

SECTION 10

Transportation

10.1 Introduction

The ability to transport people and goods from one place to another is one of the basic components of the economic and social system upon which society depends. Consequently, the adequacy of a community's major street system will have a substantial impact on future vitality of a community. To ensure that the street system is able to operate efficiently and that it remains consistent with the Future Land Use Plan requires careful, long-range planning.

This section will review the street system of Merriam. It will include an explanation of the various types of streets and the designation of the major street system. Additionally, it will evaluate existing conditions and provide recommendations for improvements. The section also considers other forms of transportation including busses, rail, bicycle and pedestrian.

10.2 Standard Street Classifications

Merriam's street ordinance designates its street system by the following classifications: principal urban arterials, primary thoroughfares (main trafficways), local collectors, and other streets. This ordinance was developed in order to match the street classifications set by the State of Kansas for the purpose of issuing certain types of bonds to fund transportation projects. However, Merriam's street design criteria and subdivision regulations classify streets based on standards set by the American Association of State Highway and Transportation Officials (AASHTO). Map 10-1 shows the location and classification of streets in Merriam. These street classifications will be discussed below and compared to standards set by AASHTO.

AASHTO's street classification standards are based on the functioning of a hierarchy of vehicle origin-destination movements. Movement from one section of the City to another should be carried on arterials that are, ideally, uninterrupted corridors designed for the smooth flow of large volumes of traffic.



Railroad Crossing at Johnson Drive near Merriam Town Center

In this section:

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Sub-section movement occurs on collector streets that connect residential areas with arterial and local traffic generators. The lowest level of the system, local streets, carries the traffic flow to the abutting properties.

The following is a further explanation of these classifications and their design standards. Map 10-1 shows Merriam's Major Street System.

Freeway or Expressway (Principal Urban Arterial)

Freeways and expressways move vehicles between major destinations at high speeds. There should be no direct land access to these transportation networks and transportation access should be limited. In Merriam, this designation is the same as Merriam's classification set by the street ordinance of a principal urban arterial. There are two principal urban arterials:

1. I-35 (federal interstate)
2. Shawnee Mission Parkway (U.S. Highway 56) from I-35 to the east City limits.

Arterial Streets (Primary Thoroughfare)

Arterial streets should function to connect areas of principal traffic generation and important rural highways. They provide for distribution and collection of traffic to and from collector streets and local streets. The arterial street is given preferential treatment over collector and local streets in signing and signalization of intersections. It is preferable that local streets do not have direct access to arterials, but are provided access to the arterial through the collector street system. Parking on arterials should be restricted in all cases where it interferes with traffic flow. This designation is the same as Merriam's classification set by the street ordinance of a primary thoroughfare.

Access to private property along an arterial should be controlled to avoid hazards and the interference of traffic flow due to ingress and egress traffic movements. Access control can be achieved at differing levels through subdivision design, street design and curb cut regulations. Two such methods shown below include the use of a frontage road and the backing-up of lots along the arterial. A landscaped buffer along the arterial will help maintain the viability of abutting land for residential purposes.

Collector Streets (Local Collector)

Collector streets serve traffic desiring to travel between major arterial and local streets and are used mainly for traffic movement within residential, commercial and industrial areas. Collector routes provide the combined services of through traffic service and access to adjacent land, but they should be designed to discourage any long distance or continuous through traffic. The desirable maximum Average Daily Traffic (ADT) for collectors is 3,000. This designation is

the same as Merriam’s classification set by the street ordinance of a local collector.

Local Streets

The primary function of local streets is to provide access to abutting property. Continuity of local streets is not important and through traffic should be discouraged. Local streets should be designed to intersect with a collector street and provide easy access to adjacent property.

Private Streets

Merriam also has a number of private streets; these are mainly streets built within apartment complexes that are privately maintained.

Table 10-1 shows lists the streets by major category.

**TABLE 10 -1
Major Street Network**

PRIMARY URBAN ARTERIALS
I-35 (federal interstate)
Shawnee Mission Parkway (U.S. Highway 56) from I-35 to the east city limits
PRIMARY THOROUGHFARES
67 th Street, from west city limits to Antioch
75 th Street, from west city limits to east City limits
Antioch Road, from south city limits to north city limits
Carter Avenue, from 67 th Street to Shawnee Mission Parkway
East Frontage Road, from Eby to 75 th Street
Johnson Drive, from west city limits to east city limits
Merriam Drive, from Shawnee Mission Parkway to Antioch
Shawnee Mission Parkway, west city limits to I-35
West Frontage Road, from 75 th Street to 67 th Street
LOCAL COLLECTORS
47 th Street (County Line Road), from Switzer Avenue to Antioch Road
49 th Street, from Switzer Avenue to Antioch
53 rd Street, from Switzer Avenue to Merriam Drive
54 th Terrace, from Antioch to Hadley Road
55 th Street, from Switzer Avenue to Merriam Drive
60 th Terrace, from Antioch to Grandview
61 st Street, from Antioch Road to east city limits
61 st Street, from Mastin Avenue to Turkey Creek
62 nd Terrace, from Grandview Road to Antioch
64 th Terrace, from Eby Avenue to Antioch
67 th Street, from Craig Avenue to east City limits

