



CHAPTER 5 TRANSPORTATION





Chapter 5 – Transportation

INTRODUCTION

Transportation facilities have had a profound effect on the development of Augusta and Richmond County. From pre-colonial times to the present trails, road, railroads, waterways, and air service have all influenced the timing, location and extent of development in the community.

This chapter includes an inventory and assessment of transportation facilities and services in Augusta and Richmond County. Transportation facilities include roads, sidewalks, bikeways, airports, railroads, public transportation and parking facilities. Transportation services include the public transit system.

ROAD NETWORK

Augusta-Richmond County is served by a street network that includes two interstate highways, four federal highways, ten state routes, and numerous local roads. Streets have varying functions, so the street network is generally divided into four categories: freeways, arterials, collectors and local streets. Design standards vary from one functional class to another. For example, an arterial road has more travel lanes, a higher operating speed, and fewer curb cuts than a local street. The basic characteristics of the functional classification system are outlined below.

Functional classification is not static. As roads have been widened or extended, their functional classification has changed to reflect their new role. Tobacco Road, Windsor Spring Road, Gordon Highway, Doug Barnard Parkway, Deans Bridge Road, Jimmie Dyess Parkway, Wheeler Road and Riverwatch Parkway are some of the major roads that have either been widened or constructed in the last 20 years. Planned road widening projects on Alexander Drive, St. Sebastian Way, Greene Street, Mike Padgett Highway (SR 56) and Windsor Spring Road will result in other changes to the system. It is desirable to coordinate right-of-way acquisition, land-use planning, access and zoning activities with this change in mind.

Interstates, Freeways and Expressways

Freeways are limited access, multi-lane, divided roadways carrying high-speed traffic. Two freeways - Interstate 20 and Interstate 520, serve Richmond County. I-20 crosses the northwest corner of the county and connects Augusta to Columbia, South Carolina and Atlanta. Interchanges are located at River Watch Parkway, Washington Road, I-520, and Wheeler Road. A half diamond interchange is under construction at I-20 and Walton Way Extension and scheduled to open to traffic in October 2007. The River Watch Parkway interchange opened in 1993 and the Wheeler Road interchange opened in 1998. Other I-20 interchanges are located in Columbia County and Aiken County and connect to other parts of the metropolitan area.

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Interstate 520 (a.k.a. the Bobby Jones Expressway) is a circumferential route extending from I-20 to Laney-Walker Blvd. Interchanges are located at I-20, Wheeler Road, Wrightsboro Road, Gordon Highway, Deans Bridge Road, Windsor Spring/Peach Orchard Rd., Mike Padgett Hwy. (SR56), Doug Barnard Pkwy., (SR 56 Loop), and Laney Walker Blvd. The section between Doug Barnard Parkway and Laney-Walker Blvd. opened to traffic in July 1998. The section of the Bobby Jones between I-20 and Gordon Highway was widened from four to six lanes in 2001. A 0.89-mile extension of Bobby Jones, from Laney Walker Blvd. to the Savannah River was completed in June 2004.

Phase I of the Palmetto Parkway, as Interstate 520 is called in South Carolina, also opened to traffic in June 2004. Phase I extended Interstate 520 across the Savannah River to a new interchange with U. S. 1 in North Augusta, a distance of approximately 2.5 miles. Phase II of the Palmetto Parkway is under construction and scheduled for completion in July 2009. The second phase of the project will extend Interstate 520 another 6 miles, from U. S. 1 to Interstate 20 at Exit 5, thus completing the interstate highway loop around the Augusta / North Augusta area.

Riverwatch Parkway (SR 104) is a four-lane, divided, controlled access facility that currently extends from 15th Street near down Augusta to Pleasant Home Road near the Columbia County line. The first phase of Riverwatch, between 15th St. and I-20, opened to traffic in 1991. The second phase, from I-20 to Pleasant Home Road, was completed in 1993. A third phase, extending the parkway 0.57 miles to the Baston Road intersection, was completed in 2004. Riverwatch Parkway was built to relieve congestion on Washington Road and carries vehicular traffic to and from west Augusta and Columbia County.

The John C. Calhoun Expressway is a four-lane divided, limited access road that links Washington Road to Greene Street in downtown Augusta. Built in the mid-1970s as an alternative route to and from downtown, the Calhoun Expressway includes a half-diamond interchange with 15th Street and a split-diamond interchange with Eve Street and Crawford Avenue. When first constructed the expressway extended from Washington Road to 15th Street. In 1984 the elevated part of the expressway, between 15th and Greene Streets, was opened to traffic.

Arterials

Arterial roads are designed to move large volumes of traffic through and across an urban area, and collect and distribute traffic to and from smaller streets. Several arterials, such as Washington Road, Wheeler Road, Wrightsboro Road, Deans Bridge Road and Peach Orchard Road, have interchanges with I-20 and I-520. Other arterials, such as 13th Street, Sand Bar Ferry Road, and Gordon Highway, provide connections across the Savannah River into Aiken County.

The Federal Highway Administration's Highway Functional Classification System splits arterial roads into two subgroups: major and minor arterials. Major arterials, also known as principal arterials, move larger volumes of traffic over long distances at high speeds. In Richmond County there are 18 roads or road segments classified as major or principal

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arterials. Examples include Washington Road, Jimmie Dyess Parkway, Gordon Highway, Peach Orchard Road, Mike Padgett Highway, Doug Barnard Parkway and Tobacco Road.

Minor arterials serve trips of moderate length at lower speeds than major arterials. Traffic volumes are lower and cross streets and driveways are spaced closer together than on major arterials. There are 38 road segments classified as minor arterials in the county. They are scattered throughout the community and include Broad St., Laney-Walker Blvd., Beckman's Rd., Richmond Hill Rd., and Old Waynesboro Road.

Collectors

The primary function of collector roads is to move traffic from local streets to arterials and freeways. Collectors also provide access to some traffic generator, such as shopping centers, schools, and recreation facilities. Traffic volumes and speeds tend to be lower than on the arterials. Under FHWA's Functional Classification System there are currently 53 roads or road segments in Richmond County classified as collectors. Examples include East Boundary, James Brown Blvd., Rosier Rd., Willis Foreman Rd., Golden Camp Rd., and Alexander Drive.

Local Roads

The primary function of local roads is to provide access to adjoining property for both vehicles and pedestrians. Generally, local roads are 2-lane facilities on a 50-60-foot right-of-way that carry low traffic volumes and have frequent curb cuts. All roads not classified as collectors, arterials or freeways are considered local roads. In Richmond County there are over 1,000 miles of local roads.

RAIL TRANSPORTATION

Passenger rail service is not available in Augusta at the present time. In 1999 the Georgia Transportation Board approved a long-range plan to provide inter-city passenger rail service between Atlanta and other major cities in the state.

Freight service is provided by two railroads: Norfolk Southern and CSX Transportation, Inc. The Norfolk Southern main line track enters the City from the north, crossing the Savannah River and then continuing through downtown on the right-of-way of Sixth Street. The main line continues in a southeasterly direction through the rest of the City and on toward Savannah. Norfolk Southern has two railroad yards in the City: one (the main classification yard) is approximately a mile south of downtown and a second (Nixon Yard) is south of Augusta Regional Airport near International Paper Company.

