



CITY OF
Siloam Springs
It's a natural.

**MASTER STREET PLAN
SILOAM SPRINGS, AR**

2014

ADOPTED BY BOARD OF DIRECTORS

Date April 15, 2014

ORDINANCE No. 14-08

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1.0 Purpose

In accordance with Resolution No. 11-08 adopting a Comprehensive Plan, the City of Siloam Springs (hereinafter the City) has developed and adopted a Master Street Plan (hereinafter the "MSP") to maximize the efficient, safe, and orderly flow of traffic through and within the City. The MSP (text and map) delineates a street system to service Siloam Springs' current and future needs, balancing physical constraints, the needs of the individual, and the needs of the general public to produce an efficient, safe, orderly, and economical street system for the citizens of Siloam Springs, Benton County, and the State of Arkansas.

The MSP serves as a framework for the efficient growth and development of the City providing reasonable guidelines for street development. Among its purposes are to coordinate private and public sector development activities and to serve as a framework for funding improvements and additions to the street system, as growth demands. The MSP is also influenced by the 2035 Northwest Arkansas Regional Transportation Plan, which was developed through an exhaustive public participation process by the Regional Planning Commission to coordinate street planning for all cities in Benton and Washington County.

No specific timeframe has been applied to the MSP, as it is designed as a "response oriented" document. That is, street improvements will be made through the efforts of both public and private sectors as property is developed. The location of designated streets, which do not physically exist at the time of the MSP's adoption, are shown as general corridor locations. At the time of development of an area, the Board of Directors will approve a street's specific location, taking into consideration both topography and economics. Furthermore, the Board may approve revisions to the stated standards and alignments through a subdivision review process in order to address site-specific concerns and interests while assuring that the goals of the MSP are achieved.

The City herein locates and classifies streets in accordance with the Siloam Springs 2030 Comprehensive Plan and the Three Year Street Capital Improvement Plan so vehicular traffic and the circulation of people may be convenient, safe, and free from congestion. Ensuring that this MSP is implemented will secure efficient and economical development, public safety, order, convenience, prosperity, and the general welfare of the community.

2.0 Definitions

For the purpose of this MSP, the following words and terms shall be used, interpreted and defined as set forth in this section. Definitions not expressly prescribed herein are to be construed in accordance with customary usage in municipal planning and engineering practice.

AASHTO

The American Association of State Highway and Transportation Officials.

Access Management

The regulation of access via interchanges, intersections, driveways, and median openings on a roadway. Its objective is to enable access to land uses while maintaining roadway safety and mobility through the control of access locations, design, spacing and operations.

Activity Node (Center)

The location where vehicle trips are frequently generated. Examples include large retail areas, schools and office complexes.

Adequate Public Street

Any street which collects vehicular traffic from a significant development or housing addition and is used for calculating street fees.

ADT

Average Daily Traffic. The average number of vehicles passing a specific point in each direction on a street within a 24-hour period.

AHTD

The Arkansas Highway and Transportation Department.

Applicant

Any person, organization, business, or other legal entity who petitions the City for permission to subdivide or develop unimproved land.

Arterial

A street or right-of-way so classified by the street standards in the MSP, which is a moderate to high-capacity street or roadway with traffic volume capacity below a limited access highway. Collector streets generally feed into arterial streets.

Capacity

The maximum number of vehicles reasonably expected to traverse a point or segment of a lane or roadway during a specified time period.

Center Line

An imaginary line at the crown of a street and/or at the midpoint of the pavement width.

City

Shall refer to the City of Siloam Springs, AR.

Collector

A street or right-of-way so classified by the street standards in the MSP, which is a moderate capacity street with traffic volume capacity below an arterial street. Local streets generally feed into collector streets.

Continuous Left Turn Lane

The center lane of a three-lane or multi-lane roadway that allows continuous mid-block left turning movements in either direction.

Curb Radius

The degree of sharpness or curvature that exists at a street intersection corner. (See diagram below)

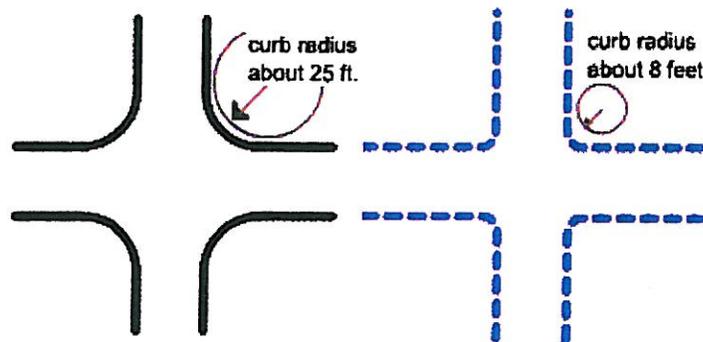


Diagram courtesy of <http://www.missionped.org/archive/curbrad.html>

Design Speed

The highest, continuously safe, vehicular speed as governed by optimal driving conditions, street design and the physical features of the street.

Developer

Any individual or legal entity required to possess an approved development permit.

Development

Any construction as defined in Chapter 54 of the Siloam Springs Municipal Code.

Egress

The act of exiting an enclosed area.

Exceptional Traffic

Vehicles with unusually harmful impacts on standard streets due to weight, height, width, tread, axle load, or similar characteristics. These vehicles generally require special standards.

Existing Street

Any improved public street or right-of-way, including all street grading, paving, base, right-of-way widths, curbing, guttering, drainage, sidewalks, and all other street specifications listed in the MSP.

Grade or Gradient

The pitch of a slope often experienced as a percent tangent, or rise over run.

Horizontal Radius

The radius of the horizontal curve of a road, measured at the centerline.

Ingress

The act of entering into an enclosed area.

Level of Service (LOS)

In order to convert design criteria (volume to capacity ratios, travel speeds) to a qualitative evaluation of traffic operations as perceived by the roadway user, LOS

standards are established. These standards measure the operating efficiency of each roadway or segment thereof. LOS is designated by a letter rating system in which "A" is the most desirable and "F" is the least desirable. The description of traffic operations occurring for each LOS is identified as follows.

