

## Transportation

### *Highways, Roads and Streets*

**H**ighways, streets, and roads provide for the movement of people and goods from one place to another. These public ways form a network that defines the relationship of private property uses to one another. This section will cover the interrelated concerns of...

- ◆ The functional classes of various streets and roads;
- ◆ Plans for improving the function, and thereby the safety, of our major roadways; and
- ◆ How land use patterns impact upon, respond to, and should accommodate traffic improvement projects.

Exhibit 5-M1 illustrates the network of important roadways in Daviess County and the functional classes assigned to them as of January 2016. Subsequent updates in classifications approved by the Metropolitan Planning Organization (MPO) for transportation will be considered in effect for the purposes of this comprehensive plan.

#### **Freeways/Expressways**

Divided highways that provide the highest level of through-traffic mobility; full control of access with interchanges or widely spaced intersections; maximum speed limits, and largest traffic volumes.

#### **Principal Arterials**

High-volume corridors, which serve major activity centers and longest trip desires; serve major portion of trips entering and leaving the urban area, as well as intra-area travel, such as between the Central Business District (CBD) and fringe area; spacing is usually from less than one mile in the CBD to as high as five miles in suburban area; driveway access is controlled to minimize disruption to traffic movement.

#### **Minor Arterials**

Interconnect with principal arterials and provide service to trips of moderate length at a lower level of mobility; more emphasis on land access, but spacing still controlled; spacing is 1/3 to 1/2 mile in the CBD and 2 to 3 miles in fringe areas.

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### Major Collectors

Collect traffic from local streets and channel it into arterial systems; provide land access service with closer driveway spacing than arterials; serve local traffic movement within and between neighborhoods; may extend across arterials.

### Minor Collectors

Similar to major collectors, but allow more driveway access; generally serve lower traffic volumes; do not extend across arterials; generally collect traffic within a single neighborhood in urban areas or within rural sectors bounded by arterials.

### Locals

All remaining roadways not classified above; provide direct access to abutting land and higher order systems; have lowest level of mobility.

### Highway Transportation Plan Summary

In 1984, the Metropolitan Planning Organization (MPO) for transportation re-examined the highway portion of the 1975 plan prepared by Harland Bartholomew and Associates. In an effort to update the 1984 plan, the MPO staff at the Green River Area Development District and OMPC staff inventoried and analyzed revised population, employment and land use trends and projections through 1995.

Further refinement of the plan update has been made through the development of a traffic model that can be used to determine the impact and feasibility of individual project recommendations. In 1987 a major update was made after a special detailed study recommended the new Ohio River bridge be located near Maceo rather than at the east end of the bypass as had been previously proposed. Minor updates are considered annually.

Because most travel originates from the home, the growth patterns of residential development are of critical concern in analyzing the need and location of new or expanded transportation facilities. Retail centers tend to follow the growth of residential areas and increase traffic generation in their vicinities.

Since the 1970s residential development has been scattered throughout the urban area but has been greatest in the south-central, southwest, southeast and east fringes.

### Traffic Service Problem Areas

Since 1984, east-west traffic service improvements have been made to 9<sup>th</sup> Street, Parrish Avenue, 18<sup>th</sup> Street, 24<sup>th</sup> Street extension, East 26<sup>th</sup> Street extension, Scherm Road, Byers Avenue extension, Tamarack Road, Salem Drive/Veach Road, and Southtown Boulevard.

In the future, East 9<sup>th</sup> Street should be widened all the way to Leitchfield Road, and East Byers Avenue should extend from Old\_Hartford Road to East Parrish Avenue (KY 54) at Ragu Drive. The 24<sup>th</sup>/25<sup>th</sup> streets one-way couple may yet be needed if capacity problems arise in that corridor. At the time of this update Hayden Road is being extended through the Gateway Commons development from Highway 54 to Highway 603/Pleasant Valley Road.

Frederica Street continues near or over capacity despite added turn lanes and removal of medians on this principal arterial spine, and despite improvements in north-south service to the west and east (Carter Road widening and J. R. Miller Boulevard respectively). Frederica Street may yet need widening south of 25<sup>th</sup> St. in the future.