The CSX main line crosses Augusta in a roughly east-west direction. This line provides connections to Spartanburg, S.C. and Savannah, GA. A second CSX line, formerly owned by the Georgia Railroad, connects to Atlanta. Beltline service is provided to a number of industries. The CSX main railroad yard is located off Laney-Walker Blvd. southeast of

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downtown. The yard covers approximately 117 acres and consists of an inbound receiving yard and an outbound classification yard. A second yard, the Harrisonville Yard, is located on 48 acres between Wrightsboro Road and Olive Road.

The January 2008 draft of the Freight Profile for the Augusta Regional Transportation Study indicates that rail cargo accounts for seven percent (7%) of the all freight in the region by weight (2006 TRANSEARCH). Some of the leading commodities shipped out of Augusta are clay, concrete, glass and stone products, while the leading commodity terminating in Augusta area is lumber and wood products.

At-grade railroad crossings are located on many roads in the city. The crossings have been a part of community life for many years, and solutions have been sought to reduce the inevitable conflicts between railroad, motor vehicle and pedestrian traffic. At the same time, availability of rail service is a major attraction for new industry and maintaining existing industry.

TRUCKING, PORT FACILITIES AND AVIATION

Trucking

Freight traffic on the roads in Augusta-Richmond County includes the movement of goods into, out of, within and through the community. The January 2008 draft of the Freight Profile for the Augusta Regional Transportation Study indicates that truck cargo accounts for 93% of the all freight in the region by weight.

In 2006, approximately 101.2 million tons of freight was transported to, from, within, and through the Augusta region via truck. Freight moving through the area makes up the most significant portion of the truck freight in the Augusta region, accounting for 65 percent of freight by weight. This high volume is attributed mostly to shipments headed to / from nearby regions such as Atlanta, Savannah, Macon, Albany, Columbia, and Charleston.

Another thirteen percent of the truck movement is outbound freight and 16 percent is inbound freight movement. Freight movement within the region makes up the smallest share of the movement by weight (6 percent). Given the short-distance nature of these shipments, they impact local roadways greatly. The movement split for the region is similar when looking at truck tons.

The top five commodity groups accounted for 71 percent of the total truck flows, or 72 million tons, by weight. These commodity groups consisted of nonmetallic minerals (27 percent); secondary moves (13 percent); lumber or wood products (12 percent), clay, concrete, glass, or stone (12 percent); and petroleum or coal products (7 percent).

Freight users include manufacturing facilities, retail establishments, airports, office buildings, rail yards, warehouses, and distribution centers that contribute to the flow of cargo in the region. A large number of Augusta's freight users are located inside the I-520 loop. Others

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are located in close proximity to I-20. The cluster of freight users inside the I-520 loop is located in close proximity to rail lines. A growing number of freight users, primarily manufacturing facilities and commercial establishments, are located outside of the I-520 loop.

In terms of tonnage, the interstate highway system is responsible for moving the largest amount of truck traffic. I-20 provides primary truck access to and through the Augusta area. I-520 provides radial access to most areas of Augusta from I-20 on the west side to U.S. 1 in North Augusta, South Carolina. The other major routes in Augusta-Richmond County used by truckers include U.S. 1, U.S. 25 BUS, U.S. 278, GA 4, GA 28, and GA 104. There are four major roadway bridges across the Savannah River. I-20, U.S. 1, U.S. 25 BUS, and I-520.

According to information in the Georgia Statewide Freight Plan, trucks using I-20 carry about 20-50 million tons of freight per year. Count data from GDOT's permanent traffic recorders in Augusta-Richmond County show that annual average daily truck traffic (two-way) on I-20, between I-520 and Washington Road is 14,572 trucks. The segment of I-20 between Riverwatch Parkway and the Savannah River Bridge registered 7,244 trucks per day. On I-520, the recorder located between Gordon Highway (US 78, 278) and Deans Bridge Road (US 1) recorded 4,878 trucks per day on average.

Port Facilities

The closest port facility to Augusta is located in Savannah. Origin and destination data included in the draft ARTS Freight Profile (January 2008) indicates that some of the truck traffic originated from or was destined for a port facility. The results of a 2006 origin-destination survey done by GDOT at the eastbound I-20 weigh station in Columbia County show that approximately two percent of the trucks originated at a port facility, and five percent were destined for a port facility.

Aviation

There are two airports in Augusta: Augusta Regional Airport at Bush Field and Daniel Field. Augusta Regional Airport is a 1,500-acre commercial airport located at the intersection of Tobacco Road and Doug Barnard Parkway (SR 56 Spur). Augusta Regional is also used for air cargo and charter operations, and acts as a commercial and military pilot training exercise facility. Major facilities include an 8,000-foot primary runway, a 6,000-foot crosswind runway, both an airline and general aviation terminal, an air traffic control tower, and a facilities maintenance office. Augusta Regional Airport is operated under the direction of the 13-member Augusta Aviation Commission.

Two commercial carriers serve Augusta Regional: Atlantic Southeast Airlines, and US Airways Express. Atlantic Southeast provides service to Atlanta's Hartsfield International with seven flights per day, while US Airways Express flies to Charlotte International with six flights per day. The January 2008 draft of the Freight Profile for the Augusta Regional Transportation Study indicates that air cargo accounts for less than one percent (308 tons) of the all freight in the region by weight (2006 TRANSEARCH). Fifty-three percent of air

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cargo trips are outbound trips to other regions. Forty-four percent of air cargo flows are mail or contract traffic. Thirty percent are miscellaneous mixed shipments. Other air cargo shipped to or leaving the Augusta Regional Airport includes chemicals or allied products, transportation equipment, electrical equipment, and machinery.

Daniel Field, located on a 152-acre site at the intersection of Wrightsboro Road and Highland Avenue, is a general aviation airport. Major facilities include two runways, two hangars, a ten bay T-hangar, outdoor tie-down areas, and a control tower for Masters Week operations. Daniel Field is one of the oldest airports in Georgia, dating back to October 1927 and was once the commercial airport for Augusta. Charter flights, flight training, airplane storage, fuel and maintenance services are provided by the FBO, Augusta Aviation Inc. The airport is operated under the direction of the 13-member General Aviation Commission.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle and pedestrian facilities are important alternative modes of transportation in any community. Bicyclists use the road network on a regular basis, but currently there are no designated bike lanes, routes or bikeways in the county. Off-road facilities used by cyclists include the Augusta Canal towpath and the Savannah River levee. A fairly extensive network of sidewalks is present within the old city limits, but there are very few in the neighborhood and commercial centers of the former county. Sidewalks are located along some sections of the arterial and collector roads, but do not form a network that pedestrians can utilize. Sidewalks also are located adjacent to many of the public schools. Off-road facilities used by walkers and joggers include the Augusta Canal towpath, Savannah River levee, and paved trails at some county recreation centers. Where sidewalks are not present, especially on local or neighborhood streets, pedestrians simply walk in the road.

PUBLIC TRANSPORTATION

Augusta Public Transit (APT) currently operates 10 fixed routes within the city with a peak fleet of 13 buses. The system is primarily radial with 8 routes terminating at the Transfer Facility at 1546 Broad Street. The remaining two routes, Barton Chapel and Lumpkin Road, terminate at a transfer point at K-Mart shopping center located southwest of downtown. Service frequency and schedules vary, but generally APT buses run from about 6:00 a.m. until 6:00 p.m., Monday through Friday. Eight of the routes operate on Saturday. No service is provided on Sunday.

APT also operates Paratransit services for disabled persons, in compliance with the Americans with Disabilities Act of 1990. In accordance with guidelines issued by the Federal Transit Administration (FTA), APT provides Paratransit service within 3/4 mile of each fixed route during the same operating hours as the local service. Paratransit service is available only to certified eligible passengers. Currently, APT has 22 motor buses and seven Paratransit vehicles available for maximum service.