- LOS "A" describes a condition of free traffic flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by motorists' desire, speed limits and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles and motorists can maintain their desired speeds with little or no delay. For highways, traffic volumes are less than 35 percent of the roadway capacity and speeds are unrestricted other than by law.
- LOS "B" represents stable traffic flow, with operating speeds restricted somewhat by traffic conditions. Motorists still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. Volumes are normally less than 50 percent of the roadway capacity and speeds of 55 mph or greater are readily maintained on controlled access highways.
- LOS "C" is still in the zone of stable traffic flow, but speeds and maneuverability are more restricted by the higher volumes. Most motorists are restricted in their freedom to select their own speed, change lanes or pass. A relatively satisfactory operating speed is still obtained. Highways operate at 50 mph or greater and volumes are less than 75 percent of capacity.
- LOS "D" approaches unstable traffic flow, with tolerable operating speeds being maintained, although considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Motorists have little freedom to maneuver and comfort and convenience are low, but conditions can be tolerated for short periods of time. Level "D" operations on a highway occur when volumes are less than 90 percent of capacity and speeds are restricted by traffic volume to 40 mph.
- LOS "E" represents operations at even lower operating speeds and with volumes at or near the capacity of the highway. Speeds are typically 30 mph and 100 percent of capacity is reached. Traffic flow is unstable and there may be stoppages of momentary duration.
- LOS "F" describes forced flow operation at low speeds where volumes exceed capacity. These conditions usually result from vehicle queues backing up from a restriction downstream. Speeds are substantially reduced and stoppage may occur for short or long periods of time due to downstream congestion. In the extreme, both speed and volume can drop to zero.

Local

A street or right-of-way so classified by the standards in the MSP, which is a modest capacity street with traffic volume capacity below a collector street. Alleyways generally feed into local streets, which then feed into collector streets.

K-Value

A value describing the rate of vertical change through a curve. More precisely, the value representing the horizontal distance along a curve required for a one-percent change in gradient ($K = \text{vertical curve length} / \text{absolute difference in grade}$). Also known as the vertical curve coefficient.

Median

A dividing strip, often landscaped, between opposing lanes of traffic.

Multi-Use Path

A path intended for both pedestrians and other non-motorized vehicles.

Neighborhood

A residential area consisting of several dwellings with a particular character and identity.

New Street

An improved public street or right-of-way, not yet constructed, including all street grading, paving, base, right-of-way widths, curbing, guttering, drainage, sidewalks and any other street specifications listed in the MSP.

No Outlet Street

A street which terminates with no secondary egress or ingress.

Off-site Street

The portion of a street or right-of-way that does not enter the boundaries of a development and is not a residential street abutted on both sides by the development, but provides supporting-street service to the development.

On-Site Street

The portion of a street or right-of-way that enters or is included within the boundaries of a development.

Pavement Width (cartway)

The surface portion of a street, also referred to as the cartway, measured from the back of curb or edge of pavement on one side of a street to the back of the curb or edge of pavement on the other side of the street.

Proportionate Share

A cost contribution a developer shall pay for certain street improvements, as calculated in this MSP.

Public Carrier Street

The first public street that intersects an Adequate Public Street as traffic egresses from a development, defined for the purpose of calculating street fees.

Right-of-Way

The strip of land used for a street dedicated for public use, including land on either side of the cartway.

Service Volume

The maximum numbers of vehicles that can pass over a given section of land or street during a specified time period while operating conditions are maintained in accordance with the selected or specified LOS.

Sight Distance

The visibility distance required allowing a motorist to execute safe passing, crossing, turning, or stopping maneuvers. See also Municipal Code Section 86-1(d)(1)-(4).

Street Costs

The costs of street construction, including right-of-way costs, drainage, grading, appurtenances, paving, curb and gutter, lighting, utility relocations, labor, signage, trails, sidewalks, and all other costs of construction by standards in the MSP.

Subdivision Process

The surveying, design, mapping, review, and recording of a plat to indicate the preliminary or final division of a tract of land into lots or parcels. A subdivision is reviewed as required by the City's Subdivision Regulations.

Super-Elevated

The condition where a road or speedway is raised or banked to one side in order to facilitate high speed traffic at a curve.

Supporting Street Service

The part of a street that is demarcated by two points for the purpose of calculating street fees as defined as part of this MSP.

Through Traffic

Non-local trips that do not terminate in the area through which they are traveling.

Urban Area

An area within the City limits, or within more than one city when there is a common city boundary, including adjoining incorporated and unincorporated areas which meet certain population, size, or density criteria (as defined by the U.S. Census Bureau).

Volume/Capacity (V/C) Ratio

The ratio of traffic demand (volume) to street capacity for a traffic facility.

3.0 Street Classifications

In order to provide a street network that will operate efficiently, it is important to recognize the dual traffic function of urban streets. The street system of any given community has two major traffic functions: moving traffic between dispersed points and providing access to individual properties. Because of the opposing characteristics of these two functions, no single street type can safely or efficiently meet all traffic needs. For instance, a major street designed for high speed and high traffic volume cannot function safely or efficiently if traffic movements to and from adjacent properties consistently interrupt traffic flow. Therefore, criteria for street classifications can aid the City in defining streets where land access is a primary function and those streets where traffic movement is the primary function.

There is no simple method for classifying an existing street and there does not seem to be any method that will fit universally. However, some basic criteria exists which ensures that planned streets are consistent with the specified street classifications. The three basic criteria proposed for the City system are: (1) function, (2) spacing, and (3) recommended right-of-way width.

3.1 AHTD Functional Criterion.

The purpose of the AHTD functional criteria, when relating to new development, is to establish the street type early in the development process so that reasonable configuration, spacing, and right-of-way can be established.

Functional criteria are also used to define street design types of established streets. These criteria cannot always apply to existing areas without conflict. In some cases a street may operate at a different level than for what it was originally designed due to the intensity of development or other circumstance. In such cases, these streets might be modified to accommodate the additional traffic, traffic rerouted to alternative streets, or a lower LOS might be accepted on the street.

It is important to note that where traffic volumes exceed street design capacity, it is not necessary to reclassify the street to a higher functional class. The City, by establishing the street function, affects the intensity level of future land use activities that may be permitted along the street (see the chart on page 15). For example, more intense activities may be placed along major streets and less intense activities along minor streets.

3.1.1 Spacing Criteria.

The spacing criteria regulates the frequency of intersections or drives that access the street. The criteria are important as a means for conveying traffic efficiently and conveniently. Intersection spacing results in a street system where motorists can easily maneuver on streets that carry high volumes of cross-town traffic. Higher traffic volume streets require greater intervals between intersections of streets of the same or higher functional class.