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Martin Luther King Boulevard has been constructed from JR Miller Boulevard to South Frederica. Bluff Avenue has been extended from 18<sup>th</sup> Street to 19<sup>th</sup> Street. The Fairview Drive extension through The Downs subdivision should connect to Pleasant Valley Road.

The Highway 54 corridor has experienced significant growth over the past decade, and as a result, traffic congestion along the corridor has become a concern. Roadway widening, signal timing, and other corridor enhancements are scheduled to be implemented by the Kentucky Transportation Cabinet in the near future.

### **Traffic Volumes**

Historically the GRADD office maintained a database of current traffic volumes for Daviess County. However, over time, and due to a lack of necessary funding, their traffic counting program has diminished. They still provide traffic counting services to the local government entities upon request but cannot afford the manpower to continually update the entire county every few years.

Therefore, current traffic count information comes from the Kentucky Transportation Cabinet which systematically updates traffic volumes on state maintained and some local roadways. The state periodically updates the traffic count information on their website and the most current information should be used for future traffic volume references and can be found at <http://transportation.ky.gov/Maps/Pages>.

### **Roadway Improvement Items**

At the time of this writing, the TIP (Transportation Improvement Program) is adopted and amended by the MPO Committee as of October 2014, and is for fiscal years 2014-2019. For more information about a specific project, visit the Green River Area Development District (GRADD) website at [www.gradd.com](http://www.gradd.com).

Roadways themselves are land uses because they occupy space on the land. The amount of space -- right-of-way width -- they require to function efficiently and safely is determined largely by the amount of traffic they must carry. There exists a cyclic relationship between land development and traffic generation as noted by the Northwestern University Traffic Institute:

1. Development generates vehicular trips.
2. Trips increase transportation needs.
3. Transportation needs cause transportation improvements.
4. Improved transportation increases land access.
5. Improved accessibility increases land values.
6. Increased land value intensifies land development.
7. Increased development generates more trips; then the cycle starts again.

Undersized roadways and too many access points lead to reductions in level of service and safety of roadways, and a correlated reduction in the development potential of adjoining land. Major improvements to roadways usually are not made until critically warranted. By this time, they are often very costly propositions due to necessary right-of-way acquisition -- which may require the purchase of sound buildings -- and due to utility relocation and construction costs.

**Exhibit 5-T2: Roadway Buffers Standards**

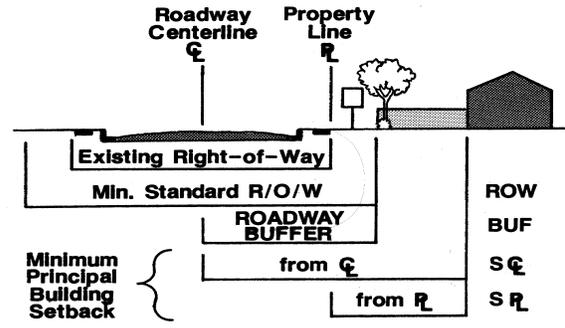
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*Reservation of right-of-way* is recommended as an important way to facilitate the implementation of planned roadway improvements. If private structures and site improvements are set back to allow for future right-of-way enlargement, the cost of major roadway projects can be significantly reduced, allowing these projects to be accomplished sooner. This will enhance the land development potential and values of the affected area, and requires cooperation between government and landowners.

*Controls on the spacing of street intersections and driveway entrances* along major roadways are recommended as the primary way of maintaining the highest possible levels of transportation service and safety. This maximizes efficiency of existing roadways and can forestall the need for costly improvements, thereby saving tax dollars.

Currently, two mechanisms are used to implement controls on intersection and driveway spacing: *subdivision regulations and the access management policy manual*. These two mechanisms should be refined and integrated into all land development processes. Exhibit 5-T2 depicts the recommended standards for intersection and driveway spacing along major roadways in Daviess County.

