

THE BIXBY COMPREHENSIVE PLAN 2001-2020

Prepared for the

CITY OF BIXBY, OKLAHOMA

Prepared by

SDC

Stephen D. Carr and Associates
Land Planning and Urban Design

In association with

Meshek & Associates Inc.
Civil and Water Resource Engineers

ACKNOWLEDGMENTS

BIXBY CITY COUNCIL

Joe Williams, Mayor and Ward 1
Patty Ferree, Vice Mayor and Ward 5
James "Rusty" Knapp, Ward 2
Steve Todoroff, Ward 3
Bud Waldron, Ward 4

BIXBY CITY PLANNING COMMISSION

Scott Sherrill, Chairman
Roy Parsons
Bill Davis
Bill Campbell
Jim Craig

BIXBY BOARD OF ADJUSTMENT

Carl Carnahan
Dave Hill
Jeff Wilson
Lonnie D. Jeffries
Jim Powell

BIXBY PARKS BOARD

Kevin Dean, Chairman
Lisa Stephens, Secretary/Treasurer
Ron Horath
Jeff Beach
Steve Neuzil
Steve Dudash

CITY OF BIXBY

Micky Webb, City Manager
Mike R. Jones, Assistant City Manager/BPWA
Jim Coffey, City Planner
Charlotte Weimer, City Clerk
Rebecca Byers, City Treasurer

SDC

Stephen D. Carr and Associates
P.O. Box 4524
Tulsa, Oklahoma 47159-0524

Meshek & Associates Inc.

20 W. Second Street
Sand Springs, Oklahoma 74063

TABLE OF CONTENTS

<u>Item</u>	<u>Page</u>
Cover Page	i
Acknowledgments	ii
Table of Contents	iii
List of Tables	viii
List of Exhibits	ix
BIXBY COMPREHENSIVE PLAN 2001-2020	1
INTRODUCTION	1
GENERAL GOALS	1
PLAN ELEMENTS	4
URBAN DESIGN DEVELOPMENT GOALS OBJECTIVES AND POLICIES	4
GENERAL	4
GOALS	4
OBJECTIVES	5
POLICIES	7
<u>Neighborhoods</u>	7
<u>Activity Centers</u>	8
<u>Corridors</u>	12
<u>Special Districts</u>	14
<u>Expressways and Arterials</u>	24
<u>Intensity</u>	26

TABLE OF CONTENTS
(Continued)

<u>Item</u>	<u>Page</u>
LAND USE, TRANSPORTATION AND PUBLIC FACILITIES AND UTILITIES GOALS, OBJECTIVES AND POLICIES	30
LAND USE	30
GENERAL GOALS	30
AGRICULTURAL AREAS	31
RESIDENTIAL AREAS	32
COMMERCIAL AREAS	34
SCIENCE-TECHNOLOGY AREAS	36
INDUSTRIAL AREAS	38
PARK-RECREATION-OPEN SPACE AREAS	40
PUBLIC AND QUASI-PUBLIC AREAS	47
TRANSPORTATION AND ROADWAY PLAN	49
GENERAL	49
ROADWAYS	49
PEDESTRIANWAYS AND BIKEWAYS	51
TRANSIT	53
RAIL	53
AIR FACILITIES	54
PUBLIC AND FACILITIES AND UTILITIES	55
GENERAL	55

TABLE OF CONTENTS
(Continued)

<u>Item</u>	<u>Page</u>
PUBLIC FACILITIES	55
EDUCATION FACILITIES	56
LIBRARY FACILITIES	57
SOCIAL SERVICES-HEALTH	58
MUNICIPAL BUILDINGS	59
PUBLIC SAFETY	59
FLOOD-STORM WATER FACILITIES	61
SOLID WASTE FACILITIES	64
WATER	66
SANITARY SEWER	68
COMMUNITY "VISIONING" AND GOAL STATEMENTS	70
GENERAL	70
QUALITY OF LIFE	70
ECONOMIC DEVELOPMENT	71
LEADERSHIP	72
INFRASTRUCTURE	72
MEMORIAL DRIVE AND 171 ST STREET SOUTH CORRIDOR DESIGN ELEMENTS	73
GOALS	73
COMMON DESIGN ELEMENTS	74

TABLE OF CONTENTS
(Continued)