The spacing criteria are also used as a means for limiting public and private expenditures for street construction. By establishing intersection spacing, the need for larger, more expensive, streets is reduced. Spacing intervals are established according to cross street functions. For example, minor streets, which have low volume traffic, will be spaced closer than major streets, which carry high volumes.

Finally, the spacing criteria ensures a comprehensive street network. Without consistent spacing, traffic movement through and within the urban area would be difficult. The spacing criteria will ensure that major streets will not be over or under represented in certain areas. Furthermore, it ensures that minor streets will adequately serve to channel traffic to and from high volume streets. See the City's Subdivision Regulations Sec. 87-36 for more information on the spacing criteria.

3.1.2 Width Criteria.

The width criteria are used to ensure that streets have an adequate capacity to handle expected traffic volumes. This criteria is in concert with the functional criteria. For example, streets which move high volumes of traffic for long distances require greater width than streets that move traffic to, from, and within residential areas. See the design standards, Sec. 4.0, for more information on width criteria.

3.2 Street Classifications

This MSP establishes six (6) functional classes of streets: Principal Arterial, Minor Arterial (Parkway), Collector, Major Local, Minor Local, and Alleyway. Minor Local and Alleyway are defined in the City's Subdivision Regulations. All street classifications must be designed to one of the six street classes. As development occurs along existing or future street locations, the developer is required to improve the

affected street to the needed design standard as determined by the City Engineer, or the developer must contribute a proportional share to the Three Year City Capital Improvement Plan.

As part of the MSP, a bike lane (a stand-alone lane designated only for bicyclists) is an optional design on any street classification, except for major arterials and alleyways. The specific design will depend on current and future needs and will be determined by the City Engineer and approved by the Board of Directors. Generally speaking, bike paths will be designated as part of the sidewalk within the street right-of-way. Furthermore, street standards may be altered, at the discretion of the City Engineer, in pedestrian sensitive areas.

For the purposes of administering street development fees for the utilization of City streets by new developments, the City has adopted a LOS "C" as its street service capacity. See sections 4.9 and 4.10 of the MSP.

3.2.1 Principal Arterial

The primary function of a Principal Arterial is to serve through traffic and to connect major traffic generators or activity nodes within an urbanized area. As these roads are designed for through traffic and are generally located three or more miles apart, dedication of additional right-of-way is required to allow for future expansion to six through lanes plus left and right turn lanes. Generally a right-of-way of eight-nine (89) to one-hundred (100) feet is recommended, but may vary due to topography, floodway, or other constraints. A landscape buffer with sidewalks is required on each side of the right-of-way with the potential of a divided median at the centerline (or center turn lane). On-street parking is prohibited. The service capacity of a Principal Arterial Street at LOS "C" shall be 30,000 vehicles per day (35,000 vehicles per day with left turn bays).

3.2.2 Minor Arterial (Parkway)

The Minor Arterials provide the connections to and through an urban area. Their primary function is to provide short distance travel within the urbanized area. Generally these streets are spaced at one-mile intervals and have a recommended right-of-way width of seventy-eight (78) feet to one-hundred (100) feet, but may vary depending on topography, floodway, or other constraints. As Minor Arterials are high volume roads, a minimum of four (4) travel lanes is required with landscape buffer and sidewalks on each side of the right-of-way with the

potential of a divided median at the centerline (or center turn lane). A divided center lane is strongly encouraged for access management and safety. On-street parking is prohibited. The service capacity of a Minor Arterial Street at LOS "C" shall be 18,000 vehicles per day (22,000 vehicles per day with left turn bays). The service capacity of a Parkway at LOS "C" shall be 20,000 vehicles per day (24,000 vehicles per day with left turn bays).

A lesser design classification may be acceptable in areas of rugged topography or other constraints. This lesser standard should only be used in cases where unusual conditions would substantially reduce or eliminate direct access to the street and the surrounding development density.

3.2.3 Collector

A Collector Street functions as the traffic connection from residential streets to Arterials or to activity centers, with the secondary function of providing access to adjoining property. The Collector system should not be continuous but should direct traffic to Arterials. Collectors are generally spaced a quarter to half mile apart. The recommended right-of-way width is sixty-seven (67) to eighty (80) feet; however, during any subdivision platting process, the City reserves the right to specify the exact locations and facility needs as determined by the City Engineer and approved by the Board of Directors. The service capacity of a Collector Street at LOS "C" shall be 6,000 vehicles per day (9,000 vehicles per day with left turn bays).

The spacing of Collectors may be decreased and/or the right-of-way and paving surface increased due to the density requirements of residential or commercial development or other large traffic generators. A landscape buffer with sidewalks is required on each side of the right-of-way with the potential of a divided median at the centerline (or center turn lane). On-street parking is prohibited.

3.2.4 Major Local

A Major Local Street is defined as a Collector street that primarily fronts residential and light commercial property with a recommended fifty-two (52) to seventy (70) foot right-of-way. On street parking is permitted on a case by case basis. A landscape buffer with sidewalks is required on each side of the right-of-way. Internal access streets for commercial

developments may be dedicated to the City, but must be designed to Major Local standards. Access streets may employ traffic calming measures. The service capacity of all Local Streets at LOS "C" shall be 5,000 vehicles per day.

3.2.5 Lower Street Classes (Subdivision Regulations)

Minor Local and Alleyways are considered Lower Street classes, with lower design standards. The design standards for Minor Local and Alleyways are found within the Siloam Springs Subdivision Regulations. See also Section 4.8 of the MSP.

4.0 Design Standards and Specifications

Street design standards promote traffic safety, continuity in street improvements, and orderly development of the street system. Right-of-way widths accommodate adequate space for travel lanes plus adequate space between the curb and the adjacent property line to allow for placement of multi-use paths and utilities services, including storm sewers, sanitary sewers, gas, electricity, telephone, and cable lines. The typical standards are presented in the following table, for cross sections go to pages 25 thru 26. Note: Some street designs may require cross sections to be altered to accommodate unique site conditions, especially at street intersections.

As stated in the 2035 Northwest Arkansas Regional Transportation Plan (page 48), the City Engineer may require additional right-of-way for areas containing significant topographic reliefs, horizontal curve tangents, intersections, turning lanes, acceleration and deceleration lanes, utilities, sidewalks, sight distance, poor visibility, and may require upgrading the street class in areas where increased traffic generation demands additional street capacity.

Notes for the following on Table 4.1:

¹ Except in constricted areas where reduced standards apply.