**Roadway Buffer Standards**



Acceptable Buffer Uses	Unacceptable Buffer Uses
Incidental landscaping	Required landscape materials
Access driveways	Parking areas, storage yards
Post or pole signs	Wall or monument signs
Misc. temporary features	Permanent structures/bldgs.
	Walls or fences

ALONG ROADWAY OF FUNCTIONAL CLASS Features #1	STANDARDS IN FEET			
	ROW	BUF	S C	S R
<b>FREeway/EXPRESSWAY</b>	300	150	170	20
<b>PRINCIPAL ARTERIAL</b>				
> 20,000 projected ADT	120	60	75	25
< 20,000 projected ADT	100	50	75	25
Planned one-way traffic	80	40	60	25
<b>MINOR ARTERIAL</b>				
> 10,000 projected ADT	100	50	75	25
< 10,000 projected ADT	80	40	75	25
Planned one-way traffic	60	30	60	25
<b>MAJOR COLLECTOR</b>	60	30	60	25
<b>MINOR COLLECTOR</b>				
Urban specification	60	30	55	25
Rural specification	60	30	60	25
<b>LOCAL #2</b>				
Urban specification	50	25	50	25
Rural specification	60	30	60	25

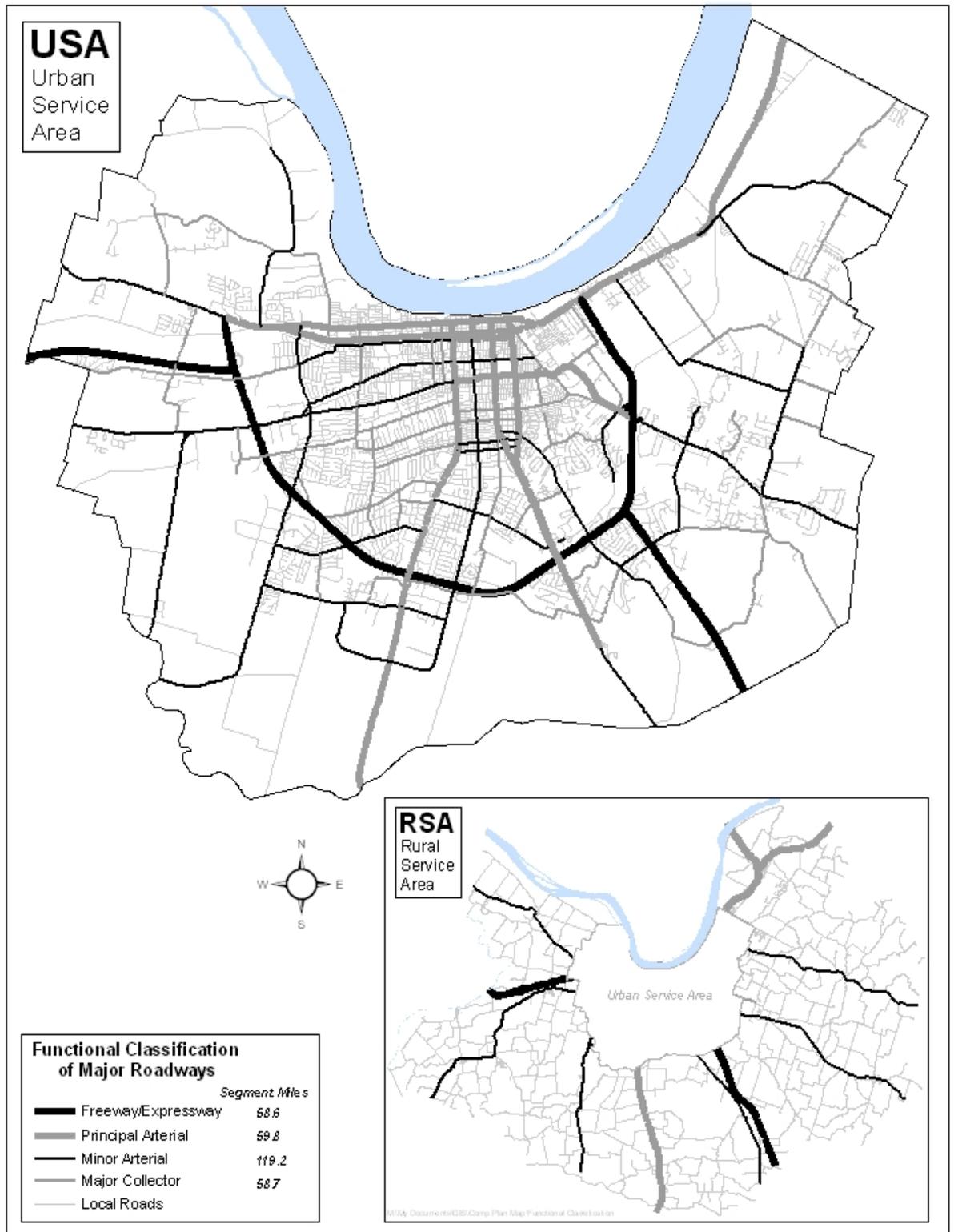
ADT = Average daily traffic count

#1 These standards do not apply in the central business districts of Owensboro and Whitesville.

#2 Local street standards may vary in planned residential development projects, as well as for alleys and marginal access streets.

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Exhibit 5- M1 Functional Classification of Major Roadways



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### Public Transit

This section of the *Comprehensive Plan* is a summary of the *Transit Development Program for OTS - FY 2011-2015*, as prepared by the Green River Area Development District, April 2010.