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APT also provides non-urban (rural) transit service in the part of the city generally south of I-520 (Bobby Jones Expressway). This includes many of the fast-growing suburbs of south Augusta, as well as the more rural parts of the city in the vicinity of Hephzibah, Blythe and the McBean area. As with the Paratransit service, riders must make an appointment in advance and be ready 30 minutes before the transit van is scheduled to arrive.

APT operates 8 of its routes from a Transfer Facility at 1546 Broad Street, located just west of downtown Augusta. Opened in 1991, the Transfer Facility includes a large indoor waiting area with benches, an information desk, restrooms, water fountains, a soft-drink vending machine, and a work area for APT staff. Covered breezeways flank both side of the building, and eight saw tooth parking bays provide space for the loading and unloading of bus riders. There are also parking spaces for 20 vehicles.

APT offices and maintenance garage are housed in a facility located at 1535 Fenwick Street, about four blocks from the Transfer Facility. There are six maintenance bays and a detached building for vehicle cleaning at the garage. APT administrative and operations staff is housed in a 5,000 square foot building erected in 1993 as part of a renovation project. The property includes parking spaces for buses, Paratransit vans, and staff and visitor vehicles. During the spring of 2002 the vehicle parking area was expanded to accommodate the Paratransit vehicles.

The Barton Chapel and Lumpkin Road routes terminate at a transfer center at K-Mart shopping center located about five miles southwest of downtown. The transfer center is a dedicated area on the outskirts of the shopping center property and consists of two small sheltered waiting areas for passengers and one large shelter with a capacity of 30 passengers. Bus shelters are located along all of the fixed routes. In addition to benches, the shelters feature space for advertising and trash receptacles.

ROAD USE AND CONDITIONS

This section summarizes the travel characteristics of city residents and the existing conditions of the road system. Road and bridge improvements are important to the community's future because they influence land use, economic development, and the quality of life.

Travel Characteristics

Sample data tabulated as part of the 2000 Census reveals some information about the travel characteristics of Richmond County households. Of the 81,288 households, approximately 86% have at least one vehicle (car, truck) available for use. The remaining 11,268 (14%) households had no vehicle available for use. These figures are not much different from 1990, when 87% of the households had at least one vehicle available for use by members of the household.

Data on means of transportation to work indicates a strong preference for Richmond County residents to commute by themselves (see Table T-1). More than 74% of workers drive to

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work alone. Another 12% carpool to work. Eight (8) percent walk to work and approximately one percent use public transportation. The local bus system is the predominant public transportation mode in Augusta and Richmond County. Overall, the means of transportation to work remains similar to what it was in 1990 and 2000. In 1990, approximately 73% of workers drove alone, 15% carpooled, and 5% walked to work. In the year 2000, an estimated 75% of workers drove alone, 16% carpooled, and 6% walked to work. The number of people working at home more than doubled, from an estimated 1,156 in 1990 to 2,646 in 2006, but remained a relatively small percentage of all workers.

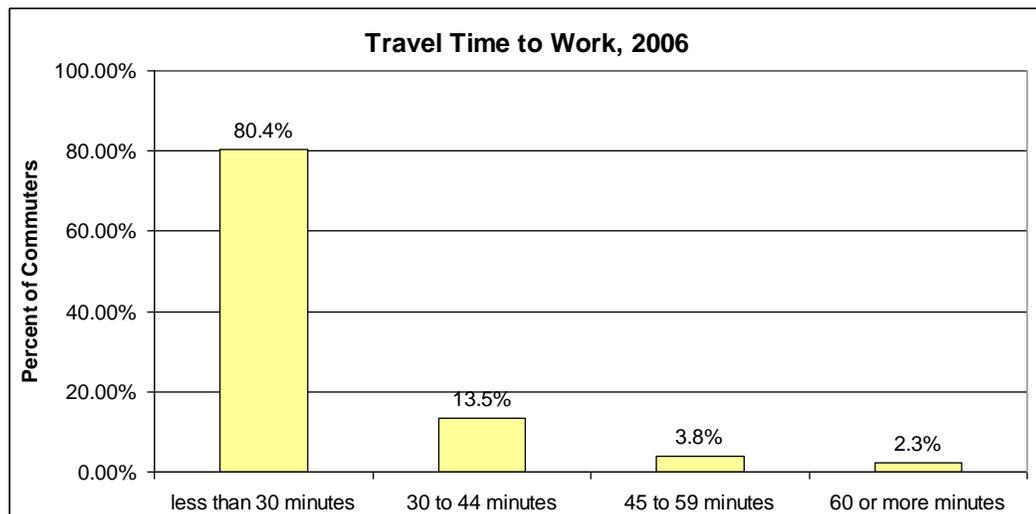
Table T-1
Means of Transportation to Work
Richmond County, 2006

Means of Transportation to Work	Number of Workers*	Percent of Workers
Drove alone	60,117	74.00%
Carpooled	9,903	12.20%
Public transportation:	1,049	1.30%
Walked	6,400	7.90%
Worked at home	2,646	3.30%
Other means	1,173	1.40%
Total	81,288	100%

* Richmond County Residents

Source: U.S. Bureau of the Census, *2006 American Community Survey*

Travel time data indicate that the overwhelming majority of Richmond County residents commute less than 30 minutes to work. The following chart shows that 80.4% of workers commute less than 30 minutes and another 13.5% travel from 30-44 minutes each way to work. Only 6.1% of residents have commutes exceeding 45 minutes.



Source: U.S. Bureau of the Census, *2006 American Community Survey*

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Street and Highway System

Conditions on the county's street and highway system were measured using the Level-of-service (LOS) outputs from the Augusta Regional Transportation Study's (ARTS) travel demand model. The ARTS travel demand model is a traditional four-step mathematical process involving trip generation, trip distribution, mode choice, and traffic assignment. Inputs to the model include data on existing conditions and projections of population, occupied housing units, employment, school enrollment and vehicles. Outputs include LOS calculations for road segments on the transportation network.

LOS standards for a road segment are based on the ratio of the daily traffic volume to the segment's daily capacity. This volume-to-capacity ratio is an indication of the amount of delay a driver would encounter on the road segment. This level of service is based upon travel delay and is expressed as letters "A" through "F", with "A" being the highest or best travel condition and "F" being the lowest or worst condition. Table T-2 shows the LOS standards and the corresponding volume-to-capacity ratios and average speeds for urban arterial roads.

Level-of-Service	Volume-to-Capacity Ratio	Average Travel Speed
A	VC Ratio < 0.30	>= 35 MPH
B	0.30 =< VC Ratio < 0.50	>= 28 MPH
C	0.50 =< VC Ratio < 0.70	>= 22 MPH
D	0.70 =< VC Ratio < 0.85	>= 17 MPH
E	0.85 =< VC Ratio < 1.00	>= 13 MPH
F	VC Ratio >=1.00	< 13 MPH

Source: Georgia Department of Transportation

The minimum level-of-service (LOS) designation that Augusta considers acceptable, in terms of planning for adequate capacity, is LOS "C". At LOS "C", the volume-to-capacity ratio is in the 0.50 to 0.70 range and average peak hour travel speeds on urban arterials are in the 22-28 miles-per-hour range. This LOS does not apply to rural arterial and collector streets.

