps Center (Millbranch at McAllister Rd)</td>
<td>5:05 a.m. – 9:00 a.m. and 1:40 pm – 6:51 p.m.</td>
<td>1 hr Service Gap Midday</td>
<td>None</td>
</tr>
<tr>
<td>56</td>
<td>North End Terminal</td>
<td>American Way Transit Center</td>
<td>5:27 a.m. – 11:45 p.m.</td>
<td>11 min – 1 hr</td>
<td>Limited Saturday and Sunday</td>
</tr>
<tr>
<td>69</td>
<td>American Way Transit Center</td>
<td>Rebekh Rd at Fiber Rd</td>
<td>5:30 a.m. – 7:40 p.m.</td>
<td>30 – 45 min</td>
<td>Limited Saturday</td>
</tr>
</tbody>
</table>

### Stop Amenities

MATA marks stops in the Aerotropolis with its standard green bus stop signs. Several locations have shelters with benches available, while others simply have a MATA sign. Most stops are located away from busy roads giving patrons a space to wait for the bus, however the lack of shelters and benches at some stops are a detriment to the customer experience.
NOTE: This is an older version of the map that does not reflect recent service changes MATA has replaced Route 43 (in light blue) with Routes 42 and 46, shown in the table to the left.*

*Aerotropolis MATA Service Map

*Memphis Area Transit Authority http://www.matatransit.com/uploadedFiles/Main_Site/Content/Maps_and_Schedules/System_Map/MATA%20system%20map%20web%20feb%202013.pdf
Stop Activity Analysis
The map on the following page compares stop activity to the locations of the top ten large employers in the focus area. While these employers represent large concentrations of employees, the map shows that stops near these employers are not well utilized. Specific findings include:

- While there are several large employers located in the southeast corner of the study area, both frequency and bus stop usage there is very low
- Bus stop usage at FedEx is low compared to the size of the employer
- Highly utilized stops include Getwell Road at American Way, Winchester Road at Mill Branch Road, and stops along Elvis Presley Boulevard and Shelby Drive
- In general, stops are not highly utilized in the area. However, those located on corridors with higher levels of service have slightly higher levels of activity.

Transit Key Findings
- Several MATA routes serve the study area, providing good coverage
- However, there is limited service to some key employment areas
- MATA frequency, however, is concentrated in the northwest corner of the study area
- Areas with less frequent bus service also have lower ridership
- Stop amenities vary widely in the study area
- Ridership overall in the study area is not very high, particularly given the concentration of employment
Bicycle and Pedestrian Amenities

Pedestrian Amenities

Pedestrian amenities in the focus area are limited. Specific developments, such as the Nonconnah Corporate Center have provided signage and/or sidewalks for pedestrians, but the overall network is disjointed. In addition, the large blocks and wide industrial roads make for unsafe crossing conditions; there are few crosswalks. As a solution to this problem, one company built a sky bridge from one side of the road to another.

Bicycle Amenities

There are a few bicycle facilities in the Aerotropolis; the network is sparse and disjointed. Sections of East Brooks, Mill Branch, Airways and Swinnea Roads have bicycle lanes or signage.

Signage alone is important as it helps alert drivers to the presence of bicycles. However, bicycle facilities such as sharrowes, dedicated bicycle lanes, and cycletraces can encourage more cyclists as they feel safer and more visible in the presence of vehicular traffic.
AREA EMPLOYMENT

Employment Density

There are 83,000 jobs in the focus area, a density of about 2,600 jobs per square mile.

There are about 83,000 jobs in just over 31 square miles in the Aerotropolis, for a density of about 2,600 jobs per square mile. However, as shown in the map to the right, Aerotropolis employee homes are fairly dispersed around the region. Although larger portions of employees live in the areas immediately adjacent to the airport, the facility draws workers from around the region.

Job Classifications

Most of the job classifications in the Aerotropolis are industrial, such as manufacturing, transportation/warehousing, and wholesale trade. The number of workers in retail is also significant. The built environment of the area reflects these job categories, with large “big box” type developments.