The Owensboro Transit System presently includes eight routes and serves approximately three-fourths of the developed areas of the City. All bus routes typically run from 6:00 A.M. to 7:35 P.M. on weekdays and from 7:45 AM to 4:15 PM on Saturday. All routes operate on a 45 minute loop and originate at the OTS terminal at 4th and Allen Streets. Primary trip generators for the routes include downtown, shopping centers, schools, parks, medical facilities, elderly and public housing, and government office facilities. Exhibit 5-M3 illustrates the public transit routes.

The Owensboro Transit System is funded through three sources. Fares from users and other miscellaneous revenues have contributed 13% to 21% of the total operating costs, while the City and the federal government -- through the Federal Transit Administration (FTA) operating subsidy program -- have split the differences on the remaining operating costs.

An on-board rider survey conducted in 2005 provides a glimpse of the users on OTS. A summary of this survey is provided herein.

**Purpose for Riding** -Trips for shopping continued to make up the highest percentage (25%) closely followed by work trips and medical trips which comprised 22% and 20% of total trip respectively.

**Age** – In 2005, 59% of the riders were in the 25-44 age cohorts – up 90% from the 1994 survey. The Elderly (60 and above) comprised seven percent of the riders – a 61% decrease from 1994. The 0-24 cohorts and the 45-59 cohorts made up the remainder of the riders. These groups have varied in terms of their percentage of total transit passengers and have rarely been more than 25% during the 20-year period the surveys have been conducted.