LOCAL COLLECTORS
(continued)
69 th Street, from East Frontage Road to Antioch
69 th Street, from Switzer Avenue to Farley Avenue
Craig Road, from 61 st Street to 67 th Street
Eby Avenue, from 62 nd Terrace to 64 th Terrace
Farley Avenue, from 67 th Street to 69 th Street
Goodman Road, 61 st Street to Johnson Drive
Grandview Road, from 62 nd Terrace to Johnson Drive
Grandview Road, from 69 th Street to Antioch
Hadley Road, from Johnson Drive to 54 th Terrace
Knox Avenue, from 61 st Street to County Line Road
Mastin Street, from Johnson Drive to Shawnee Mission Parkway
Perry Lane, from Johnson Drive to 55 th Street
Slater Road, from Johnson Drive to Shawnee Mission Parkway
Switzer Avenue, from 47 th Street to 55 th Street
Switzer Avenue, from 69 th Street to 75 th Street

10.3 Evaluation of Standards

Merriam’s street right-of-way and pavement width greatly vary depending upon the age of the development and location. In Merriam’s older subdivisions, right-of-way widths may vary from 40 feet to 60 feet depending upon the location. Many of the collector and local streets were originally platted with little concern for contiguous future development or good basic residential design. These streets were also designed as ditch section streets with no curb and gutter or sidewalks.

In 1994, Merriam began improving collector streets by installing curb and gutter, sidewalks, and stormwater structures. Most of these improvement projects were funded through Merriam’s Capital Improvement Program (CIP). Street design guidelines used for these improvement projects (as listed in Table 10-2) were developed assuming new development, whereas most of Merriam’s street



improvement projects are in established neighborhoods. In order to match existing driveway grades, minimize disruption, and limit additional acquisition of right-of-way in established neighborhoods, it is recommended that the community consider reducing the minimum pavement width design criteria from 36 feet and 27 feet (from back of curb to back of curb) for collector and local streets, respectively. By

reducing minimum pavement width design criteria, this allows the City and design engineers to better match existing conditions for street improvement projects in established neighborhoods.

Merriam’s subdivision regulations provide street design criteria as listed in Table 10-2.

**Table 10-2
Street Design Criteria**

Classification	Minimum Right-of-Way (ft.)	Maximum Grade (%)	Flood Depth (ft.)*	Minimum Radius (ft.)
Primary Arterial With Median (includes limited access routes)	120	8	1.0	500
Primary Arterial Without Median	80	10	2.0	250
Collector	60	10	2.0	250
Local	50	12	2.0	100
Marginal Access or Frontage Road	50	12	2.0	100

Notes: Variances may be granted by the Planning Commission.
 *The finished grade for all streets and roads designed to provide for ingress, egress and circulation within a subdivision located in the floodplain shall be such that the flood depth for the 100-year flood will not exceed the flood depth provided.
 Source: City of Merriam Subdivision Regulations

10.4 Regional Traffic Study

The Mid-American Regional Council (MARC) conducted a travel-time study in 1996 and 1997 as part of a continuing effort to monitor the quality of transportation services in the Kansas City metropolitan area (KCMA). Previous traffic studies were conducted in 1929, 1944, and 1949 by Kansas City Missouri; in 1957 by Wilbur Smith and Associates; and in 1977, 1987, 1990, and 1993 by MARC. This study identified various speed-delay characteristics for the streets and highways within the KCMA, such as: travel times in corridors along the



Shawnee Mission Parkway

**How Much
Traffic Does
Merriam's
Roads Handle?**

*Traffic counts taken in April 1994 indicated a traffic volume of 19,324 vehicles on Johnson Drive on a typical weekday.