Some of the notable street and highway system segments where the LOS is currently below "C" are listed in Table T-3. Not surprisingly, most are located in the urbanized part of the county. They include parts of the major arterial and collector roads that carry some of the highest volumes of traffic.

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Table T-3 Road Segments Level of Service Below "C" Augusta-Richmond County, GA			
Functional Classification	Road Name	Segment	
Interstate	Bobby Jones Expressway (I 520)	I-20 – Peach Orchard Rd.	
	I-20	Riverwatch Pkwy. - Wheeler Rd.	
Principal Arterials	Deans Bridge Rd. (US 1, SR 4)	Tobacco Rd. - Willis Foreman Rd.	
	Deans Bridge Rd. (US 1, SR 4)	Lumpkin Rd. – Windmere Rd.	
	Doug Barnard Pkwy. (CR 1518)	I-520 - Allen Station	
	Mike Padgett Hwy. (SR 56)	I-520 - Brown Rd. (CR 1514)	
	Peach Orchard Rd. (SR 121)	Brown Rd. - Louisa Rd.	
	Peach Orchard Rd. (SR 121)	I-520 - Tobacco Rd.	
	Washington Road (SR 28)	Pleasant Home Rd. – Calhoun Expwy.	
	Wrightsboro Rd.	Barton Chapel Rd. – Jimmie Dyess Pkwy.	
	Minor Arterials	Barton Chapel Rd.	Deans Bridge Rd. - Milledgeville Rd.
		McElmurray Rd.	Peach Orchard Rd. - Liberty Church Rd.
Old Waynesboro Rd.		Mike Padgett Hwy. (SR 56) - Mark Walter Rd.	
Richmond Hill Rd.		Windsor Spring Rd. - Lumpkin Rd.	
Walton Way Extension		Oak Street – Jackson Rd.	
Windsor Spring Road		Woodlake Rd. - Richmond Hill Rd.	
Collector Street		Augusta West Pkwy.	Wrightsboro Rd.-Wheeler Rd.
	McDade Farm Rd.	Brown Rd.-Smokey Rd.	
	Meadowbrook Rd.	Windsor Spring Rd. -Deans Bridge Rd.	
Source: Georgia Department of Transportation, Augusta 2030 Plan Year Road Network, <i>Travel Demand Model</i>			

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Another measure of the condition and efficiency of the street and highway system is travel time delay based on fieldwork. Since 1995 the staff of the ARTS has conducted annual travel time surveys on major arterials in the study area, including those located in the urbanized part of Richmond County. Travel runs are conducted during A.M. and P.M. peaks on each road corridor or segment. The average speed of each run is derived from the time it takes to complete the run, and is then compared to the posted speed limit for the road segment. The deviation of the average speed from the posted speed is a measure of congestion. The performance measures adopted by ARTS range from "Not Presently Congested", meaning that the average speed is equal to or above the posted speed limit, to "Seriously Congested", which are road segments on which the average speed is more than 30% below the posted speed limit. Table T-4 summarizes the CMS performance measures.

Category	Average Speed is . . .
Not Presently Congested (NPC)	\geq Posted speed limit.
At Risk of Congestion (ARC)	1% - 15% below the posted speed limit
Borderline Congested (BC)	15% - 25% below the posted speed limit
Marginally Congested (MC)	25% - 30 % below the posted speed limit
Seriously Congested (SC)	$>$ 30% below the posted speed limit

Since the travel time surveys started in 1995, a number of roads and road segments have been documented as having congestion problems. Many factors contribute to the congestion including high traffic volumes, frequency of traffic signals, presence of major traffic generators, and frequent turning movements. Table T-5 identifies the Richmond County corridors that have consistently experienced the highest congestion in recent years. These include a number of principal arterials, minor arterials and collector streets. As with the V/C ratios, these congested corridors are located in the most heavily urbanized parts of the city.

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Table T-5 Selected Congested Road Corridors Augusta-Richmond County, GA		
Functional Classification	Road Name	Location
Principal Arterials	Fifteenth St. (SR 4)*	Reynolds Street to Martin Luther King Jr. Blvd. (MLK)
	Washington Rd. (SR 28)	Calhoun Expressway to Pleasant Home Rd.
	Wrightsboro Rd. Segment 1	Barton Chapel Rd. to Jackson Rd.
	Wrightsboro Rd. Segment 3	Highland Ave. to Fifteenth St.
	Peach Orchard Rd.	Tubman Home Road to SR 88
	Doug Barnard Pkwy.	Gordon Hwy. to Tobacco Rd.
Minor Arterials	Wheeler Rd.**	Walton Way Ext. to Flowing Wells Rd.
	13th St./RA Dent Blvd	Reynolds Street to Wrightsboro Rd.
	Walton Way Ext.	Bransford Rd. Jackson Rd.

Note: This list includes road segments classified at least “Borderline Congested” in AM and PM peak periods

*Part of the road classified as a minor arterial

**Part of the road classified as urban collector street

Source: Augusta Regional Transportation Study, *Congestion Management System*, 2007

Intersection Problems

In any surface transportation network problems occur where major arterials intersect one another or where conditions (e.g. poor design, obstructions) make an intersection hazardous. As part of the ARTS transportation planning process, an analysis of intersection accident data is completed annually. Accident reports are collected and analyzed for all intersections in Richmond County with 20 or more reported accidents during the calendar year. The intersections are then ranked, from highest to lowest, based on both the number of accidents and the accident rate. The accident rate is a measure of the number of accidents adjusted for the number of vehicles entering each intersection during the year. The resulting report is used to inform the public about traffic safety issues in the City, and is used by the Public Works and Engineering Department to program intersection improvements. Some of the intersections with the highest accident rates between the years 1999 and 2004 include:

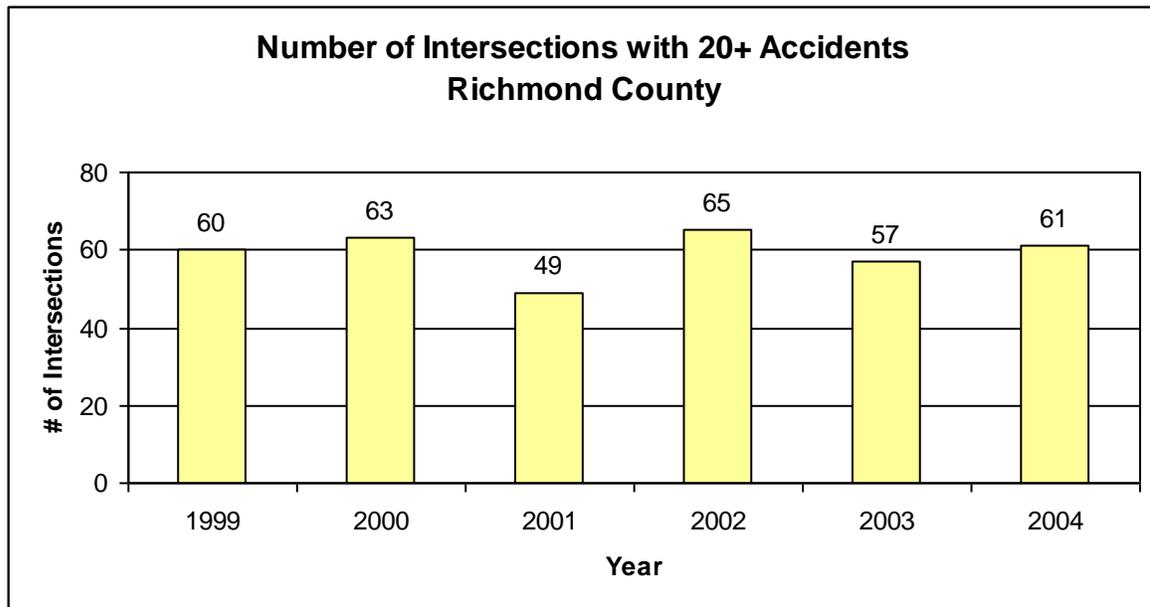
- Bobby Jones Expressway @ Scott Nixon Memorial Boulevard
- Bobby Jones Expressway @ Peach Orchard Road
- Bobby Jones Expressway Eastbound Ramp @ Mike Padgett Highway (SR 56)