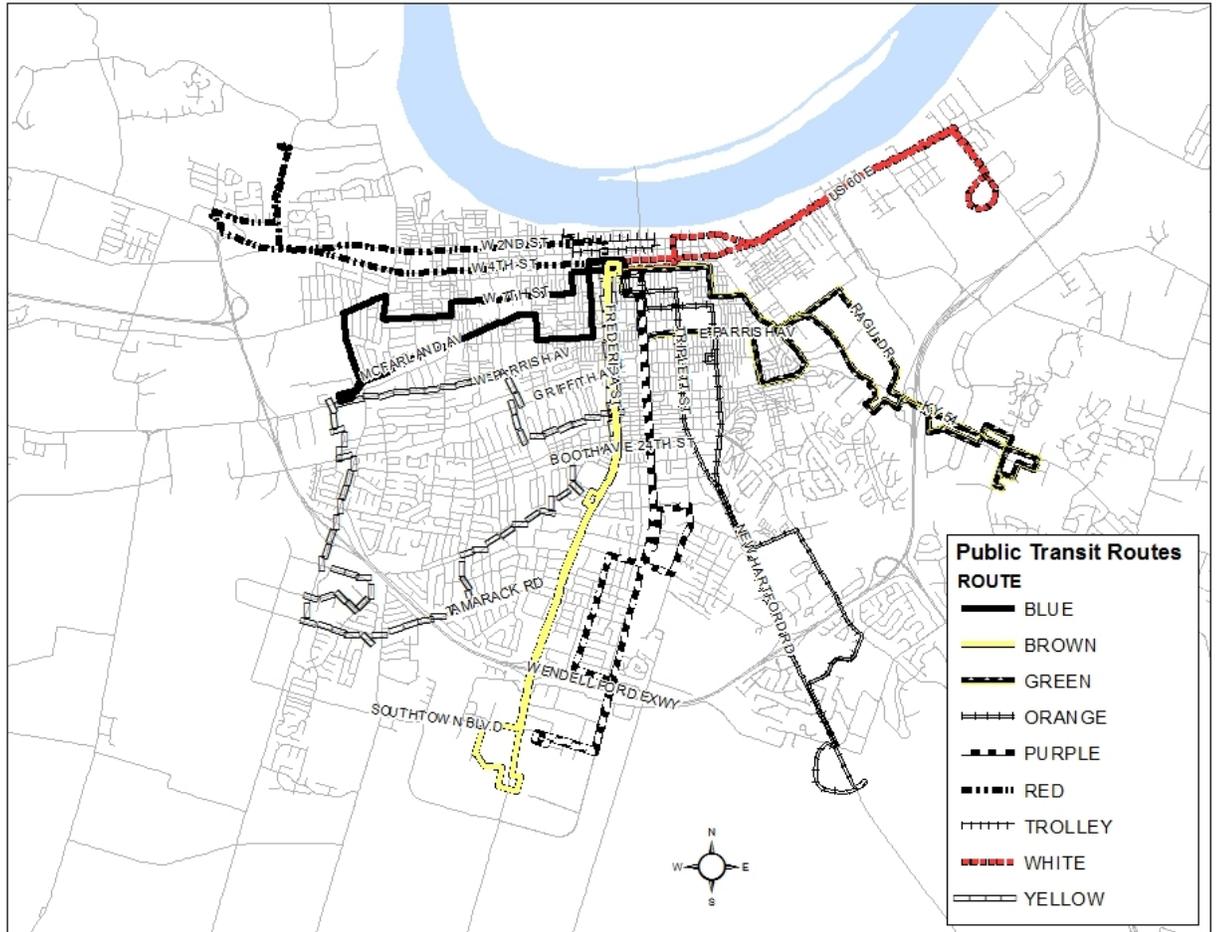
**Sex** - Historically, females have accounted for approximately 75 percent of the riders over the past 25 years. However, that number dropped to 55% in 2000 and rose to 69% in the 2005 survey.

**Employment** – Forty-five of every 100 passengers were full and part time workers in 2005, continuing a gradual rise over the ten-year period. Unemployed persons comprised 40% of the riders. Housewives and students account for the remaining total.

**Income Level** – Seventy-seven percent of riders surveyed had incomes of less than \$20,000 while nine percent had an income over \$20,000. The remaining 14% did not respond to the question. It does not appear that the income ranges have been adjusted for inflation since the inception of the survey in 1975. Trend analysis becomes more difficult without some type of adjustment. Regardless, it is evident that the vast majority of transit riders are low- to moderate-income persons.

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Exhibit 5-M3 – Owensboro Public Transit Routes



### *Airport*

The Airport is located approximately two miles southwest of downtown Owensboro. The Owensboro-Daviess County Airport property contains 887 acres of land. Those Airport lands that do not support aviation activities are used for agricultural activities.