The chart below shows that the income breakdown of Aerotropolis jobs is skewed toward lower-income jobs, with only 40% of workers earning over $40,000. A living wage for both DeSoto and Shelby County is about $37,000 for one adult supporting one child. Thus, just over 40% of employees working in the Aerotropolis earn a living wage.

Employer Locations and Shift Times

Many of the top employers in the area are in transportation and logistics, capitalizing on proximity to the airport. The study area’s largest employer is FedEx, which employs 11,000 people at its SuperHub at the Memphis International Airport. FedEx has multiple work sites in Shelby County and beyond, including its world headquarters just south of Germantown.

Employer Concentrations

When compared to the job classification charts on the previous page, the table in the callout box to the right shows that over half of the approximately 31,000 employees in transportation and warehousing (a total of 18,585 employees) are concentrated at six large employers. This is evidence that although the Aerotropolis area is large, jobs in the area are highly concentrated.

Shift Times

The Bus Transit to Work Study included a survey of area employers, detailed in a separate report. 18 Aerotropolis area employers answered the survey, plus a small number of individual workers. The tables below show temporal concentrations of travel patterns, particularly in the following times:

Concentrated travel to focus area:
- 7:00 a.m. - 8:00 a.m.
- 1:30 p.m. - 3:30 p.m.
- 5:00 p.m. - 8:30 p.m.

Concentrated travel from focus area:
- 2:30 p.m. - 5:00 p.m.
- 11:00 p.m. - 2:00 a.m.

Employment Density Key Findings

- Employees come from all over Shelby County and beyond
- Employers in the focus area are highly concentrated
- Shift times do not align perfectly but there are concentrations around some shifts. It may also be possible to adjust the shifts slightly or give workers more flexibility to increase access.
- Transportation and Warehousing is the biggest employment sector in the focus area.

Employer Start and End Times as Reported by Study Surveys
Focus Area Top Employer Locations and Concentrations

A look at the top employers in the focus area shows the concentration of workers in this relatively large area. The top ten largest employers employ a combined total of over 21,000 employees, or over a quarter of the total focus area employment.

In addition, over half of the approximately 31,000 total focus area employees in transportation and warehousing (a total of 18,585 employees) are concentrated at six large employers.

Top Ten Largest Employers

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>TYPE OF BUSINESS</th>
<th>TOTAL EMPLOYEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FedEx Ship Center</td>
<td>Transportation &amp; Logistics</td>
<td>11,000</td>
</tr>
<tr>
<td>United Parcel Service</td>
<td>Transportation &amp; Logistics</td>
<td>2200</td>
</tr>
<tr>
<td>Medtronic, Inc.</td>
<td>Wholesale &amp; Distribution</td>
<td>1540</td>
</tr>
<tr>
<td>Pinnacle Airlines</td>
<td>Transportation &amp; Logistics</td>
<td>1350</td>
</tr>
<tr>
<td>New Breed Logistics, Inc.</td>
<td>Transportation &amp; Logistics</td>
<td>1260</td>
</tr>
<tr>
<td>Swift Transportation</td>
<td>Transportation &amp; Logistics</td>
<td>1150</td>
</tr>
<tr>
<td>Versant Supply Chain</td>
<td>Transportation &amp; Logistics</td>
<td>945</td>
</tr>
<tr>
<td>Jabil Global Services</td>
<td>Technology</td>
<td>765</td>
</tr>
<tr>
<td>Fred's, Inc.</td>
<td>Retail</td>
<td>685</td>
</tr>
<tr>
<td>Ozark Motor Lines, Inc.</td>
<td>Transportation &amp; Logistics</td>
<td>680</td>
</tr>
</tbody>
</table>

Top Ten Largest Employers Locations
AREA CHALLENGES

Infrastructure
The area access assessment revealed several issues and opportunities, summarized in the map to the right and the list below:

Issues:
- **Limited Bus Coverage:** The blue portion of the map to the right shows the network available within a quarter miles of the highest frequency routes, which is the distance that most transit users are willing to walk. However, much of the study area lies outside these bounds.
- **High Vehicular Traffic Corridors:** High-traffic roads, such as Shelby Drive and Lamar Avenue can be dangerous and intimidating for pedestrians.
- **MATA Terminal Connections:** The current MATA terminals are not on designated “multi-modal” corridors.
- **Pedestrian Connectivity:** A discontinuous sidewalk network makes it hard to move around the area safely.
- **Uncoordinated Shift Times:** In an area where many worker schedules depend on strict and often unusual shift start and end times, transportation coordination is difficult when these times do not align.

Opportunities:
- **High Frequency Bus Service:** As shown on the map to the right, current MATA service is fairly high (76-100 trips per day) on several corridors in the northeastern portion of the study area.
- **Highly Used Bus Stops:** Enhanced connections within a five minute walk of these stops (shown in green) will improve connections for current riders and potentially draw future riders.
- **Planned Bike Network:** Several planned bicycle corridors in the study area will connect employment centers to residential areas. A focus on these will help connect local residents to jobs without requiring car ownership.
- **Concentrations of Commuters and Employers:** High percentages of commuters traveling from the same area are good candidates for TDM measures such as park and rides, vanpools, and other tools.
- **Lifestyle Amenities:** Leveraging the tourism clout of Graceland and the “Urban Village” element of the Airport City Plan can provide facilities such as restaurants that will enhance the quality of life for residents and employees alike.
Commute Perceptions

Stakeholder Interviews

The study team was able to speak with representatives from four large employers in the Aerotropolis whose combined employment is over 14,000 individuals. **Most agreed that the primary mode of transportation in the area is driving alone.** Overall, the interviews provided the following observations:

- The ample availability of free on-site and/or covered parking incentivizes driving
- There are no incentives **not** to drive
- A small number of employees do use the bus to get to work
- One employer provides a shuttle from their location in the Aerotropolis to another outside the area
- Existing bus transit to and from the airport area is challenging to use due to times, frequency and the intermittent pedestrian network
- Employees commute to the Aerotropolis area from a wide range of locations
- Carpooling is the most frequently encouraged/discussed TDM measure, but not actively incentivized
- Employers do not communicate with one another to arrange transportation – each operates individually.
- One employer observed that employees like to leave their work site for lunch, yet there is no walkable food outlet to meet that need. However, in the Aerotropolis, there are over 3,000 employees in Accommodation and Food Services.

While overall worker homes are dispersed throughout the region, the map to the right reveals different patterns for a specific employer in the region, specifically:

- Concentration of workers in MS
- Very few workers in downtown Memphis, particularly inside the I-240 loop
- Higher concentrations of workers traveling from farther away

Mode Choice

4% of the responses to the Bus Transit commuter survey were from employees working in the Aerotropolis area. The response breakdown was as follows:

- 15 respondents reported driving alone to work
- One respondent drove with another worker
- One respondent takes the bus

Of these commuters, several reported that the cost of gas, car ownership and maintenance is a financial burden. This is unsurprising, given that **several of the drivers make between $8 and $15 per hour.** Others reported earning more than $15 per hour.
Front Door Access

A closer look at front-door access to large employers in the Aerotropolis shows how the physical environment favors auto access.

The diagram to the right shows the ample parking available at this entrance. Those parking in the lot cross the skybridge on Democrat Road for direct access into the building. Access by all other modes is via the access road to the south.