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- Deans Bridge Road @ Gordon Highway
- Deans Bridge Road @ Richmond Hill Road
- Peach Orchard Road @ Windsor Spring Road
- Washington Road @ I-20 Eastbound Ramps
- Wrightsboro Road @ Jackson Road/North Leg Road
- Windsor Spring Road @ Tobacco Road

Source: Augusta Regional Transportation Study, *Intersection Accident Analysis*, 2004

The following chart shows recent trends in the total number of intersections with 20 or more reported accidents.



Vehicle Parking

The Comprehensive Zoning Ordinance for Augusta-Richmond County includes minimum parking and loading area requirements for residential, commercial, office and industrial land uses, places of public assembly and health care facilities. The ordinance includes separate parking and loading area requirements for locations within and outside the central business district. The number of parking spaces required varies from one land use to another and depends on such factors as the number of dwelling units in an apartment complex, the gross floor area of a commercial or industrial building, the number of employees at a business and the number of seats in a church or theater. Regardless of location, all parking spaces have to meet specified minimum dimensions and all parking facilities have to meet certain requirements for ingress and egress, grading and drainage, lighting and buffer from an adjoining residential district. A building lawfully in use on or before February 4, 1974 is considered a nonconforming use with regard to parking. If a nonconforming building is enlarged, or the use of such building is expanded, then parking must be provided for the additional area or use of the building. The nonconforming parking requirements usually come into play when buildings located in downtown Augusta are adaptively reused.

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Maintenance Activities

Maintaining existing roads and bridges is another integral part of the transportation system. The Maintenance Division of the Public Services Department is responsible for the repair and maintenance of roads, sidewalks, storm drains, curb and gutter on all county roadways. The Traffic Engineering Section of the Engineering Department is responsible for the repair and maintenance of traffic signs, pavement marking, and traffic control signals.

LAND USE AND TRANSPORTATION

The preceding section indicates that a number of arterial and collector streets throughout the city are experiencing traffic congestion. Specific examples include the section of Wrightsboro Road in the vicinity of I-520 and Augusta Mall, Fifteenth Street adjacent to the medical complex, and Peach Orchard Road from I-520 to Tobacco Road. Generally speaking, these and other congested roadways serve one or more of the following functions:

- Carry high volumes of peak-hour commuter traffic
- Provide direct access to major traffic generators, such as employment, shopping and entertainment centers
- Are located in close proximity to areas experiencing new residential and commercial development
- Are the sole or primary outlet for vehicular traffic generated by adjoining residential and commercial development

There are a number of factors that probably contribute to the traffic congestion on some roadways. Among the factors that might contribute to the congestion are the following:

- Limited number of major arterials and collector streets that connect housing and employment / entertainment centers with one another
- Continued preference for low-density, single-use land development in the local market
- Limited number of interconnections between residential subdivisions, forcing all vehicular and pedestrian traffic to use the nearest collector or arterial road to access adjoining neighborhoods and businesses
- The high volume of traffic generated by regional shopping, entertainment and employment centers located in Augusta
- Continued trend in which the majority of new housing, jobs and commercial development is occurring in suburban and rural parts of the city
- Desire of commercial development to locate on major roads and in close proximity to one another and to existing and planned residential development
- Lack of incentives for mixed-use /higher-density development
- The timing and pace of development outstrips the ability of the road network to accommodate the increased demand

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Whether or not traffic congestion is affecting the quality of life for residents, or the attractiveness of Augusta as a place to live and work, is a related question that has yet to be answered. There may be opportunities to coordinate land use and transportation improvements that can alleviate existing congestion or avoid additional congestion and increase transportation options for residents.

ASSESSMENT

Planning and programming improvements to the transportation system is vital to the continued growth and development of Augusta-Richmond County. At the same time, such improvements must be sensitive to environmental conditions, potential impacts on the human environment, and increase the mode choice for residents and visitors.

Road and Bridge Needs

Planning and programming road improvement projects have been an important function of government at all levels for many years. Since the mid-1960s projects involving state and federal funds have been planned and programmed through the Augusta Regional Transportation Study (ARTS). Table T-6 lists the major transportation projects currently programmed for construction (i.e. projects in pre-construction) through ARTS in cooperation with Georgia Department of Transportation and the Federal Highway Administration. The project list does not include lump sum funding for maintenance, safety, preliminary engineering, roadway/interchange lighting and similar types of projects on the interstate highways and major arterials. Lump sum funding is also included in both the ARTS TIP and the Georgia STIP.

The ARTS was established in response to a provision in the Federal Aid Highway Act of 1962 mandating transportation planning in urban areas throughout the country. A Policy Committee - comprised of local elected officials from the area, representatives from the Georgia and South Carolina Departments of Transportation, and representatives of the Federal Highway Administration and the Federal Transit Administration - meets quarterly to review progress on transportation projects and make decisions on ARTS planning and programming issues. A Citizens Advisory Committee and a Technical Coordinating Committee support the work of the Policy Committee. Over the years, the ARTS study area has grown to encompass an area that includes all of Richmond County, Georgia, part of Columbia County, Georgia, the Fort Gordon Military Reservation, part of Aiken County, South Carolina, and part of Edgefield County, South Carolina. Incorporated places within the study area include the Georgia cities of Augusta, Hephzibah, Blythe and Grovetown, and the South Carolina cities of Aiken, North Augusta, and Burnetown.

The Augusta Engineering Department is a partner in the ARTS planning process. In addition, the department, working in cooperation with the City Commission, is responsible for programming surface transportation projects involving only local funds. The Special Purpose Local Option Sales Tax (SPLOST) Program provides the City with another important tool for financing road improvements. Since 1988, SPLOST funds have paid for intersection

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improvements, dirt road paving projects, resurfacing, drainage, sidewalks, traffic signals, and road widening and improvement projects. SPLOST funds also paid for costs associated with larger projects involving the use of state and federal funds. Typically, the City agrees to pay for one or more of the following phases associated with a larger road widening or improvement project: engineering and design fees, utility relocation and right-of-way acquisition. Some of these projects have been completed more expeditiously because of the availability of SPLOST funds. Examples of completed projects using SPLOST funds include the widening of Bobby Jones Expressway from I-20 to Gordon Highway, the widening of Tobacco Road, the construction of Jimmie Dyess Parkway and the widening of Walton Way Extension / Davis Road.