The Airport has two concrete runways. North-South Runway 18-36 is 150 feet wide by 8,000 feet long, and East-West Runway 6-24 is 100 feet wide by 5,000 feet long. Runway 18-36 is the primary instrument runway, however, both runways are capable of accommodating large transport aircraft. Runway 6-24 serves as a secondary, crosswind runway for general aviation utility aircraft. For lighting, Runway 18-36 is equipped with High Intensity Runway Lights (HIRL) and Runway End Identification Lights (REILS) while medium intensity lighting is provided for runway 5-23 and taxiways. Other lights exist for the runway edge, taxiway edge, apron edge, ramp, approach, refueling area, runway threshold, obstruction, wind indicator, and an airport beacon.

Navigational aids include a new LED beacon light and tower, TVOR, ILS, MALSR and DME. A non-federal, VFR air traffic control tower is in operation at the airport. The tower is in operation from 6:00 AM to 10:00 PM seven days a week.

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Crash, fire, and rescue facilities and equipment are provided to the airport through an agreement with Daviess County. The fire station is located on airport property and is known as the Daviess County Airport Station.

The passenger terminal contains approximately 12,000 square feet. Space is provided for the airlines, car rental, airport offices, baggage claim, and public restrooms in the terminal. Approximately two hundred fifty (250) parking spaces are provided in the terminal area.

Three Fixed Based Operators (FBOs) are located at the Airport—MidAmerica Jet, Modern Transportation, and Sterett Transportation. Services include, but are not limited to, aircraft storage, tie-down area, maintenance hangar area, office and support area, flight instruction, charter, automobile parking facilities, and aircraft fueling facilities. A total of 88 spaces comprising 94,000 square feet of FBO hangar area are available. The FBOs also provide 35,000 square feet of maintenance hangar area and 14,000 square feet of office and support area. For itinerant aircraft visiting and aircraft stored outside, the FBOs provide room for 76 aircraft. The FBOs also provide 130 automobile spaces. Fueling for most general aviation is provided by the FBOs. Existing tank storage capacities include 125,000 gallons for jet A turbine fuel and 62,000 gallons for 100 octane low lead avgas.

A 23,000 square foot Kentucky National Guard Armory is located on airport property where 193 full-time and part-time servicemen are stationed.

Scheduled air service is provided by Allegiant Airlines and Cape Air Airlines. Allegiant flies 177 passenger Airbus 320 jets nonstop to Sanford-Orlando. Cape Air flies 9-passenger Cessna 402s nonstop to St. Louis three times daily and return flights from St. Louis three times daily.

For proposed projects located within 5 statute miles of the Owensboro-Daviess County Regional Airport, the FAA may review development plans, proposed land-use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. The FAA encourages proponents of projects which may attract wildlife to notify the FAA as early in the planning process as possible by submitting FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the following FAA address:

Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

## Waterways and Riverport

Navigable rivers bound a significant portion of Daviess County. The Green River forms most of the western boundary of the County, while the Ohio River delineates the northern boundary. No port or loading facilities are located on the Green River within Daviess County. Most river traffic on the Green is simply passing through the County on its way to the cities along the Ohio River. As would be expected, the greatest river traffic flow is on the Ohio River.

The U. S. Coast Guard and the Owensboro Riverport Authority are the two public entities with facilities on the Ohio River. The remaining twenty-one sites serve the needs of individual businesses and

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industries. Except for the Iceland River Terminal, which is located just outside of the Urban Service Area (USA), all other sites are within the USA and concentrated along the Ohio River from the Ohio Valley Terminals easterly to Wrights Landing Road.

The **Owensboro Riverport Authority (ORA)** was established in 1976 to provide public river port and warehousing facilities on the Ohio River and to offer developable land to industrial prospects, particularly river-oriented industries. The ORA is located in the northwestern quadrant of the urban area off River Road at Mile 759 on the Ohio River. The original Riverport site contained over 400 acres. However, over time some acreage has been sold to various industries and businesses leaving the ORA with approximately 182 acres which is utilized for public river terminal and warehousing operation. ORA purchased an intermodal railloop consisting of 105 acres in 2009 and purchased 13 acres in 2011 bringing the total acreage to approximately 300 at the Riverport. All ORA property is zoned for heavy industrial use.