*Traffic counts indicate that Antioch Road immediately north and south of Shawnee Mission parkway carries an average of 13,250 vehicles per day.

interstates and freeways allow travel over long distances in the shortest time, and comprise the most desirable travel routes even during peak periods; travel times in corridors along arterial systems indicate that problems do exist in some corridors, especially east/west travel; and traffic congestion is the predominant cause for delay for freeway routes and traffic signal delay is the governing cause for delay on principal and minor arterials, such as Shawnee Mission Parkway.

Because traffic signal delay was identified as the major cause for delay on arterials, MARC is currently conducting a follow-up regional study to identify whether synchronizing traffic signals regionally along arterials will improve regional traffic flow and travel time. Shawnee Mission Parkway is one of the corridors currently being evaluated because it traverses through 10 jurisdictions. It is the primary east-west highway in northern Johnson County, providing access into the midtown and Plaza areas of Kansas City, Missouri and to the I-35 corridor. The results of the study should be available in 2000 and could result in increased traffic flow and improved circulation along this corridor.

Another proposed project which will improve traffic circulation along Shawnee Mission Parkway is Merriam's street improvements project to be completed at the intersection of Shawnee Mission Parkway and Antioch Road. Traffic counts indicate that Antioch Road immediately north and south of Shawnee Mission parkway carries a very heavy volume of traffic, with an average of 13,250 vehicles per day. Proposed improvements include construction of an additional length for left turn lanes on Antioch Road both south and north of Shawnee Mission Parkway. A right turn lane for northbound traffic on Antioch Road is also included. A study conducted by Bucher, Willis & Ratliff in October 1998 determined that redesign of this intersection would result in a 51% reduction of vehicle delay during each a.m. peak hour, and a 68% reduction of vehicle delay during each p.m. peak hour. This project is a Johnson County Assisted Road (CARs) project with 50% CARs funding for construction and inspection.

10.5 Discussion of Potential Improvements

Below are the locations in Merriam which have been identified as requiring future improvements in order to promote better traffic flow and circulation. These locations include:

1. The intersection of Grandview Road and Johnson Drive;
2. The at-grade railroad crossing at 75th Street and Farley;
3. The at-grade railroad crossing at Johnson Drive, just east of Merriam Drive; and
4. Traffic calming in the Historic District of Downtown Merriam.

Grandview Road/Johnson Drive

Grandview Road intersects Johnson Drive just west of the traffic light at the I-35 entrance and exit ramp. Due to the close proximity of I-35 and increased traffic due to the addition of Merriam Town Center, it is difficult to turn west from Grandview Road onto Johnson Drive during peak traffic flow conditions. Traffic counts taken in April 1994 indicated a traffic volume of 19,324 vehicles on Johnson Drive on a typical weekday with an a.m. peak hour from 7:15 to 8:15 and a p.m. peak hour from 5:00 to 6:00. With the possibility of additional commercial development along the south side of Johnson Drive, and increased traffic due to the proposed expansion of City Hall and the renovated Aquatics Center, future realignment of Grandview Road Drive may be needed. Realignment could consist of reconstructing Grandview Road so that it intersects Johnson Drive to the east at the intersection of the traffic light located at I-35's entrance and exit ramps. In order to realign Grandview Road at this intersection, acquisition of land could be needed. Street improvements along Grandview Road would also relieve some of the traffic flow along Antioch Road between Johnson Drive and Shawnee Mission Parkway. This recommendation is included on the Future Land Use Map in Section 7. Further study of the exact alignment is needed.

West Frontage Road at 75th Street

The second area identified is the intersection of West Frontage Road at 75th Street. Due to increased traffic flow along West Frontage Road as a result of recent development, the community should consider connecting West Frontage Road at 75th Street and Farley in the future. A study should be done to evaluate whether the frontage road should be elevated at 75th Street and tied into the railroad tracks at grade. The City should consider the Capital Improvement Program as a funding source.

Johnson Drive East of Merriam Drive

The third area is the at-grade railroad crossing at Johnson Drive, just east of Merriam Drive. Due to the close proximity of Interstate 35, the railroad crossing, and the intersection of Merriam Drive and Johnson Drive, traffic flow is very

congested and restricted when a train passes through. Approximately 15 trains travel through across Johnson Drive every day and this number will increase once the heavy rail commuter system is implemented. Unfortunately, there is no clear solution for this crossing area. An overpass is not feasible over I-35 due to the limited distance in which to overpass I-35 and meet the existing grade at the intersection of Johnson Drive/Merriam Drive. Some of the traffic congestion may be alleviated once the Antioch/I-35 overpass is completed.