Challenges include:

- No crosswalk directly to entrance
- Worn crosswalks on three legs of intersection
- No sidewalk on northern side of building entrance, pedestrians must cross driveway
- Building entrance set back from street, thus increasing potential pedestrian-vehicle conflicts and thus the need for pedestrian infrastructure
However, the area does have the following opportunities to facilitate movements by other modes:

- Pedestrian signals on all four intersection legs
- Three crosswalks allow protected crossings to all corners
- Bus shelters and benches enhance ridership experiences

**Recommendations:**

- Create crosswalk on southern leg of intersection
- Add sidewalk connection to front door from street
- Remove fence around parking lot by entrance to shorten walking distances
- Consider signage to help pedestrians and those arriving by bus find entrance.
There are several measures that the Aerotropolis employers and/or regulatory bodies could undertake to increase transportation accessibility. The study team prioritized some examples to explain their applicability to the area. However, please refer to the Transportation Demand Management Toolkit for more in-depth explanations of these concepts:

**Transportation Demand Management**

**Transportation Management Association**

A Transportation Management Association (TMA) could help refine needs, advocate for improvements, and promote alternative transportation services and programs. The Aerotropolis would be an ideal area in which to implement a TMA. For example, shift times in the Aerotropolis have the potential to align and create opportunities around which to organize new modes of travel to work. However, without an entity focused on such opportunities, they will continue to be ignored.

To form a TMA, a government entity or large employer can help create the TMA and provide the initial funds to hire a coordinator dedicated to the effort. As the TMA gains members, they can contribute dues to the funding for the organization.

**Vanpools**

Vanpools are a type of ride-sharing, similar to carpooling, but typically involving more people and a shared vehicle. In most cases, vans are owned or leased by a sponsoring organization and riders share the cost of operating the vehicle to and from work. Vanpools have had the most success where employees travel longer distances along corridors with limited or no existing transit service.

Shift workers who are traveling from homes that are in the same area are good candidates for vanpools. As the case study analysis showed, large employers often draw employees from the same areas.

**Pocket Park and Ride**

A traditional park-and-ride is a parking lot facility with connections to an alternative method of transportation that allows commuters and other people heading into city centers or employment hubs to leave their vehicles and transfer to bus, rail, or carpool for the remainder of the ride. “Pocket” park-and-rides are informal parking lots/garages that may be used for another purpose (such as a church parking lot) on certain days of the weekend, but are used for commuter parking during week days.

The high frequency bus service in the northeast corner of the study area provides a good backbone for the development of a pocket park and ride. Employees could travel to a stop on Elvis Presley Boulevard or Mill Branch Road and travel the rest of the way in to work via bus. This program could be coupled with Employer Subsidized Transit Passes to further decrease the burden of transportation cost.

**Aerotropolis Corridors**

A diagram of the Aerotropolis Corridors is shown, highlighting potential routes and opportunities for improved transportation access.

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*Image credits:* (Assumes relevant images are present in the document)
Spotlight on Employer: FedEx

FedEx is the largest employer in the Aerotropolis area with nearly 11,000 employees. Most of these employees work at the FedEx sorting facility on Democrat Road. There are a variety of functions and employment shifts at the location, but a large part of the work is associated with sorting packages with work largely oriented around two shifts: 8:00 AM to 5:00 PM and 11:00 PM to 4:00 AM. Employee addresses were collected and randomized within Census blocks to preserve privacy and color-coded (orange for day shift and purple for night shift) but mapped with enough detail to understand transportation demand.

As shown, lots of workers live close to the FedEx sorting facility, especially “as the crow flies”. There is also no apparent difference between the residences of employees working during the day and those working at night. As a result, transportation options that work for the daytime employees should also work for people working the night shift.

Democrat Road is not a multi-modal corridor; it has two lanes of traffic in each direction, no sidewalks and no crosswalks or pedestrian signals. In addition, there are a large number of parking lots along the roadway, especially due to the recent relocation of the rental car facilities from Democrat Road to the airport. The main entrance to the FedEx facility, however, is located close to Democrat Road and easily accessible from the street for people traveling east. In addition, there are a handful of MATA bus routes that operate along Democrat Road and some of which have a stop directly in front of the FedEx building.