The ORA facility currently has 500,000 square feet of on-site general commodity warehousing, 10 acres of paved outside storage capacity, 125 acres of compacted rock outside storage capacity, domed bulk storage of 24,200 tons, tank farm with river and rail access consisting of three (3) two (2) million gallon tanks and (1) one million gallon tank with space for additional tanks, 25,000-bushel-per-hour grain loading facilities and storage capacity of handling 800,000 bushels of grain, 2016 LHM280 Mobile Harbor Crane, 110-ton capacity crane, a 2011 Liebherr Material Handler with 8 yard bucket located on a spud barge, and a full array of loaders, forklifts, and specialty equipment. The facility has eight mooring dolphins and tug/fleeting service is available 24 hours a day. At the current time, approximately 75 acres are presently available for additional outside storage yards or industrial use.

The ORA is a customs port-of-entry and in December 2003, the Riverport acquired Foreign Trade Zone status. The Riverport also serves as a good delivery site for the London Metal Exchange and Chicago Mercantile Exchange via 3<sup>rd</sup> party licensed warehouse companies as a delivery point of secondary aluminum.

A six-member board of directors, who are appointed by the Mayor of Owensboro and approved by the Owensboro City Commission, governs the ORA. With the growth of the Riverport in recent years, ORA has become financially self-sufficient paying a dividend back to the City of Owensboro each quarter. This financial success has allowed for continuing improvement of equipment and facilities, thus enhancing service to existing customers and allowing better marketing efforts to potential customers.

The success of the Owensboro Riverport has enabled the facility to become a truly multimodal facility with access to water, rail, and highways. Located on Ohio River Mile 759, all major barge lines (including but not limited to American Commercial, Crouse, Ingram, Memco, Mid-South, and Ohio River) provide service to the Owensboro area. Tug and/or fleeting services are available 24 hours a day. Rail service is provided by CSX. The main rail line runs through the port property and directly serves several on-site industries and facilities. The Riverport is accessed via KY 331 from U.S. 60, or alternatively via Ewing and Medley Roads. The Audubon, Natcher Parkways and IN 231 provide access to Interstates 64 and 65. The Owensboro-Daviess County Regional Airport, located just four (4) miles away, provides commercial commuter air service and biweekly flights to Las Vegas and Orlando.

Total tonnage handled at the Owensboro Riverport annually is approximately 800,000 Short Tons. Included in this tonnage figure are approximately 15,000 warehouse truck transfers and 2,500 warehouse rail transfers. ORA serves as distribution center for a major paper products company loading/unloading approximately 13,000 truck annually in addition to the tonnage above. All the activity at the Riverport has both direct and indirect economic benefits on the community as a whole. Based on 2000 estimates, the Riverport is directly responsible for 100 jobs and generating \$18.7 million in economic activity annually.

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However, indirect benefits are even greater with approximately 449 jobs and \$90 million generated annually.

### ***Railways***

During the 1980s, the Illinois Central Gulf Railroad running southeasterly through the county was abandoned. Also, the CSX line (once L&N) running through Utica also was abandoned. Piggyback ramp service is no longer available in Owensboro.

Currently, Daviess County is served by the CSX Transportation Railroad, formerly L&N, via its main line running from Louisville to Henderson. The line covers 25.39 miles east to west through the county and approximates the path of U.S. 60. The main line continues into Henderson and crosses the Ohio River via a railroad bridge. The line terminates in St. Louis. It is classified as a state mainline with a traffic density of 5.4 million gross tons per mile (medium density) and a maximum speed of 40 mph.

According to Patrick Dziennik, Local CSX Trainmaster, the main rail yard for Owensboro is located off Alsop Lane near its intersection with Grimes Avenue. Siding space, team track space, and switching services are available. The rail yard primarily serves CSX train movements. CSX serves the Owensboro Riverport as well as the industries in the northwestern and northeastern quadrants of the urban area.