² All minimum design standards shall comply with AASHTO Policy Design Manual, latest Edition.

³ For Use Unit descriptions, go to Municipal Code Chapter 102-41.

⁴ Two lanes with widened intersections.

4.1 Design Specifications²

Design Consideration (assume feet if not otherwise denoted)	Principal Arterial	Minor Arterial	Collector Street	Major Local
Design Speed (mph)	55	50	45	35
Design ADT	35,000+	22,000+	9,000+	5,000
Minimum Grade at Centerline (%)	1	1	1	1
Maximum Grade at Centerline (%)	5	7	10	12
Minimum Stopping Sight Distance	495	425	360	250
Minimum Horizontal Radius at centerline	1,835	1,400	900	455
Minimum K value – Crest Vertical Curve (ft/%)	114	84	61	29
Minimum K Value – Sag Vertical Curve (ft/%)	115	96	79	49
For super-elevated	Per AHTD	Per AHTD	N/A	N/A
Minimum Horizontal Tangent Distance between Reverse Curves	300	200	100	50
Standard Right-of-Way	90	80 ¹	70 ¹	60 ¹
Minimum Paved Street Width (B of C)	59 ⁴	48	37	32
Minimum Curb Radius	50	40	30	30
Number of Lanes	5	4	3 or 2 ⁴	2 ⁴
Suitable Land Use Units ³	1, 5, 8 thru 22.	1, 4 thru 22	1, 4 thru 19, 21, 22	1 thru 12, 19

4.2 Intersections.

4.2.1 Angles.

Intersections should be as nearly at right angles as possible; intersections at an angle of less than seventy-five degrees (75°) are discouraged. A greater curb radius may be required by the Board of Directors. A maximum of two streets should intersect at a common point.

4.2.2 Street Jogs.

Street intersections shall not jog between center line offsets less than one-hundred and twenty-five (125) feet.

4.3 "No-outlet" streets.

4.3.1 Turnaround area.

Paved minor terminal streets and cul-de-sacs or courts designed with one end closed ("no-outlet streets") shall, at the closed end, provide a circular turn-around area of not less than ninety-six (96) feet diameter from face to face of the curb.

4.3.2 Temporary turnaround area.

Temporary turn-around options are allowed as listed in the Arkansas Fire Prevention Code, provided that they are of a compacted base sufficient to handle 75,000 pounds of fire apparatus.

4.3.3 Street length.

- a. No "no-outlet" street shall exceed five-hundred (500) feet in length, except by variance issued by the Board of Adjustment upon the Board's finding of a hardship arising from unique characteristics of the property.
- b. No variance shall be issued for any "no-outlet" street exceeding seven-hundred and fifty (750) feet in length.
- c. "No-outlet" streets shall provide a five (5) percent increase in turn-around diameter, and a fifteen (15) percent design increase in water-flow for firefighting purposes, for each one-hundred (100) feet of length beyond five-hundred (500) feet.
- d. The length of "no-outlet" streets shall be the distance of the street centerline measured from the center of the closed-end turn-around, to centerline of the nearest through street that intersects the "no-outlet" street.

4.4 Private Streets.

There shall be no private streets platted in a residential subdivision, unless in the P-D zone, pursuant of Municipal Code Sec. 102-56(g).

4.5 Points of Access.

The Board of Directors may limit the points of access on arterial and/or collector streets or require shared access driveways.

4.6 Shortcuts.

The location and alignment of local-service streets should discourage shortcuts between major thoroughfares.

4.7 Required Street Improvements.

4.7.1 Improvements.

Streets shall be improved by the applicant by the requirements established by the Board of Directors in accordance with City standards for acceptance of dedication and maintenance of streets.

4.7.2 Curbs, Gutters, and Sidewalks.

- a. All streets shall include curbs, gutters, sidewalks, and street lighting, unless they access residential lots that exceed one acre that are in the R-E zone or are outside of the City limits, but within the City's Planning Area. In such cases, the City Board of Directors shall establish the reduced standards, provided that sidewalks shall still be included.
- b. Street lighting poles and fixtures must be approved by the City's Electric Department and will be installed by the City at the applicant's expense.
- c. Curbs and gutters shall conform to City standards.
- d. All street improvements shall conform to storm water and drainage standards as set forth in the most recent update of Siloam Springs Drainage Manual.

4.7.3 Street Signs.

The City will install street signs at the applicant's expense.

4.8 Alleyways.

4.8.1 Placement.

Alleyways may be required at the rear of commercial lots. Alleys are permitted in residential blocks when the applicant provides satisfactory evidence to the Planning Commission and the Board

of Directors for their need. Intersections, sharp changes in alignment, and dead-ends shall be avoided when possible.

4.8.2 Design Standards.

Consult the City's Subdivision Regulations for alleyway design standards.

4.9 New or substandard streets.

4.9.1 Construction.

Developer shall construct new on-site and off-site streets, and shall improve existing on-site and off-site streets not meeting MSP standards, as follows:

- a. Residential Streets. If the development plan provides for a Minor Local Street, the developer shall construct the street according to Subdivision Regulations standards, which cost shall be borne by the developer.
- b. Major Local or Larger Street. If the development plan and MSP provide for a Collector or larger street, and
 1. The street is listed on the City's Three Year Street Capital Improvement Plan as a:
 - i.) Substandard Street (existing): The developer shall pay a proportionate share of the costs of improving the street to MSP or Subdivision Regulation standards, which costs shall be reasonably estimated by the developer, subject to the approval of the City Engineer.
 - ii.) New Street: The developer shall construct the street according to Major Local or larger standards as shown on the MSP, which cost shall be shared by the City and the Developer. Upon City's inspection and approval of the completed street, the City shall reimburse developer for the difference in cost between constructing to Local Street standards compared with the costs of constructing a Collector (or larger) standard shown on the MSP map. If the traffic impact of the new development exceeds Local Street standards, the City shall reimburse developer only for any difference in cost between constructing to MSP Collector Street standards (for the development's traffic load) compared with costs of constructing the Arterial or larger street as shown on the MSP map.
 - iii.) Construction shall comply with bid procedures governing City projects.
 2. The street is not listed on the City's Three Year Street Capital Improvement Plan:

-
- i.) The developer shall construct the street to MSP standards for the development's traffic load and shall dedicate to the City the right-of-way required for any larger thoroughfare shown on the MSP.