<u>Item</u>	<u>Page</u>
DESIGN STANDARDS	76
BASIS FOR THE PLAN	82
JURISDICTIONAL AND PLANNING FRAMEWORK	82
Introduction	82
Authority and Jurisdiction of the Comprehensive Plan	82
Planning Process	83
Comprehensive Planning	84
URBAN DESIGN FRAMEWORK	87
Introduction	87
Bixby's Urban Form	87
PHYSICAL FEATURES ANALYSIS	95
Introduction	95
Natural Features	95
Man-Made Features	101
DEMOGRAPHIC ANALYSIS	105
Introduction	105
Population and Growth	105
Population Projections	109
Housing Demand	112
Additional Land Demand	114

TABLE OF CONTENTS
(Continued)

<u>Item</u>	<u>Page</u>
MEMORIAL DRIVE AND 171ST STREET SOUTH CORRIDOR	116
Introduction	116
Area Characteristics	116
Common Design Elements	121
PLAN IMPLEMENTATION	123
INTRODUCTION	123
ADDITIONAL DETAILED PLANNING	123
CAPITAL IMPROVEMENTS PROGRAM	123
RESOURCES	127

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	PLAN CATEGORIES AND RIGHT-OF-WAY REQUIREMENTS	25
2	PLAN INTENSITY VALUES	26
3	STANDARDS FOR PARK AND RECREATION AREAS	46
4	MUNICIPAL WATER SERVICE EXTENSION	67
5	MUNICIPAL SEWERAGE SERVICE EXTENSION	69
6	AREA POPULATION ESTIMATES AND TRENDS	107
7	COMPARISONS OF AREA COMMUNITIES PAST POPULATION GROWTH	108
8	COMPARATIVE POPULATION ESTIMATES AND PROJECTIONS	111
9	BIXBY POPULATION AND HOUSING FORECASTS	113

LIST OF EXHIBITS

<u>Exhibit</u>		<u>Page</u>
1	BIXBY COMPREHENSIVE PLAN 2001-2020	6
2	CORRIDOR ARTERIAL-HIGHWAY STANDARDS	13
3	SPECIAL DISTRICT 1 - DOWNTOWN AREA	17
4	SPECIAL DISTRICT 2 - BUSINESS- INDUSTRIAL PARK	19
5	SPECIAL DISTRICT 5 - LAKE BIXHOMA WATERSHED	23
6	MATRIX TO DETERMINE BIXBY ZONING DISTRICTS RELATIONSHIP THE BIXBY COMPREHENSIVE PLAN	27
7	CORRIDOR DESIGN ELEMENTS - MEMORIAL DRIVE AND 171 ST STREET SOUTH	75
8	NATURAL FEATURES	100
9	MAN-MADE FEATURES	104
10	CORRIDOR AREA ANALYSIS (MEMORIAL-171ST)	120

BIXBY COMPREHENSIVE PLAN
2001-2020

THE BIXBY COMPREHENSIVE PLAN 2001-2020

INTRODUCTION

A crucial purpose of the Bixby Comprehensive Plan is to set forth the goals and objectives of the community for physical development. Those general goals which provide the overall framework for the Plan are set forth below. These goals in combination more specific goals, objectives, and policies provide the basis on which effective and informed decisions may be made regarding the community's physical development.

Also included and following these physical development goal statements are those derived from a recently completed, extensive strategic planning effort. These strategic economic development goals are set forth following the physical development goals.

GENERAL GOALS

1. The City of Bixby and its environs is intended to develop with a separate and distinctive identity in which private and public interests are integrated into an order in harmony with the physical environment. It is intended that the physically identifiable division and character of Bixby be preserved and further established separate from Broken Arrow, Glenpool, Jenks, Leonard and Tulsa.
2. It is intended that the City of Bixby be a vital component of and integrally and readily linked to other portions of the Tulsa metropolitan area and northeast Oklahoma.
3. It is intended that the best possible quality of life be attained for Bixby residents. That is, the best possible living, economic and environmental standards are to be achieved. The land in Bixby is to be put to the use for which it is best suited based on the evaluation of all considerations without dominance of any measurement.
4. It is intended that a coordinated and compatible arrangement of the living, working, shopping and recreation-play areas be attained in Bixby. Each distinctive area should be separated, buffered or protected from conflicting or incompatible land uses.