The CSX yard serves two train movements per day with an average of 60 cars per day traveling in and out of the main yard. Under current operations, the rail yard operates at full capacity with 165 cars. Major rail freight customers include Owensboro Grain Company, Lipton Company, Dart Polymers, Hampshire Chemicals Corp., Barton Brands Ltd., Weyerhaeuser, Lee Brick, Kinder Morgan, two lumber companies, and the Owensboro Riverport Authority.

### ***Bikeways***

As part of the *1975 Owensboro Urban Area Transportation Study*, a bicycle facilities plan was prepared which consisted of a network of bikeways to be developed by 1990. This plan was never implemented, being relegated to a low priority in the total transportation program. In 1977, the Green River Area Development District prepared the *Owensboro Urbanized Area Bicycle Facility Plan* to explore the bicycle's potential viability through the planned implementation of a safe, comprehensive bikeway system. In 1993, the Green River Area Development District prepared the *Owensboro Urbanized Area Bicycle Plan* that identified streets for bike lanes although the plan was ultimately not implemented. The staff of the Green River Area Development District is currently working on a new Bicycle & Pedestrian Master Plan that is expected to be completed and adopted by the local Transportation Advisory Committee in early 2018.

### **City Connections**

In 2004, the City Connections Committee was challenged to develop an intra-city system of bike lanes, sidewalks and trails that will extend the Adkisson Greenbelt Park and connect neighborhoods to schools, parks, business, and entertainment districts. Committee members included neighborhood alliance representatives, city staff, transportation and community health personnel, and citizens-at-large.

The purpose of this study was threefold: (1) to update and revise previous studies, (2) to prepare a **comprehensive bikeway system plan** to serve as the bikeway master plan guide for future

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transportation improvements and (3) to outline fundamental bicycle planning policies to emphasize safety, educational, and enforcement programs.

Recommendations from the plan included implementation of the *City Connections Plan* for bikeways and walkways in order to connect neighborhoods to schools, parks, business, and the Adkisson Greenbelt Park, making provisions for bikeway facilities to be used as an alternative or supplement to public facilities in new subdivisions and consideration of inclusion of appropriate bikeway facilities for new or improved roadway facilities during the planning and design stages, where practicable.

However, the City Connections plan never came to fruition. The City of Owensboro, in 2010, installed its first “Share the Road” bike route along a portion of Daviess Street into the downtown area. The route was installed to connect the Greenbelt Park to downtown and was heavily signed to increase the safety of cyclists. Typically, bike routes are installed in urbanized areas where roadways are not wide enough to accommodate dedicated bike lanes or where communities are not willing to give up on street parking spaces to accommodate bicycles. If signed properly to notify motorists, bike routes enable on-street parking to remain, while providing safe routes for cyclists.

### *Walkways*

Walking for exercise, health or recreational enjoyment has resulted in increasing numbers of pedestrians along our streets, roads and highways.

Where walkways exist in our community, they are generally adjacent and parallel to our streets. In some single-purpose areas -- schools, shopping centers, apartment complexes, parks and subdivisions -- walkways may adjoin parking lots or provide pedestrian connections between buildings. The City of Owensboro has completed the planned 15-mile Adkisson Greenbelt Park. Additional sections of, and new connections to, the greenbelt system are anticipated in the future.

The subdivision regulations of the Owensboro Metropolitan Planning Commission require the installation of walks in residential subdivisions with lots smaller than one-half acre; and, are not required in residential subdivisions where lots are one-half acre or larger. Generally walks are required in business and professional service zones, but generally are not required in industrial zones. As a result of these regulatory requirements, most new urban development has walkways. However, there are several examples of new business developments along major streets where walks have not been required because of conflicting open drainage systems or highway shoulders.

Our most important future need is to give greater consideration to the pedestrian and bicyclist when designing roadways. We should also look for alternatives to standard walkways adjacent and parallel to streets. Whenever possible, full consideration should be given to designing a walkway system on its own right-of-way (and away from streets) as a legitimate and desirable use of the land.