4.9.2 Design Standards.

The design and location of street grading, curbs, pavement, drainage, and public utilities shall be reasonably directed by the Administrator or his designee in order to enhance its compatibility with subsequent construction of any larger thoroughfare shown on the MSP.

4.9.3 Safe Ingress and Egress.

The developer shall construct on-site or off-site streets as necessary to provide safe ingress and egress from the development to an *adequate public street* (defined on MSP Sec. 2.0).

- a. Safe ingress and egress shall mean a thoroughfare that:
 - 1. is sufficiently wide to allow safe passage of vehicles ordinary for that location;
 - 2. has shoulders or similar areas sufficient for safe passage of pedestrians ordinary for that location;
 - 3. has a paved, uniform surface without irregularities dangerous to vehicles tires or to drivers steering control.

4.10 Recently constructed streets.

The developer shall pay a proportionate share of the City's costs of improvements to any on-site or off-site street existing, or under construction, at the time of the development permit, provided that the City's costs were incurred within seven (7) years preceding the permit, or were incurred following the permit under circumstances not addressed in subparagraph (4.9) above.

4.10.1 Extraordinary costs.

Developer shall pay, as additional costs, all extraordinary expenses of street construction or maintenance required by the development's exceptional traffic.

4.10.2 Proportionate share.

The consulting engineer shall submit an itemized construction estimate of the developer's proportionate share of the street improvements. A development's proportionate share of street costs shall be calculated as:

$$PS = (CLF \times SSS) \times P$$

where **PS** = proportionate share
CLF = street cost per linear foot (estimated or actual cost)
SSS = supporting street service
P = percentage of street traffic load generated by the development, calculated as:

$$P = T/SC \quad (\text{where } T = \text{Average trip-ends generated by the development, as provided by the International Traffic Engineers (ITE) manual, and}$$

SC = service capacity (traffic) of the street, as provided by the MSP.)

4.10.3 Supporting street service. Supporting street service shall mean the public street between points A and B, as follows:

- a. Point A: The midline of the street where vehicles leaving the development first gain access to any off-site public street, a "public carrier street", as determined by the City Administrator's reasonably-estimated route(s) of the vehicles;
- b. Point B: The midline of the first adequate public street intersected by the public carrier street, as determined by the City Administrator's reasonably-estimated route(s) of the vehicles.

4.10.4 Property value. Property value shall be fair market value determined at the time of preliminary plat approval, plus interest at the lowest average rate paid on U.S. Treasury bills.

4.11 Access Management

Access Management is the regulating of vehicular access to streets in such a way as to preserve vehicular and pedestrian safety as well as reasonable traffic flow, while permitting needed access to adjoining land uses. There are different levels of access management that are employed based on traffic demand and LOS of any given street or roadway. These are high, medium, and low levels of design implementation. High standards use a center median to restrict left turn movements to signalized intersections or designated mid block u-turn locations. Medium standards consolidate driveways and parking areas into single access points in order to limit street curb cuts. Finally, low standards limit access at problematic intersections. All levels of access management should be used in various forms for street construction under this plan and regulated specifically through land use controls.

5.0 Street System and Location

Streets not classified as an Arterial, Collector, or Major Locals are considered Minor Local/Residential Streets. The following list shows existing and proposed streets which will ultimately be constructed or upgraded to the identified classification. Not all of the identified streets will be initially constructed to the shown standards, but may be phased to the identified classification as traffic demands requires. Full right-of-way will be procured upon initial construction.

As development occurs in the City, new streets may be proposed that may not be identified on the current street system. These streets are required to function well with the current system and must be classified by the City Engineer in order to determine their function and street design. It should be noted that the street locations are suggested based off of the overall system functionality and *are subject to alignment change* during the design phase based off of existing constraints. New street locations are in *italics*.

5.1 Principal Arterial Streets

DESCRIPTION	FROM (East or South)	TO (West or North)
N. Hwy. 59	Hwy. 412 E.	Shady Grove Rd.
Hwy. 412	East Corporate Limits	Oklahoma State Line
Davidson Rd. ³	<i>Airport Rd.</i>	Hwy. 43

5.2 Minor Arterial Streets (Parkways)

DESCRIPTION	FROM (East or South)	TO (West or North)
Cheri Whitlock Dr.	Hwy. 59 N.	N. Mt. Olive St.
Hwy. 16 ²	River Valley Rd.	Hwy. 412 E.
Hwy. 43 (Mt. N. Olive St.) ¹	Cheri Whitlock Dr.	<i>Davidson Rd.</i>
Lawlis Rd./ Brashears Rd. ³	Hwy. 59 N.	Hwy. 43
Lincoln St. (Hwy. 264)	South Corporate Limits	Brashears Rd.
Main St. ¹	Hwy. 412 E.	N. Broadway St.
S. Mt. Olive St.	Hwy. 412	Cheri Whitlock Dr.
N. Progress Ave./Stephens Rd.	Hwy. 412 E.	Davidson Rd.
Stateline Rd.	Wayne Trail	W. Central St.
E. Tahlequah St.	Hwy. 59 N.	N. Country Club Rd.
Wayne Trail	S. Elm St.	Stateline Rd.

NOTE: These streets currently are not constructed to Minor Arterial Standards but will need to be planned for reconstruction as traffic demand increases.

¹ Reduced Standard: Fifty (50) foot wide right-of-way with a ten (10) feet landscaped buffer per side, two (2) lanes and a continuous center turn lane.

² Existing two-lane road which will need to be widened to four lanes as the traffic LOS declines.

³ Portions of this street or road are new locations.