5. It is intended that Bixby be served with the best possible transportation, public service and facilities and public utilities systems. It is intended that those facilities, utilities and systems be ultimately planned to support full urbanization of the Bixby area with the full range of intended uses at optimum operational and safety levels.
 6. It is intended that the greatest possible protection of Bixby's natural setting be provided. It is intended that the aesthetic and natural environment of Bixby be protected and enhanced. Particular regard is to be given to preserving the development sensitive areas of area drainageways, flood plains, Lake Bixhoma and other water supply sources.
 7. It is intended that the nature and character of existing developed areas be stable, protected and enhanced. Land uses should be planned, designed and maintained in a manner to preserve the continuing, long term integrity of each land use. Development and zoning patterns will support these goals.
 8. It is intended that the greatest possible range of housing types be provided in Bixby, but that the detached single family dwelling on an individual lot should be the dominant housing in Bixby. That is, there should be a range of residential developments or residences that vary from the rural residential farm to detached single family housing to multiple family apartments. Different housing types should be designed to relate internally in developments and to avoid encroachment into areas of different types.
 9. It is intended that a variety of economic opportunities for employment and investment be available in Bixby and to area residents. It is further intended that particular areas be planned for business and industrial development. These areas are to be developed in a manner that protects them from having detrimental impacts on or being impacted detrimentally by surrounding uses. Bixby will support the development of a diversified business and industrial base.
 10. It is intended that the Bixby Comprehensive Plan goals be implemented and the Bixby Planning Commission and the Bixby City Council be involved in further detailed planning as necessary in order to achieve the Plan goals, objectives and policies. That is, the Commission and Council should be involved in the development of short range plans and programs, codes and regulations designed to achieve the purpose of the Plan.
-

11. It is intended that the Bixby Comprehensive Plan serve as a long range guide for physical development in Bixby and its environs and that the Plan be updated, refined and amended as deemed necessary according to unforeseen factors, conditions and circumstances. It is further intended that only those necessary regulations, guidelines, resources and manpower be provided to economically and efficiently achieve Plan goals.

12. It is intended that Bixby coordinate the implementation of the Bixby Comprehensive Plan and other planning efforts with the efforts of appropriate governmental jurisdictions including Tulsa County, Wagoner County and the cities of Broken Arrow, Glenpool, Jenks and Tulsa.

PLAN ELEMENTS

The goals, objectives, policies and standards for the elements of the Bixby Comprehensive Plan are to be listed for each of the following Plan elements. These elements. The Plan Elements include:

1. Urban Development Design Guidelines
2. Land Use
3. Transportation
4. Public Facilities and Utilities
5. Community "Visioning" and Goal Statements
6. Memorial Drive and 171st Street South Corridor Design Elements

URBAN DEVELOPMENT DESIGN GOALS, OBJECTIVES AND POLICIES

The Urban Development Design concept of the Comprehensive Plan is intended to be consistent with municipal zoning and other development regulations. The Plan goals, objectives and policies will be more easily applied to day-to-day concerns and decisions and should facilitate Plan understanding and implementation.

General

The different Urban Development Design Guidelines" elements and levels of intensity relate the uses and activities designated for the land to land relationships and the level of public facilities, services and utilities to the land. Intensity is related to the amount of activity connected with the functions. Thus, a higher intensity use would require a higher level of public services than medium, low and rural intensity uses would require.

Goals

1. It is intended that a variety of land uses be provided in Bixby according to compatibility and public service systems capacity.

2. It is intended to allow compatible land uses to be located with each other and to establish and maintain a continuity of land uses.

Objectives

1. High intensity uses requiring direct access and high visibility will be provided along the major corridor-arterial and expressway system in Bixby.
2. Medium intensity uses that require less direct access and lower visibility will be provided at the intersection of arterial streets.
3. Low intensity uses will be provided away from intense land use pressures and undesirable land use impacts.
4. Rural intensity uses will be preserved in the portions of Bixby where fewer public services are available or planned and where physical conditions restrict urban development. Rural intensity uses will be primarily agricultural, rural residential, large-lot residential and recreational development.
5. There are certain areas within Bixby which have characteristics unsuitable for urban development. These development sensitive areas will be protected from development or, in those instances where development is proven appropriate to the public benefit, will be developed only when measures are taken to prevent all negative impacts associated with development of the designated sensitive area.
6. The Urban Development Design goals, objectives and policies will be applied in the design of new development and redevelopment activities proposed and planned within Bixby and its environs. Some areas may begin to experience development pressures or growth prior to that which was anticipated. In such instances, the Urban Development Design Guidelines are to be applied.