Table T-6 Programmed Transportation Improvement Projects Augusta-Richmond County, GA	
Location	Description
Interstate 20 (SR 402)	Widen bridge shoulders at Savannah River.
Bobby Jones Expressway (I-520, SR 415)	Widen from Deans Bridge Road (US 1/SR 4) to Gordon Highway.
Gordon Highway (US 278/78, SR 10)	Construct median barrier from US 25 to Walton Way.
Alexander Drive	Widen to four lanes, with turn lanes at median openings, from Washington Road to Riverwatch Parkway
15th Street (SR 4)	Widen to four lanes and six lanes with turn lanes as needed, from Milledgeville Rd. to Government Street.
Wrightsboro Road	Widen to four lanes with turn lanes as needed, from Jimmy Dyess Parkway to I-520 SB Ramp.
North Leg Road @ CSX	Widen bridge over CSX Railroad.
Windsor Spring Road @ NS Railroad	Reconstruct and rehabilitate bridge over NS Railroad.
Windsor Spring Road @ Spirit Creek	Widen bridge over Spirit Creek.
Windsor Spring Road	Widen to four lanes with turn lanes as needed from Willis Foreman Rd to Tobacco Rd.

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**Table T-6
Programmed Transportation Improvement Projects
Augusta-Richmond County, GA**

Location	Description
Windsor Spring Road	Widen to four lanes with turn lanes as needed from SR 88 to Willis Foreman Road.
St. Sebastian Way/Greene Street Ext.	Modifications and additions to streets, railroad and related improvements in the vicinity of the grade crossing of the CSX Railroad and Fifteenth Street.
River Watch Parkway	Construct median barrier from Interstate 20 to Fifteenth Street.
Intelligent Transportation System	Install communications and surveillance equipment along I-20 from SR 388 (Lewiston Road) to South Carolina line
Mike Padgett Hwy. (SR 56)/Mike Padgett Highway	Widen and add center turn lane from Old Waynesboro Road to Bennock Mill Road. Includes bridges.

Source: ARTS *Transportation Improvement Program, FY 08-11*, June 2007

A review of Table T-6 indicates that road widening projects comprise a large percentage of the planned transportation improvement projects. There are also projects designed to make better use of the existing road network. Examples of such projects are the construction of a Regional Transportation Control Center (TCC), installation of surveillance and communications equipment along I-20, intersection improvements, and traffic signal upgrades.

The TCC and related surveillance equipment are part of an Intelligent Transportation System (ITS) planned for the Augusta region. A regional ITS Master Plan was completed in February 2002. The plan included recommendations for the implementation of ITS projects in phases over a twenty-year period. Recommended components include a communications network, cameras, detectors, dynamic message signs, weather detectors, traveler information system and railroad grade crossing warning detection; upgrade the traffic control system; deployment of the Highway Emergency Response Operators (HERO on area freeways; and provide ITS for Augusta Transit.

In Intelligent Transportation Systems information technology is used to solve traffic problems. It is used to improve safety, efficiency and performance of streets and highways, vehicles, transit, and rail systems. Information comes in from the field, is analyzed, stored, and then is sent out to devices and travelers. An effective ITS saves time, money, and lives.

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Another way to reduce congestion, enhance safety and make more efficient use of the road network is through access management. Access management involves changing land use planning and roadway design practices to limit the number of driveways and intersections and control vehicle turning movements. Access management also promotes a more pedestrian-friendly environment. Some of the major access management strategies include the following:

- Limit the number of driveways per lot
- Locate driveways away from intersections
- Connect parking lots and consolidate driveways
- Provide residential access through neighborhood streets
- Increase minimum lot frontage on major streets
- Promote a connected street system. Avoid networks that force traffic onto arterials
- Encourage internal access to outparcels located on large commercial lots
- Regulate the location, spacing and design of driveways

Vehicle Parking

Generally-speaking there is an ample supply of vehicle parking lots and facilities throughout the city of Augusta. This is due in part to the fact that much of the residential, commercial and industrial development in the city occurred after the enactment of the parking requirements in the zoning ordinance. There are some locations where daytime parking is inadequate to meet demand. The mid-town medical complex is one such location. Over the years, a number of parking decks have been erected to supplement the surface parking lots in the area serving the Medical College of Georgia and Hospitals, the VA Medical Center, University Hospital and the related health care facilities. Still, the Medical College has had to develop several remote lots to meet the daytime demand.

Augusta State University is another location where daytime, on-site parking is not adequate to meet demand. Vehicle parking typically spills over onto the adjoining neighborhood street and the university leases spaces from a nearby church to supplement the surface lots on campus.

A parking study of downtown Augusta, completed in April 2005 by Carl Walker Associates, concluded that in spite of public perception “there is a healthy surplus of parking throughout the CBD when both on-street and off-street capacity is considered “ (p.59). The study recommended that the City, Downtown Development Authority and other stakeholders begin now to plan for the parking issues that will emerge as downtown redevelopment continues in the future. Among the specific steps recommended were the following:

1. More consistent enforcement of time-limits to discourage all-day parking by downtown workers in the most convenient on-street lots and spaces.

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2. Consider the use of dedicated parking enforcement officers to assure consistent enforcement of the time limits.
3. Include potential sites for future off-street public parking structures in the City's overall land use plan. The sites for such parking structures should have direct exposure to Broad Street and be in close proximity to the facilities they are designed to serve.
4. Develop pedestrian corridors to link rear parking areas to Broad Street.

One additional observation about downtown parking is that some older off-street parking lots have fallen into disrepair over the years. In most cases, though, these lots are candidates for incorporation into planned downtown redevelopment projects. Any new construction downtown would have to meet the applicable off-street parking requirements.

Rail Transportation

For many years, informal agreements and local ordinances have been employed to restrict the speed and hours of operation of freight trains passing through downtown Augusta. In the 1970s the Federal Highway Administration completed a railroad demonstration plan for Augusta. The purpose of the plan was to improve the relationship between the railroad and the city and improve the operation of the transportation network.

The plan recommended the relocation of the Southern Railroad (now Norfolk Southern) and Seaboard Coast Line Railroad (now CSX Railroad) main lines and yards out of downtown, the construction of new grade separations, and upgrading the Belt Line on the Georgia Railroad (now part of CSX Railroad). In keeping with the intent of the study, the recommended improvements were identified as "usable segments", meaning that they could be implemented and provide a benefit to the transportation network even if the remainder of the recommended projects were not completed.

As it turned out, only some of the usable segments have been constructed in the thirty years since the demonstration plan was completed. Four grade separations were constructed during the 1980s. Three are located on the CSX lines and include the elevated section of the Calhoun Expressway (SR 28) between 12th and 15th Streets, the Fifteenth Street overpass near the Harrisonville Yard, and the Highland Avenue overpass. A fourth overpass is located on Walton Way above the joint Norfolk Southern/CSX main line on Sixth Street. A fifth overpass, to span the CSX line between Broad Street and River Watch Parkway, is planned as part of the St. Sebastian Way/Greene Street Extension project. The St. Sebastian Way/Greene Street Extension project is scheduled to be let for bids in early 2008.

The Norfolk Southern and CSX main lines continue to bisect downtown Augusta and the main railroad yards are still in the same locations. The Belt Line is still in need of the upgrades recommended as part of the demonstration project. In recent years there has been renewed interest in relocating the Norfolk Southern main line out of downtown, and upgrading the Belt Line. In 2001, the City and the railroads worked together to purchase and

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install remote-controlled switches at four locations on the main line tracks in downtown. The switches reduce the delay caused by trains stopping to allow engineers to manually throw a switch. In 2004 Congress approved a \$2.0 million earmark for rail relocation activities in Augusta. These funds will be used to conduct engineering work on an unspecified rail relocation project.