5.3 Collector Streets

DESCRIPTION	FROM (East or South)	TO (West or North)
E. Ashley St.	N. Lincoln St.	N. Hico St.
N. Britt St.	E. Helena St.	Cheri Whitlock Dr.
N. Broadway St.	E. Main St.	E. Tahlequah St.
Bruce Rutherford Rd.	Gum Springs Rd.	E. Kenwood St.
S. Carl St.	Raines Rd.	W. Twin Springs St.
W. Central St.	N. Holly St.	State Line Rd.
Cheri Whitlock Dr.	N. Mt. Olive St.	N. Dogwood St.
Chesney Rd. ³	Hwy. 59 N.	Stephens Rd.
Copper Leaf Dr. ³	N. Hico St.	Dawn Hill Rd.
Country Club Rd.	E. Main St.	Dawn Hill East Rd.
Dawn Hill Rd.	Hwy. 43 (Mt. N. Olive St.)	Reed Dr.
Dogwood St.	Hwy. 412 W.	Hwy. 43 (Mt. N. Olive St.)
S. Elm St.	Raines Rd.	W. Jefferson St.
Fisher Ford Rd.	Hwy. 59 S.	Waukesha Rd.
Fisher Ford Rd.	South of Illinois River	Saw Mill Rd.
Gary Turner Rd. ³	River Valley Rd.	Bruce Rutherford Rd.
Gum Springs Rd.	Bruce Rutherford Rd.	Hwy 412 E.
E. Helena St.	N. Britt St.	N. Mt. Olive St.
Hico St. ³	E. Kenwood St.	Dawn Hill East Rd.
Holly St.	W. Quarter Rd.	W. University St.
W. Jefferson St.	S. Carl St.	S. Holly St.
E. Jefferson St.	E. Main St.	S. Mt. Olive St.
Kane St. ³	Gary Turner Rd.	Raines Rd.
Keck Rd.	Kenwood Rd. (N/S)	Hwy. 16
Kenwood Rd. (N/S) ³	<i>Kane St.</i>	Hwy. 412 E./Hwy 59 N. int.
Kenwood St. (Hwy 16 Spur)	Kenwood Rd.	Stateline Rd.
King Rd.	Saw Mill Rd.	Hwy. 59 S.
Lake Francis Dr. ³	Waukesha Rd.	S. Mt. Olive St.
<i>N. Lincoln St.</i>	<i>Brashears Rd.</i>	<i>Chesney Rd.</i>
S. Mt. Olive St.	Kane St.	Hwy. 412
<i>New E-W St.</i>	Hwy. 59 N.	Country Club Rd.
<i>New N-S St.</i>	<i>Kane St.</i>	<i>Davidson Rd.</i>
<i>New N-S St.</i>	<i>Cheri Whitlock Dr.</i>	<i>N. Mt. Olive St. (Hwy. 43)</i>
Oakcrest Rd. ³	Stephens Rd.	Hwy. 43
W. Quarter Rd.	S. Elm St.	S. Holly St.
E. Quarter Rd. ³	Hwy. 16	S. Lincoln St. (Hwy. 59)
Raines Rd.	S. Mt. Olive St.	State Line Rd.
River Valley Rd.	Hwy. 16	Gary Turner Rd.
Saw Mill Rd.	Fisher Ford Rd.	King Rd.
Sequoyah Rd. ³	Hwy. 43	Arkansas State Line

DESCRIPTION	FROM (East or South)	TO (West or North)
<i>Continued from page 22.</i>		
E. Tahlequah St.	N. Country Club Rd.	N. Mt. Olive St.
W. Tulsa St.	S. Mt. Olive St.	S. Holly St.
W. Twin Springs St.	S. Mt. Olive St.	S. Carl St.
W. University St.	N. Broadway St.	State Line Rd.
E. University St.	N. Hico St.	N. Washington St.
Washington St.	Lake Francis Dr.	E. Tahlequah St.
Waukesha Rd.	Fisher Ford Rd.	Kenwood St. (Hwy. 16 Spur)

5.4 Major Local Streets

DESCRIPTION	FROM (East or South)	TO (West or North)
Airport Rd. ³	Hwy. 412 E.	<i>Davidson Rd.³</i>
W. Alpine St.	S. Garrett St.	N. Carl St.
W. Benton St.	N. Broadway St.	N. Dogwood St.
Bill Young Rd.	Airport Rd.	Hwy. 59 N.
S. Britt St.	E. Jefferson St.	E. University St.
Brooks Rd.	Hwy. 59 S.	<i>S. Elm St. (end)</i>
N. Carl St. ³	W. Elgin St.	Lawlis Rd.
S. Carl St.	W. Twin Springs St.	W. Alpine St.
Dawn Hill East Rd.	N. Country Club Rd.	Reed Dr.
W. Elgin St.	N. Mt. Olive	N. Carl St.
S. Elm St.	Corporate Limits	Raines Rd.
S. Elm St. ³	Brooks Rd.	Corporate Limits
S. Garrett St.	W. Alpine St.	W. University St.
W. Highland St.	S. Mt. Olive St.	S. Elm St.
W. Jefferson St.	S. Mt. Olive St.	S. Elm St.
S. Maxwell St.	E. Kenwood St.	E. Main St.
Montclair Ave.	Ravenwood Blvd.	S. Country Club Rd.
Ravenwood Plaza	N. Progress Ave.	Ravenwood Blvd.
Ravenwood Blvd.	E. Main St.	Montclair Ave.
Roselawn St.	S. Washington St.	Lake Frances Dr.
Sager Creek Rd.	N. Lincoln St.	N. Hico St.
South Point Dr. ³	Waukesha Rd.	S. Lincoln St. (Hwy. 59 S.)
Sue Anglin Dr.	E. Tahlequah St.	Cheri Whitlock Dr.
E. Tulsa St.	S. Mt. Olive St.	S. Maxwell St.
W. Villa View Dr.	N. Dogwood St.	Arkansas State Line

NOTE: Many Table 5.3 and 5.4 streets are currently not constructed to specified standards, however, they are planned for reconstruction as the City continues to grow and traffic counts increase.

6.0 Authority, Jurisdiction, and Enforcement

The City Administrator, or his designee, shall have the authority to edit the MSP Map, and corresponding document sections, relating to the following: typographical and scrivener's errors, street extensions to reflect future development, altering street classes within one class degree, altering street alignments as required by environmental conditions, updating the City limits boundaries to reflect annexation or de-annexation, and updating street names in accordance with changes authorized by the Board of Directors.

Any development permit or building permit within the City limits and the Planning Area of the City shall conform to the MSP. All plats, site plans, or surveys submitted to the City must indicate any street identified in the MSP that traverses, abuts, or provides access to the said property. Applicants are required to dedicate right-of-way per MSP designations prior to the issuance of any permit and may be responsible for street improvements and/or sidewalks as required by the street ordinances and the Subdivision Regulations. A fee-in-lieu may be required as determined by the City Engineer.

When the City is presented with a request for a development permit, the City Engineer will determine the exact location and extent of required right-of-way to be dedicated and the required street design for the provisions of said facility as a condition of the development permit approval.

No building permit shall be issued for any new development, building, addition, or remodel without review by the City Engineer to determine if right-of-way is required. If right-of-way is required, it shall be dedicated prior to issuance of a building permit.