Policies

1. The Bixby Comprehensive Plan map depicts desired land uses, intensities and use and development patterns to the year 2020. Intensities depicted for undeveloped lands are intended to develop as shown. Land uses depicted for undeveloped lands are recommendations which may vary in accordance with the intensities depicted for those lands.
 2. The Urban Development Design Policies described below will be applied throughout Bixby for full urbanization or one hundred percent (100%) development. The functional and intensity relationships and development patterns will guide and direct the design of areas that urbanize prior to that anticipated to 2020.
 3. Neighborhoods are those land areas bounded by O.S. Highway 67, U.S. Highway 64, arterial streets, the Arkansas River, major jurisdictional or planning boundaries, rail lines or other physical features. Neighborhoods include those lands outside corridors, activity centers and special districts. Neighborhoods are primarily residential in nature and are characterized by the following standards:
 - a. The AG, FD, RE, RS-1, RS-2 and RS-3 zoning classifications are appropriate for and may be included within the neighborhood. In some instances, the RD and moderate density multiple-family (maximum of 10 dwelling units per acre) zoning classification may be appropriate in or serve as a border to the neighborhood. The RD and moderate intensity areas would serve as a transitional intensity separating low intensity residential areas from adjacent medium or high intensity areas or where specific site considerations or unusual conditions warrant an RD or moderate intensity multiple-family zoning. Depending on the densities proposed, PUD or RMH zoning may or may not be appropriate within a neighborhood. Sufficiently large parcels designed and planned as neighborhoods may be appropriately zoned as residential PUD or RMH districts.
 - b. All primary residential uses within neighborhoods will back or side on any adjacent arterial streets.
 - c. Interior minor street patterns should be designed and developed with sensitivity to site topography and elevations and should be developed
-

through the use of cul-de-sacs, curved layout and light-duty surfacing to encourage quiet, safe and low volume localized traffic. Access to property should, whenever possible, be provided by minor streets. Residential collector streets will serve to gather neighborhood traffic to arterial streets.

- d. The neighborhood focal point should be the elementary school, centrally located and situated so as to extend or relate to any open space and recreation system. Depending on population densities and service needs, the elementary school may be designed to serve one or more neighborhoods. Walking distances from within the neighborhood in which the school is located should be no greater than one-half mile. In those instances in which the elementary school is to serve multiple neighborhoods, the school site may be situated next to arterial streets, but direct access should be from adjacent collector streets only.
 - e. Open space provisions should provide for useable active recreation areas. Open space provisions should relate to significant natural features and form a part of an overall open space system. Pedestrian and bicycle connections should connect to the rest of the neighborhood and to adjacent activity centers and neighborhoods. Where practical, the system should connect to the overall community open space and trail system. Recognized flood plains and steeply sloped areas should be included in protected open space areas.
 - f. Recreation facilities should relate and be adjacent to education facilities and the open space system serving the neighborhood.
 - g. Public and quasi-public facilities, such as fire stations and churches, should be located on the periphery and neighborhood edges, preferably at the intersections of neighborhood collector and arterial streets, or in adjacent activity centers
 - h. Neighborhood design and specific zoning patterns should be prepared and designated in a manner to preserve the long-term integrity of the neighborhood and to preclude any pressures for changes in neighborhood uses and zoning.
4. Activity Centers are defined as specific areas located within Bixby and its

environs that are located around the intersections of designated arterial streets and, in some specific instances, the intersections of designated arterial streets and collectors. Depending upon the type of arterials involved, differing amounts and types of uses are permitted. Not all arterial intersections are designated activity centers. One or all of the following conditions exist at these intersections to make an activity center designation inappropriate: limited or existing development, limiting soils conditions and capacities, constraining physical features, or existing or planned availability of public services. Activity centers will be characterized by the following standards:

- a. Development around the various arterial intersections should be consistent with the type and capacity of related existing and planned streets, public facilities, and public utilities, soils, and other physical features to support more intense types of development.
- b. Community-serving shopping, retail and service activities should be located at the intersection of primary arterial streets with other primary arterial streets.
- c. Convenience and service activities for neighborhoods should be located at the intersection of primary arterial streets with secondary arterial streets and the intersection of secondary arterials.
- d. Activity center development should be designed to be compatible with surrounding neighborhoods. Transition or buffer areas or uses should be provided between medium intensity uses at the edges of activity centers and neighborhoods.
- e. There are four basic activity centers to be accommodated in Bixby. The specific design standards for each are described below:
 - (1) Type Zero Activity Centers: These centers are defined as the land allocated around the intersection of an arterial and a collector located more than a mile from another activity center or corridor designated area. The total land allocated to this activity center is ten acres, two and one-half acres distributed to each corner. Each two and one-half acre corner tract is to be of a generally square configuration, 330 feet by 330 feet, measured from the centerline of the arterial and collector right-

of-way. The PUD zoning classification is encouraged for development in this activity center. In those instances in which a PUD zoning classification is provided, the configuration of a two and one-half acre corner may be varied such that the minimum collector frontage may be 220 feet and the maximum arterial frontage may be 495 feet. Convenience shopping and service uses may be located at these activity centers and such centers will, in most instances, have one primary land use. No Type Zero Activity Centers appear appropriate in Bixby.

- (2) Type One Activity Centers: These centers are defined as the land allocated around the intersection of two secondary arterial streets. The total land allocated to this activity center is twenty acres, five acres distributed to each corner. Each five acre corner tract is to be of a generally square configuration, 467 feet by 467 feet, measured from the centerline of the arterials' right-of-way. The PUD zoning classification is encouraged for development in this activity center. In those instances in which a PUD zoning classification is provided, the configuration of a five acre corner may be varied such that the minimum arterial frontage may be 330 feet and the maximum arterial frontage may be 660 feet. Convenience shopping, service and office facilities and medium intensity residential uses should be located at these activity centers. A Type One Activity Center may be appropriate at the intersection of 121st Street and Mingo Road.
- (3) Type Two Activity Centers: These centers are defined as the land allocated around the intersection of a primary arterial and a secondary arterial. The total land allocated to this activity center is forty acres, ten acres distributed to each corner. Each ten acre corner tract is to be of a generally square configuration, 660 feet by 660 feet, measured from the centerline of the arterials' right-of-way. The PUD zoning classification is encouraged for development in this activity center. In those instances in which a PUD zoning classification is provided, the configuration of a ten acre corner may be varied such that the minimum arterial frontage may be 440 feet and the maximum arterial frontage may be 990 feet. Neighborhood shopping, service and office facilities and

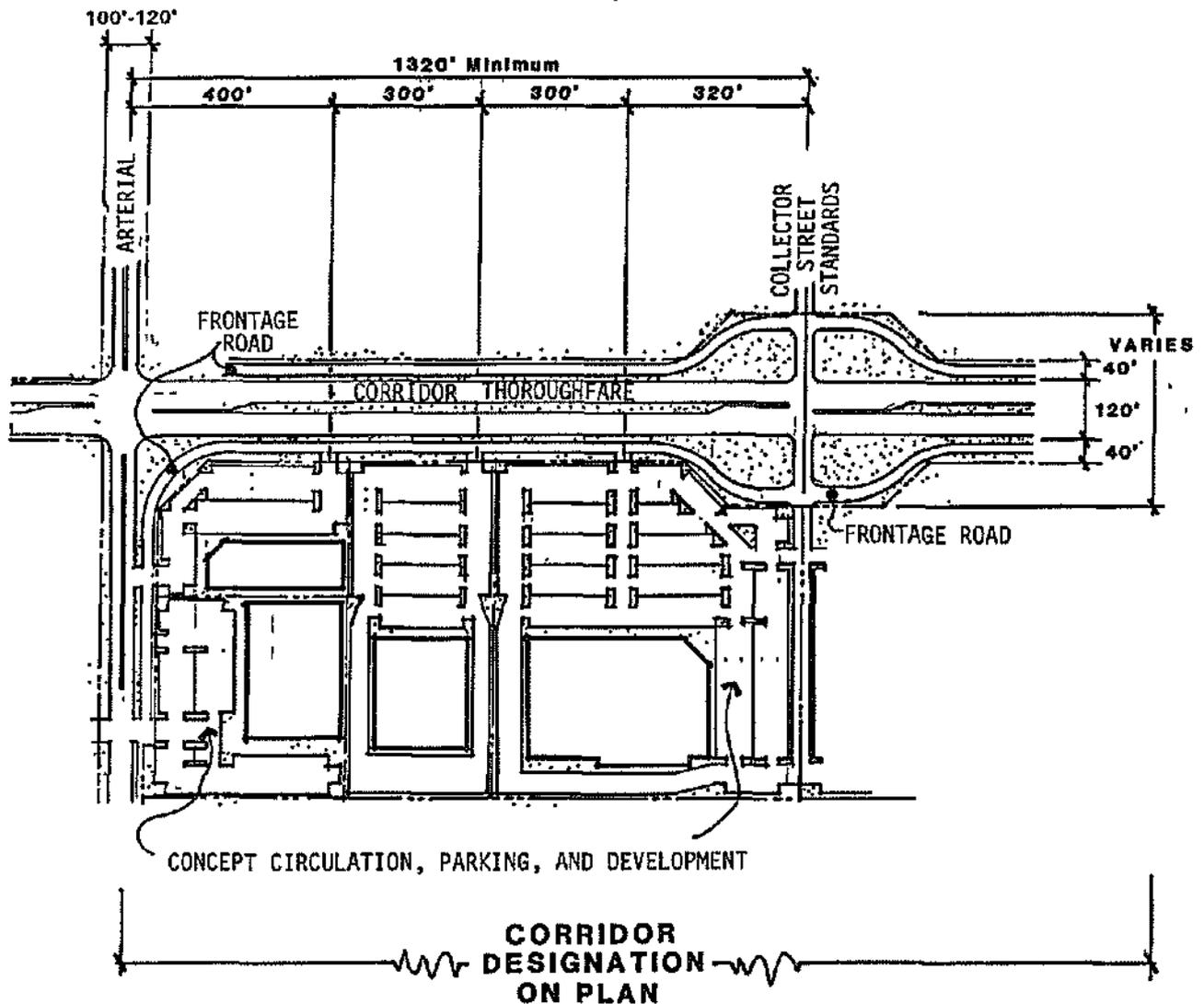
medium intensity residential uses should be located at these activity centers. A Type Two Activity Center may be appropriate at the intersection of 151st Street South (O.S. Highway 67) and Yale Avenue.