Passenger rail service in Augusta ended a number of years ago. However, rapid population growth and traffic congestion have rekindled interest in both commuter and intercity passenger rail service in Georgia. The Georgia Rail Passenger Program (GRPP) includes the phased development of seven commuter rail lines, seven lines of intercity rail service and a Multi-Modal Passenger Terminal. The commuter lines will serve 45 stations in the metro Atlanta area. The intercity lines will link nine of Georgia's largest cities and towns, including Augusta, with the metro Atlanta area. The Multi-Modal Passenger Terminal (MMPT) is planned for a site at the corner of Forsythe and Alabama streets in downtown Atlanta. The Georgia Rail Passenger Authority, the Georgia Regional Transportation Authority and the Georgia Department of Transportation are working together to implement the GRPP.

The Atlanta–Macon and Atlanta–Athens lines and MMPT project are the most advanced in terms of planning, engineering, funding and approvals. The initial phase of the Atlanta–Macon line will be 26 miles of commuter rail service between Atlanta and Lovejoy. The Atlanta–Athens line will begin with commuter service between Atlanta and Cedars Road in Gwinnett County. The first phase of the MMPT will accommodate the rail service from Lovejoy, and provide direct connection to the Five Points Station usable by Macon and Athens service, as well as other future lines. Depending on the completion of the remaining pre-construction activities, these projects are scheduled for implementation between 2007 and 2010.

The Augusta-Madison-Atlanta Intercity and Commuter Rail line is currently programmed for implementation between 2014 and 2019, with the commuter service between Atlanta and Madison coming first. This 171-mile service will use a CSX freight line, with three daily intercity trains each way and commuter trains from Madison stopping in Newton, Rockdale, DeKalb and Fulton counties. The initial capital cost for the commuter service is estimated at \$183 million, with another \$161 million needed for extension to Augusta.

Trucking

A freight study is in the process of being completed for the Augusta Regional Transportation Study (ARTS) area. The objectives of the study are to develop a profile of the region's freight industry, identify needs and deficiencies specific to regional freight operations and develop freight transportation improvement projects to address current or anticipated needs. The freight improvement projects will then be added to the ARTS Long Range Transportation Plan and the Transportation Improvement Program.

The draft freight profile identifies the major truck routes in the region and the truck flows on these and other routes. Truck volumes and percentages can be used to identify routes that should be included in a truck route network. Routes that have a combination of high traffic

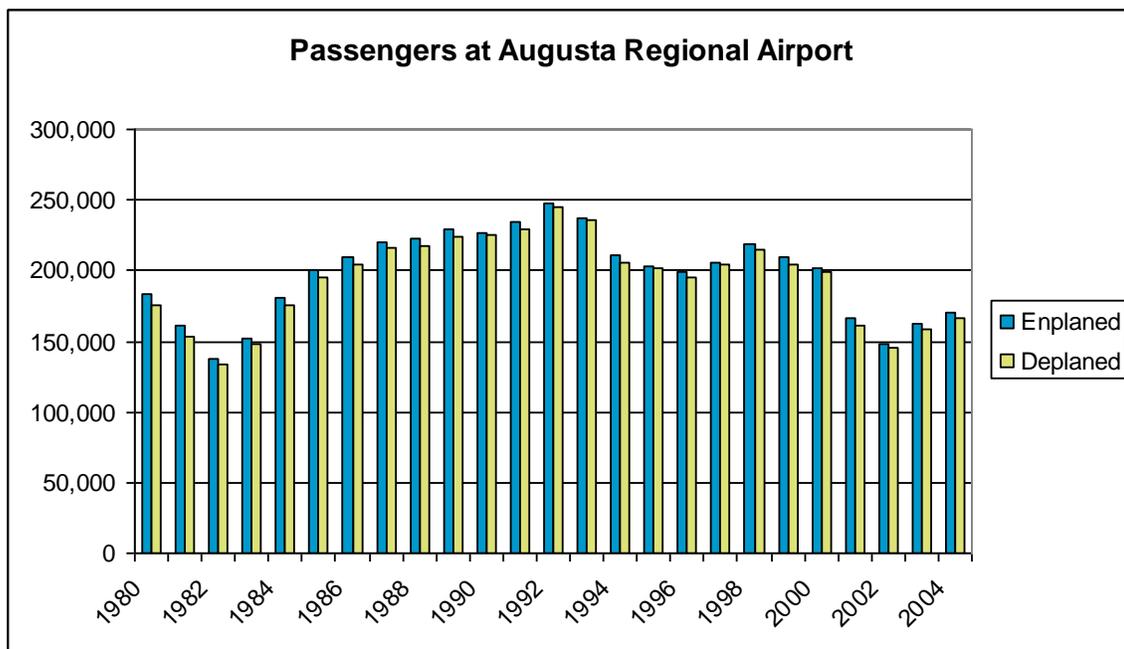
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volumes and high truck percentages are ideal candidates for designated truck routes. In some cases, a route may have a low truck volume but a large percentage of the traffic is trucks. In these cases, the route may be designated as a truck route if an alternate route is not available and the route can safely and adequately be traveled by trucks. In the Augusta area, I-20, I-520, SR 383 (S. Belair Road), CR 601 (Wheeler Road), and U.S. 25 (Edgefield Road), and SR 4 (Dean Bridge Road) have the highest truck volumes.

The presence of trucks on routes that are not adequately designed to accommodate trucks creates a safety hazard for both truckers and motor vehicle occupants. Motor vehicle crashes and congestion adversely affect the flow of goods. To address these operational issues, the draft freight profile identified congested corridors and high-crash locations. These data, as well as direct input from freight haulers and others, will be useful in identifying the location for freight transportation improvement projects.

Aviation

A ribbon cutting ceremony was held in January 2008 for a new airline passenger terminal at Augusta Regional Airport that has been under construction for the last two years. The new terminal provides space for four airlines and has six departure gates. Other airfield improvement projects include replacing airfield signage and pavement maintenance projects on both runways and aircraft parking aprons. The new terminal and related improvements are some of the steps being taken to increase commercial air traffic at Augusta Regional Airport. Passenger counts at the airport have been variable over the last 20 years or so (see chart below).



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At Daniel Field, Airfield Improvement Projects in 2008 will include replacement of security fencing, new runway lighting and signage on the primary runway and restriping the alternate runway.

Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities have been the focus of planning studies in Augusta and Richmond County in recent years. The 1994 ARTS Bikeway Plan included recommendations for a bicycle safety and awareness campaign, including bicycle facilities in highway widening projects, and making the existing transportation network more bicycle-friendly. The Bikeway Plan identified the Augusta Canal, the Savannah River levee, and several interconnected streets in the Summerville/Academy Baker area as potential sites for bikeways. In 1997, the list of potential bike corridors was expanded significantly as part of the update of the ARTS Long-Range Transportation Plan. In Richmond County, thirty-five corridors were identified as potential sites for either on-road or off-road bicycle facilities.

The 1994 Bicycle Plan was replaced by the ARTS Regional Bicycle and Pedestrian Plan in January 2003. The new plan provided a blueprint for development of bicycle and pedestrian facilities over the next 20 years (See Proposed Bicycle and Pedestrian Map – Augusta-Richmond County). The plan includes an inventory of the current regional bicycle and pedestrian network, design standards for new facilities, a list of 194 recommended projects (with cost estimates), and strategies for implementing the projects. Of the total recommended projects, 47 are proposed in Augusta-Richmond County at an estimated cost of \$ 25.8 million.