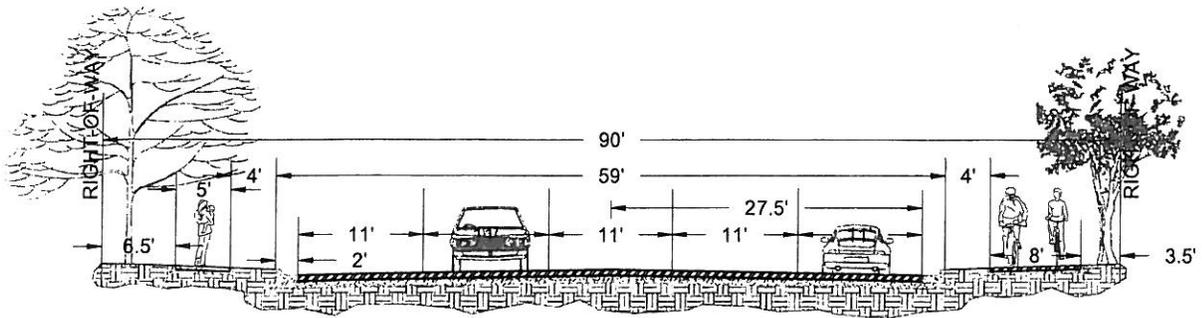
The MSP in the Siloam Springs Planning Area shall be duly considered prior to action on any matter related thereto which comes before the Planning Commission, Board of Directors, or any department or agency of the City.

References:

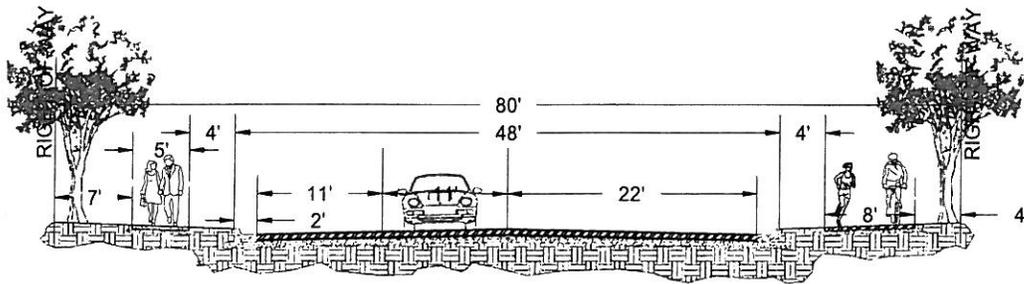
FHWA Functional Classification Guidelines, Federal Highways Administration, US Department of Transportation, Washington DC, 1989.
www.fhwa.dot.gov/planning/fctoc.htm

A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2011.

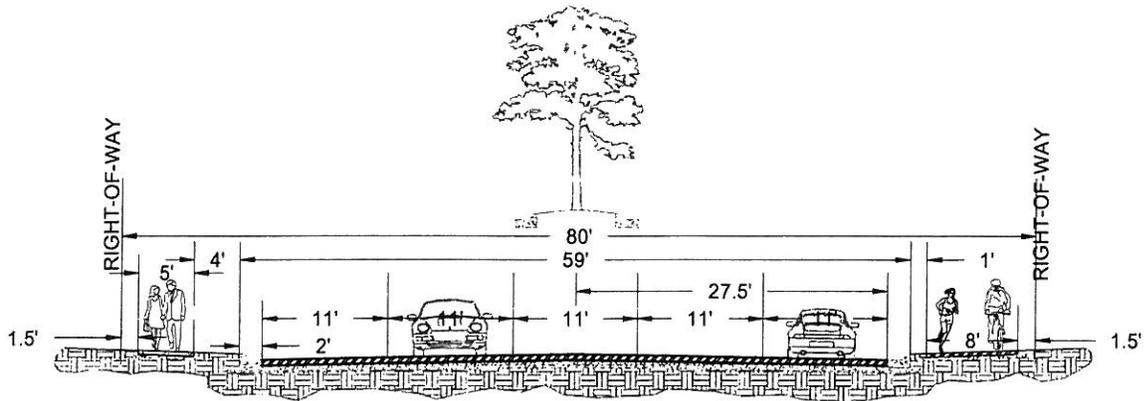
*2035 Northwest Arkansas Regional Long Range Transportation Plan
Northwest Arkansas Regional Planning Commission, 2010*
nwarpc.org/planning/nwa-planning-publications/



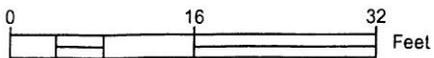
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MINOR ARTERIAL



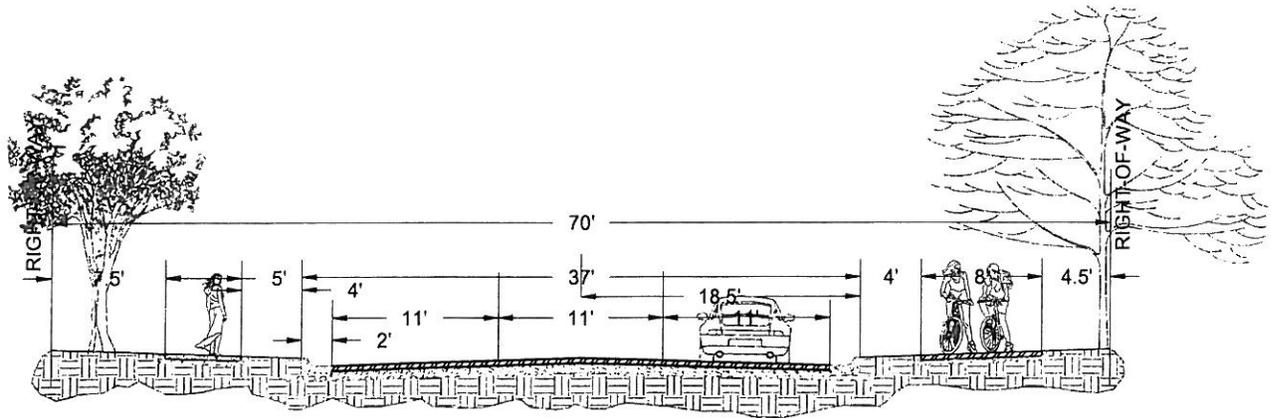
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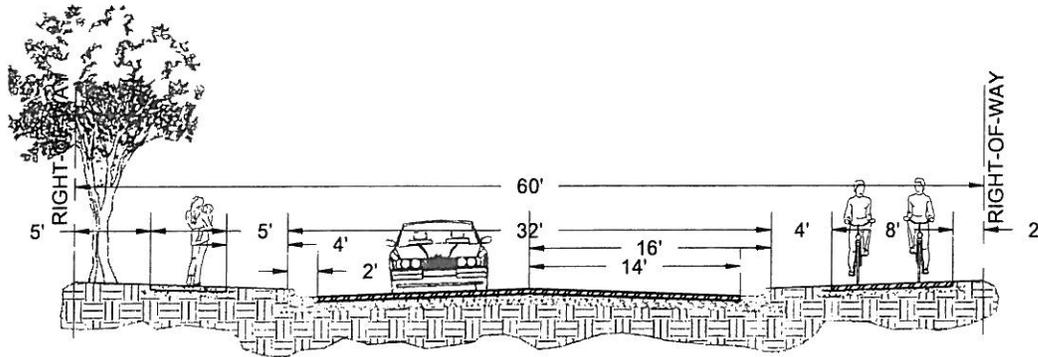
CITY OF SILOAM SPRINGS
 P.O. BOX 80 / 400 N. BROADWAY
 SILOAM SPRINGS, AR 72761
 (479) 524-5136