- (4) **Type Three Activity Center:** These centers are defined as the land allocated around the intersection of a primary arterial with a primary arterial. The total land allocated to this activity center is sixty acres, fifteen acres distributed to each corner. Each fifteen acre corner tract is to be of a generally square configuration, 808 feet by 808 feet, measured from the centerline of the arterials' right-of-way. The PUD zoning classification is encouraged for development in this activity center. In those instances in which a PUD zoning classification is provided, the configuration of a fifteen acre corner may be varied such that the minimum arterial frontage may be 495 feet and the maximum arterial frontage may be 1,320 feet. Community shopping, service and office facilities and medium intensity residential uses should be located at these activity centers. A Type Three Activity Center may be appropriate at the intersection of 151st Street South (O.S. Highway 67) and Memorial Drive (U.S. Highway 64).
- (5) Medium intensity zoning classifications that are appropriate in the Type Zero Activity Center are RD, OL, and CS. Medium intensity zoning classifications that are appropriate in the Type One, Two and Three Activity Centers are RD, a moderate intensity residential zoning district (maximum of 10.0 dwelling units per acre), RM-1, RM-2, OL, CS, and PUD zoning at appropriate densities. The OL and CS zoning classification are appropriate for Type Zero, One, Two, and Three Activity Centers. The RM-3 and OM zoning may be appropriate in a Type One and Two and are appropriate in Type Three Activity Centers. The ST zoning may be appropriate in Types 3 Activity Center. In some instances, CG may be found to be appropriate in Type Two and Type Three Activity Centers when a PUD designation is also applied.
- (6) Activity centers may include FD, AG, RE, RS-1, RS-2, or RS-3 zoning classifications.