- Route 2 Madison – fairly frequent service but stops are nearly 1.5 miles away.
- Route 30 Brooks – less frequent service, but stops directly in front of FedEx’s facility.
- Route 4 Walker - nighttime service with stops directly in front of FedEx facility.
- Route 32 East Parkway – fairly frequent north-south service to the Airways Terminal. Five trips travel off the main route to stop in front of the FedEx sorting facility

Opportunities to make FedEx site more accessible include:

- Designate bike routes between adjacent neighborhoods and Democrat Road.
- Install a crosswalk in front of the FedEx facility with a pedestrian activated signal.
- Build bus pull-outs and shelters in front of the FedEx facility, on both sides of the road.
- Operate a shuttle service between the Airways to American Way Terminals and travel via Democrat Road.
- Operate community shuttles from neighborhoods east and west of the airport could be designed to bring workers from the neighborhoods directly to the FedEx facility.
Infrastructure

From tweaks to large-scale changes, adjustments in the available infrastructure can influence the transportation choices people make.

Pedestrian Facilities

A walkable environment gives people more transportation choices and improves quality of life. A well-designed network of streets and sidewalks is essential for pedestrian accessibility as providing pedestrian connections allows people to make connections between transportation modes as well as between neighboring land uses. Investments in the pedestrian environment have positive impacts on all road users. In many places in Memphis, basic pedestrian infrastructure is lacking, yet pedestrian activity persists.

In this focus area, employers should focus on pedestrian facilities as a means to provide employees with choices in how they get to work. As the Front Door Access analysis showed, although the infrastructure is present, connections are incomplete for all except vehicular users. As the area grows and changes, care must be taken to complete these connections.

Connect Networks

As the diagrams below show, the Airport City Master Plan and other planning efforts have plans to create multi-modal networks in the Aerotropolis. These efforts should prioritize the following connections:

- An extension of the designated multi-modal network to provide connections to the two large MATA terminals in the area
- Focus on bicycle links that can allow local residents to access employment areas. This will not only decrease the transportation burden for local residents, but may also be a draw for additional people to live and work in the area.

Bicycle Facilities by Area Type

[Click to view map of bicycle facilities by area type]
Transit

There are opportunities to make relatively minor changes to transit service to better serve employment, or offer slightly different types of transit services, including flex service or community shuttles.

American Way Terminal – Airport – Democrat Road - Airways Terminal Shuttle

MATA currently operates fairly frequent service to the American Way Terminal and, to a lesser extent to the Airways Terminal. Both of these facilities provide clean, climate controlled and safe places for people to connect to other routes. However, there are limited opportunities to get to from these terminals to major employers in the Aerotropolis area, including the Memphis International Airport. One potential solution would be to use traditional (large bus) MATA service to bring people to the terminals and then operate a shuttle between the terminals, the Airport and Democrat Road.

Neighborhood Flex Routes from American Way Terminal and Airways Terminal

Flex Routes from American Way Terminal and Airways Terminal

There are several employment areas, business parks and residential neighborhoods within the Aerotropolis area that are only accessible by car. In most cases, the areas have low density development such that demand may not be sufficient for regular fixed route transit service. The lack of service, however, is frustrating because the areas should be accessible. One potential solution would be to implement flexible services (or flex routes) that use smaller vehicles to transport people between MATA terminals and business parks and residential neighborhoods. Flex services typically have two or three fixed time points (i.e. depart from Airways Terminal on the hour and have a pick up at Nonconnah Business Park at 0:30), but can travel off-route to pick up and drop off passengers as requested. This type of flexible service would be a different type of service than MATA has historically provided and would require slightly different infrastructure, including dispatching functions and smaller vehicles. However, it offers a potential solution for short trips between low density areas. Setting up flex routes and airport shuttle service (see recommendation above) are best implemented in conjunction with a series of trunk routes that bring people to key points (MATA terminals) and using small vehicles to distribute them around the Aerotropolis. Likewise, people could use the flex routes to get to the terminals and then to other parts of the MATA service area.