Historic District of Downtown Merriam

The history of this area of Merriam, the Merriam Community Center, the historic structure occupied by Pittman Moving and Storage and the variety of small business in the immediate vicinity, give the Historic Downtown District an important role as the nucleus of Downtown Merriam. Most of the buildings in this district are at or near the property line. The combination of buildings and a number of enhancements to the streetscape provide an opportunity to restore a



Downtown Merriam

vibrant public space. This will contribute to a visitor friendly image for this district and the study area as a whole. To enhance the Historic Downtown District as the heart of the Downtown Merriam revitalization program, specific improvements are recommended for traffic calming. Merriam Drive in its current configuration passes close to the front doors of the retail businesses between Johnson Drive and 57th Street leaving limited pedestrian access along the street. Conceptual improvements include reconfiguring Merriam Drive to a 3-lane configuration with two through lanes (1-north and 1-southbound) and a center, turn lane. Further, the three-lane configuration should improve traffic flow by reducing the confusion and backups that occur when left-turns are made in the existing four-lane configuration. This reconfiguration will allow sidewalks along the retail frontage to be increased in width, improving pedestrian safety, customer accessibility to business entrances, and will further help to define the Historic Downtown as a pedestrian and vehicular business district rather than a vehicular through-way. Selected pedestrian crosswalks will be defined with distinct pavement treatments. Sidewalks throughout the district will be developed with a combination of concrete and decorative concrete pavers and public seating in selected locations. The combination of these improvements in conjunction with angled, on street parking in selected areas will slow traffic and increase visitor convenience and friendliness.

10.6 Public Transportation

Johnson County Transit provides one public transportation route (Route A) that passes through Merriam 19 times per day on its north or south trip. This is one of Johnson County Transit's highest producing routes in the area with approximately 50 riders per day. The route begins at Corporate Woods at 5:47 a.m. and runs every 30 minutes until 9:22 a.m. From Corporate Woods, the bus travels north on Antioch Road to Shawnee Mission Parkway, and then east on Shawnee Mission Parkway to a transit center located at 6000 Lamar in Overland Park. At the transit center riders may either change busses or continue traveling to the downtown area, which is the final destination of Route A. In the evening, Route A leaves Corporate Woods at 3:08 p.m. and runs every 30 minutes until 7:19 p.m. Riders may get on the bus at any location throughout this route, even though there are no scheduled bus stops.

Johnson County Transit is also planning a 2-year pilot commuter rail project to utilize the heavy rail system for public transportation. This pilot project is in the preliminary engineering phase and consists of leasing the railroad tracks from Burlington Northern-Santa Fe (BNSF) to transport commuters from Olathe to Union Station. Three or four stations will likely be constructed along this route which will serve as passenger terminals. The land for these stations will be leased over the 2-year pilot period until it is determined whether future use of the heavy rail system is economically viable and is supported by residents of the Kansas City metropolitan area. Johnson County Transit is currently evaluating locations in Merriam along the railroad tracks for lease of land for a temporary passenger terminal station. Potential locations currently being evaluated by Johnson County Transit include the general area north of Johnson Drive and east of Merriam Drive adjacent to the railroad tracks.

Once the commuter rail system is constructed, the current public transportation routes will be reconfigured so they feed into the commuter rail system. After the pilot period ends, Johnson County Transit will evaluate whether additional bus routes or heavy rail routes or stations are needed. The cost for riders on either the bus or commuter rail routes may be subsidized by cities or employers in order to provide incentives for laborers from Kansas City, Missouri to work in Johnson County. Cost subsidizing may be a viable option for companies who cannot find enough employees to operate their businesses due to the current labor shortage.

10.7 Improved Bicycle and Pedestrian Access

Pedestrians presently do not have a pleasant and welcoming space in many commercial corridors and shopping areas in Merriam. Some neighborhoods do not have sidewalks to encourage walking. Merriam's streets do not encourage biking. The Capital Improvement Program includes sidewalks to be installed or improved when streets are improved in many neighborhoods. Consideration

should be given to how these paths link activity centers such as schools, retail businesses, parks and office buildings to residential neighborhoods. Internal pedestrian movement in retail shopping areas should also be considered in the design. A good example of a connected mixed-use corridor is 67th from I-35 to Antioch. Sidewalks connect residential to office, retail and light industrial areas.

10.8 Conclusions

Merriam major street system is in place. A few areas need to be evaluated once the future land use plan is developed to determine ways to transport people and goods more effectively. The specifics of the street standards will need to be evaluated by the community weighing the need for creating a sense of neighborhood and pedestrian scale versus the effective movement of vehicles throughout the community. Section 2 Planning Framework and Section 7 Future Land Use identify ways Merriam can encourage the use of alternative modes of transportation to the automobile.