- (7) At full urbanization conditions, access from the arterial within 600 feet of the arterial's intersection center-point will be limited to only right turn patterns.
5. **Corridors** are defined as specific areas located along expressways and are to contain major employment and region-serving functions in concert with a relatively high residential base. In specific instances, a corridor may be defined along corridor-arterials in cases where existing and planned development, zoning, existing and planned highway improvements and traffic patterns warrant such a designation. Corridors are characterized by the following standards:
- a. High intensity zoning classifications that may or may not be appropriate within a corridor include CG, CH, IL, IM and IH. If such districts are approved for a corridor, it should be when a PUD is also applied. The IR zoning classification is appropriate within a corridor. The medium intensity zoning classifications of RD, RM-1, RM-2, RM-3, OL, OM, CS, and ST are appropriate within a corridor. Less intense zoning classifications or an RMH may or may not be appropriate within a corridor. The AG zoning classification is inappropriate within a corridor except as a holding or transitional zoning classification or for development sensitive areas within the corridor. An RE, RS-1, RS-2, and RS-3 zoning classification is rarely appropriate within a corridor except in already established neighborhoods. An FD district is appropriate if a flood hazard area is in the corridor. It is intended that medium and high intensity zoning for corridor designated areas be allowed for large undeveloped areas (40 acres +/-). Piece-by-piece development and re-zoning of smaller undeveloped parcels along corridor areas should be according to the Urban Development Design Guidelines as applied to non-corridor areas. However, provision should be made for the provision of right-of-way necessary for service roads along a designated corridor, particularly along 151st Street South (S.H. 67).
 - b. Land uses that are more intense in nature should have exposure and convenient access to high-speed transportation facilities.
 - c. Multiple land uses may be allowed within a corridor and those land uses will be interrelated by internal vehicular and pedestrian traffic system. The corridor may be ultimately connected to the regional transit system.
 - d. Appropriate access should be provided to arterial streets from corridor collector streets. All tracts within corridors should have direct access to the corridor collector streets or service roads.
 - e. Corridors should have a maximum depth of 2,640 feet.
-

- f. Higher intensity development should be designed by utilization of extensive setbacks, buffering uses and other separations or transitions to be compatible with any adjoining low intensity development.
- g. Refer to the Corridor-Arterial Exhibit for special corridor-arterial standards.

EXHIBIT 2
CORRIDOR ARTERIAL-HIGHWAY STANDARDS



6. **Special Districts** are defined as areas of Bixby that have unique characteristics, development patterns or influence on adjacent areas and are so designated in accommodation of such special situations. These districts require additional detailed planning and regulatory review prior to development. The zoning classifications which may or may not be appropriate in a special district is dependent on the range of uses intended, suitability, adjacent land uses and site characteristics and capacities. Special districts identified in Bixby include:

a. The Bixby "downtown area" is recommended as Special District 1. The area includes that area depicted generally in the Special District 1 Exhibit. It is suggested that a district planning team be organized to prepare specific goals for this area, to facilitate community involvement in the preparation of a district plan and to foster active participation and leadership in the district plan's implementation. The development design guidelines suggested for the district are described below.

(1) **Historical Continuity:** The area should build upon the turn-of-the-century theme of the older buildings and their original facades. This would provide a design framework for the Special District 1 and the cultural context of the "downtown area".

(2) **Public Park Development:** Private and public use of the Charley Young park should continue to be optimized. The area can be further used to create a focal point for the district. Additional architectural elements, landscaping and pedestrian scale streetscape can be added to the site. Improvements and materials used in this space can be used in sidewalk and street improvements throughout the district to help establish an overall district theme. The park provides a gathering place for .

public or ceremonial events, art shows, festivals and exhibits. Full advantage should be made of this asset to increase and enhance human interaction, community awareness of the area and to further establish the area's identity as a place of activity and excitement.