MASTER STREET PLAN

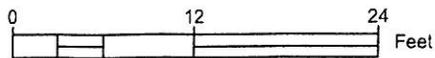
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PAGE	25



COLLECTOR



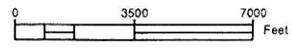
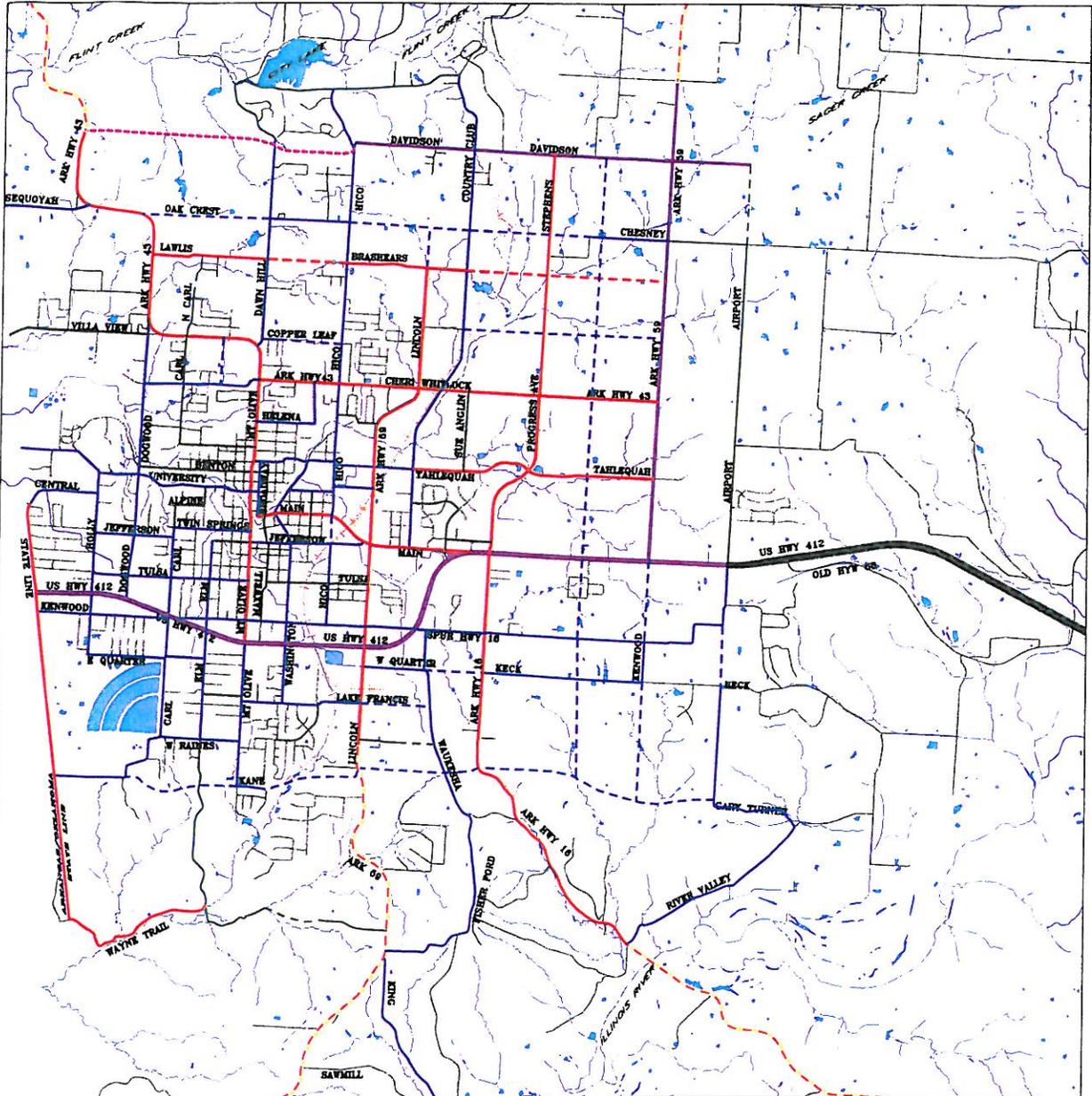
MAJOR LOCAL



CITY OF SILOAM SPRINGS
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 SILOAM SPRINGS, AR 72761
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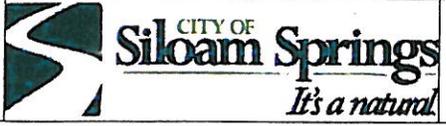
MASTER STREET PLAN

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PAGE	26



- Major Local (ROW Width 52-70')
- - - Future Major Local
- Collectors (ROW Width 67-80')
- - - Future Collectors
- Minor Arterial (ROW Width 78-100')
- - - Future Arterial
- Principal Arterial (ROW Width 89-100')
- - - Future Principal Arterial
- - - State Highway
- US Numbered Roads
- ||||| Railroads
- Hydrography
- National Hydrography Dataset Waterbody
- National Hydrography Dataset Flowline
- Municipal
- City Limits of Siloam Springs

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MASTER STREET PLAN