The Bicycle and Pedestrian Plan was developed with a public involvement program that included a bicycle and pedestrian steering committee, public meetings, a project newsletter, web page updates, and media outreach. The project steering committee included representatives from the Recreation and Parks Department, the Neighborhood Alliance, the Safe Communities Coalition (no longer in existence), the Augusta Canal Authority, and bicycle and pedestrian organizations.

Several off-road bicycle and pedestrian projects have been implemented in recent years. Most have been financed with federal Transportation Enhancement (TE) funds and matching local funds. The City's Recreation and Parks Department constructed paved walking trails at several parks, including one at Lake Olmstead connecting to a new pedestrian bridge over the Augusta Canal.

The canal bridge is one of several projects planned or implemented by the Augusta Canal Authority. Among the recently completed projects are the Bikeway/Multi-Use Trail Improvements from the canal headgates to downtown Augusta and installation of a pedestrian bridge, river stairway and canoe dock near the headgates. The Augusta Canal Interpretive Center, located in the Enterprise Mill, opened to the public in April 2003 and has been offering guided canal tours on Petersburg tour boats since fall of that year. Other bicycle and pedestrian projects in design or underway include completion of the New

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Bartram Trail between the canal and Savannah River, new trails and boardwalks on the canal's southwestern bank and a heritage park and trails using the waterway's recently restored third level.

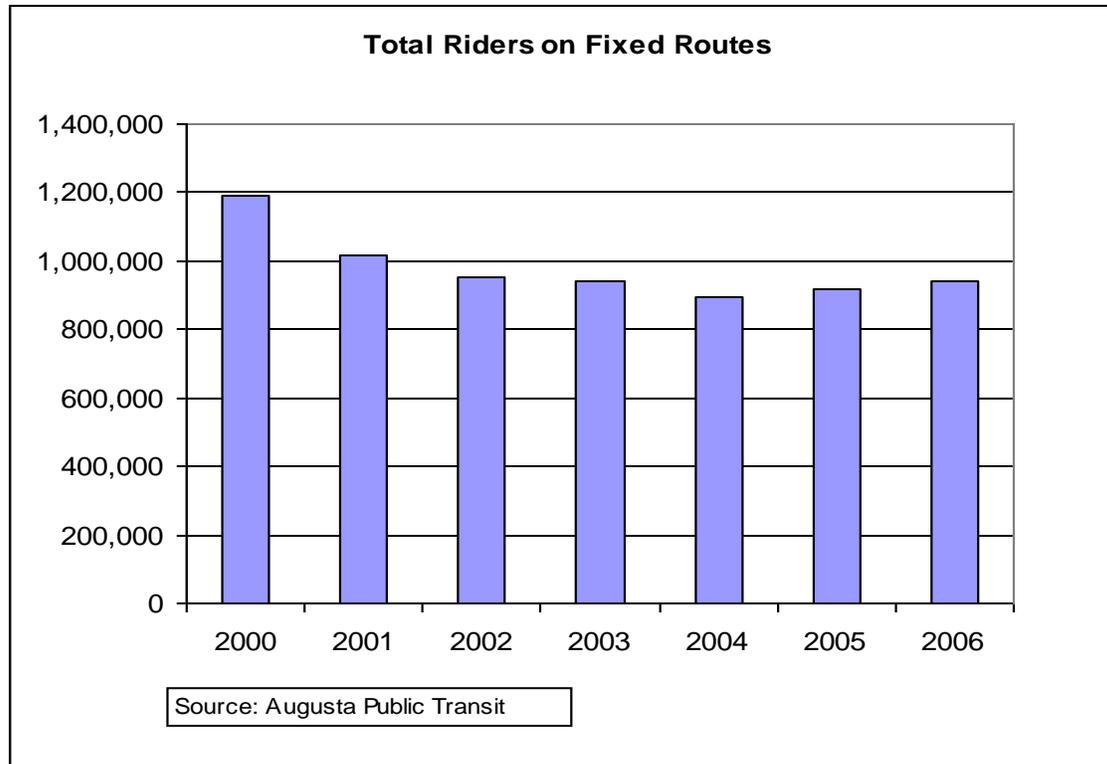
Phase I of a history walk on the Augusta State University (ASU) campus was completed in the spring of 2003. Phase I Improvements included a walkway, brick wall and other amenities along the Walton Way side of the campus. Phase I financing included a \$700,000 TE grant, a \$100K grant from the state, a \$60,000 grant from the city and private funds. Phase II of the history walk included a \$500,000 TEA grant, a \$50,000 state grant, and private funds for the renovation of the guard house at the corner of Katherine Street and Walton Way, the part of the walk and wall along Katherine Street, the part of the walk and wall along Arsenal Avenue and the wall around the arsenal cemetery.

Phase III included installation of a section of the walkway behind the performing arts studio and was paid for from savings from another ASU building project. ASU was recently (December 2007) awarded another \$600,000 TE grant to help finance the last phase of the history walk project.

Public Transportation

Public transportation is generally available throughout the city, especially in areas where households lack vehicles for personal use. The attached map shows the transit routes in relation to the location of households with no vehicles available. However, Augusta Public Transit (APT) operates within budget constraints that have resulted in the consolidation or elimination of some fixed route service in recent years. Funding limitations, and the rising cost of fuel and operating expenses, have also made it difficult to extend fixed-route service into growing areas of the city. Existing riders become concerned anytime there are cutbacks in service. Potential riders would like to see an increase in the level, frequency and location of fixed-route service. The following chart shows that total ridership on APT's fixed routes has been variable over the last few years.

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The APT Transit System Analysis (November 2001), prepared by Manuel Padron and Associates, proposes several improvements to the transit system. The proposed improvements to existing service emphasized: 1) increasing productivity where possible, 2) maintaining current levels of service for most fixed routes and 3) enhancing service on the routes with the potential for attracting additional riders. Proposed improvements include modifications to eight (8) routes, the addition of a new cross-county connector route and extending service to Fort Gordon and North Augusta.

Even though the study recommended service to Fort Gordon, APT decided not to provide service to the military installation because of security concerns and time constraints. In October 2002, APT extended service across the Savannah River to North Augusta, South Carolina. APT discontinued the service in August 2006 due to low rider ship and construction in the area. In June 2005, the Aiken County transit provider, the Best Friend Express, extended service to the APT Transfer Facility in Augusta. The service continues at present.

Currently, APT is experiencing financial problems due to budget cuts and the rising costs of fuel and other operating expenses. The City Administrator is trying to get a portion of the millage dedicated to public transit to help ensure financial stability for the transit system. The Georgia Transit Association (GTA) is working with the Georgia legislature on several options to provide operating assistance to both urban and rural transit systems. In addition, the GTA is trying to get federal legislation passed to allow yearly allocations to be used for operating expenses.

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Transportation and Land Use

The low-density pattern of development and predominance of single-use districts that characterizes much of Augusta increases the dependence on the automobile as the primary means of transportation for most households. For households that have no vehicles, transportation options are limited (taxi, public transportation, walk, bike), not always safe or convenient, and it is more difficult for them to access jobs, shopping and recreation facilities. Some of the options that should be considered to increase the connection between land use and transportation, decrease the burden on the existing transportation network and give all residents more transportation choices include the following:

1. Identify areas where higher-density, mixed-use development would be appropriate and develop the applicable regulations.
2. Promote or require more street and sidewalk interconnections between neighborhoods.
3. Promote the use of a grid or modified grid street pattern in new subdivisions
4. Implement projects in the ARTS Regional Bike and Pedestrian Plan that create a general network of bicycle and pedestrian facilities in the city