Full implementation, therefore, would include a combination of new flexible routes that service the Aerotropolis area and strengthened MATA trunk routes that provide direct service into the Aerotropolis. For example, MATA could expand crosstown service from the Raleigh/Frayser neighborhood to Airways Terminal traveling via Hollywood Street, so riders could transfer to get anywhere within the Aerotropolis. Another opportunity may be to shorten Route 30 Brooks to terminate at the Airways Terminal and encourage riders to Flex routes to get to their final destination. As MATA saves service hours by shortening Route 30, they should reinvest those hours to increase Route 30’s frequency at peak times and/or extend the hours of operation.

Expanded Service on Route 30 Brooks

MATA Route 30 Brooks is one of the main transit routes that brings people to and from the FedEx headquarters on Democrat Road. Route 30 also links Airways and American Way Terminals so riders connecting in from other routes have opportunities to transfer and get to FedEx. The main challenge with Route 30 as it is currently configured is the lack of service. Route 30 currently operates with 40 minute frequencies during the morning commute time but buses are less frequent for the rest of the day, with some trips spaced more than an hour apart. Ideally MATA could invest more resources into Route 30 to bring frequencies up to every 30 minutes during the three peak periods related to commute shifts, namely between 7:00 a.m. and 8:00 a.m., between 1:30 p.m. and 3:30 p.m. and between 5:00 pm and 8:30 p.m. Additional trips during this time period would help people get to/from FedEx headquarters more easily as well as support other work trips. Investing in the day time service is the first priority, however, data from employers and employees also suggests a need for some service later in the evening to support the end of the second shift and beginning of the third shift (between 10:30 p.m. and 11:30 p.m.). Expanding Route 30 would help address this issue and could help people connecting from neighborhoods to the west of the Aerotropolis. Without an investment in other MATA services, however, expanding the hours of service would be a start in the right direction, but its impact would limited to the Route 30 service area.

Create park and ride connections from Southaven and/or Olive Branch to Airways or American Way Terminals.

Like the residential areas located within and adjacent to the Aerotropolis, people living in DeSoto County are cut off from employment located just a few miles from them. There are potential solutions to create transit connections between communities in northern DeSoto County and the Aerotropolis with park and ride lots and service extensions, potentially along Airways Boulevard and/or New Getwell Road. If this type of service is implemented as part of MATA’s service, however, would require considerable outreach with DeSoto County.
Concentrate Aerotropolis service around existing shift times (5:00 AM – 8:30 AM) and (1:00 PM to 5:30 PM), plus evening shifts starting at 10:30 PM.

Data shows that there are concentrations of shift start times for Aerotropolis employers. These times are between 5:00 AM and 8:30 AM; 1:00 PM to 5:30 PM and between 11:00 PM and midnight. There is significantly less travel demand from employment in the late morning and early evening. As a result, MATA service to the Aerotropolis could be concentrated during the critical times work times, recognizing that these are times when workers need to be on-site and ready to work. Adjust the schedule to meet this demand may be somewhat challenging given the shifts are somewhat outside of the traditional work schedule. However, catering to this demand should help attract more riders and improve service effectiveness.

Provide commuter oriented transit connections to Southaven and/or Olive Branch

Express bus trips offer non-stop or very limited stop one-seat service (no transfers required) between a suburban or small urban park-and-ride facility and a major regional employment destination. This type of service tends to attract primarily daily commuters traveling to and from work or school. It runs faster than normal bus service because it doesn’t make as many stops and usually runs along quicker routes, such as freeways.

Create a “how do I get there” transit map for the Aerotropolis.

Create a special map that details transit connections available to major employers in the Aerotropolis. The map could highlight major employers and show transit routes that travel close to the major employers and identify arrival and departure times. Map could be part of a package of materials distributed to Aerotropolis employers for new employee information and used as part of developing employee commute plans.

Additional Solutions

Additional TDM solutions to explore in the Aerotropolis include:

- Employer Subsidized Transit Passes
- Regional Transit Funding
- Bicycle Parking