(3) **Spirit of Place:** Development and redevelopment of the public

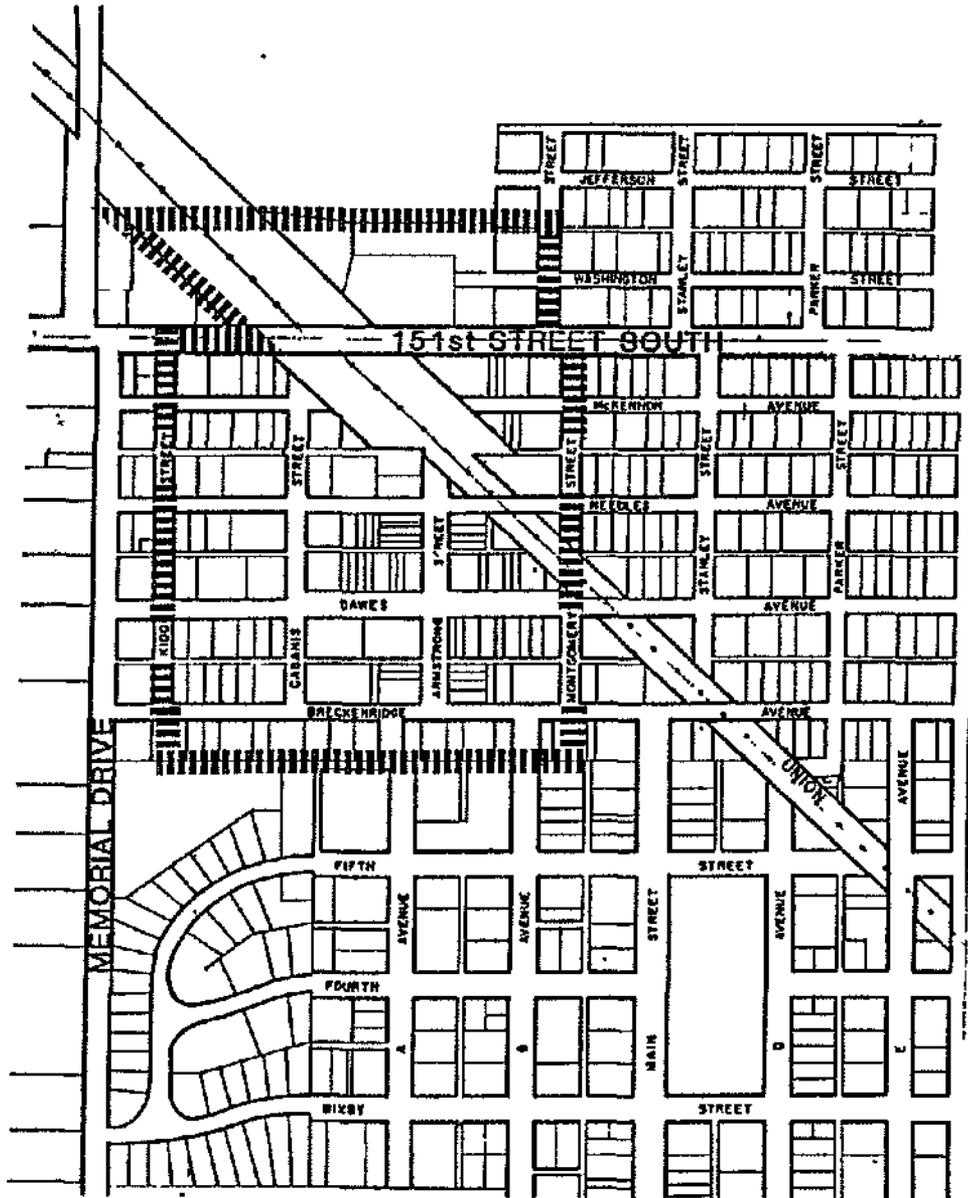
and private property within Special District 1 should be based on a common theme and identity to bond the owners, residents and users of this unique area of the community.

- (4) **Connectors:** The paths for pedestrian traffic and vehicular movement should be designed to optimize accessibility and visibility and to improve the safe, efficient interaction of these systems. Emphasis should be placed on the pedestrian scale and external linkages to the "downtown area".
- (5) **Sense of Entry:** A pleasant, secure and enjoyable sense of entry by a visible sequence of events and images should be provided from the principle entrances to the area, but especially from the west. View corridors should be determined and preserved where appropriate and established whenever suitable. The edges of the entry roads should receive landscape and streetscape modifications to enhance the positive impacts of the district on adjoining areas and to provide a pleasing transition as one leaves and enters the surrounding areas into Special District 1. Particular attention should be given to providing a positive linkage to S. Memorial Drive (U.S. 64), 151st Street South, and Riverview Road.
- (6) **Buffers:** Landscaped open space and parking areas may be necessary to soften the edges or to provide visual separations between the Special District and any conflicts between adjoining land uses.
- (7) **Scale and Texture:** A pleasant combination of materials and scale should be used in area modifications and improvements that relate to the one and two story scale of existing and historical facades and architectural motifs suitable for the area theme. New buildings and construction should use materials and styles indigenous to the region.
- (8) It is recommended that a joint use detention/open space/park facility be considered for the Downtown Area. Such a facility should be considered within the context of a master drainage plan for the old town portion of Bixby and the associated watershed. A properly designed and engineered facility could

be located in areas which are in close proximity to Charley Young Park and event areas for the Green Corn Festival. Landscape features should be closely related to other existing and planned landscape features for Downtown.

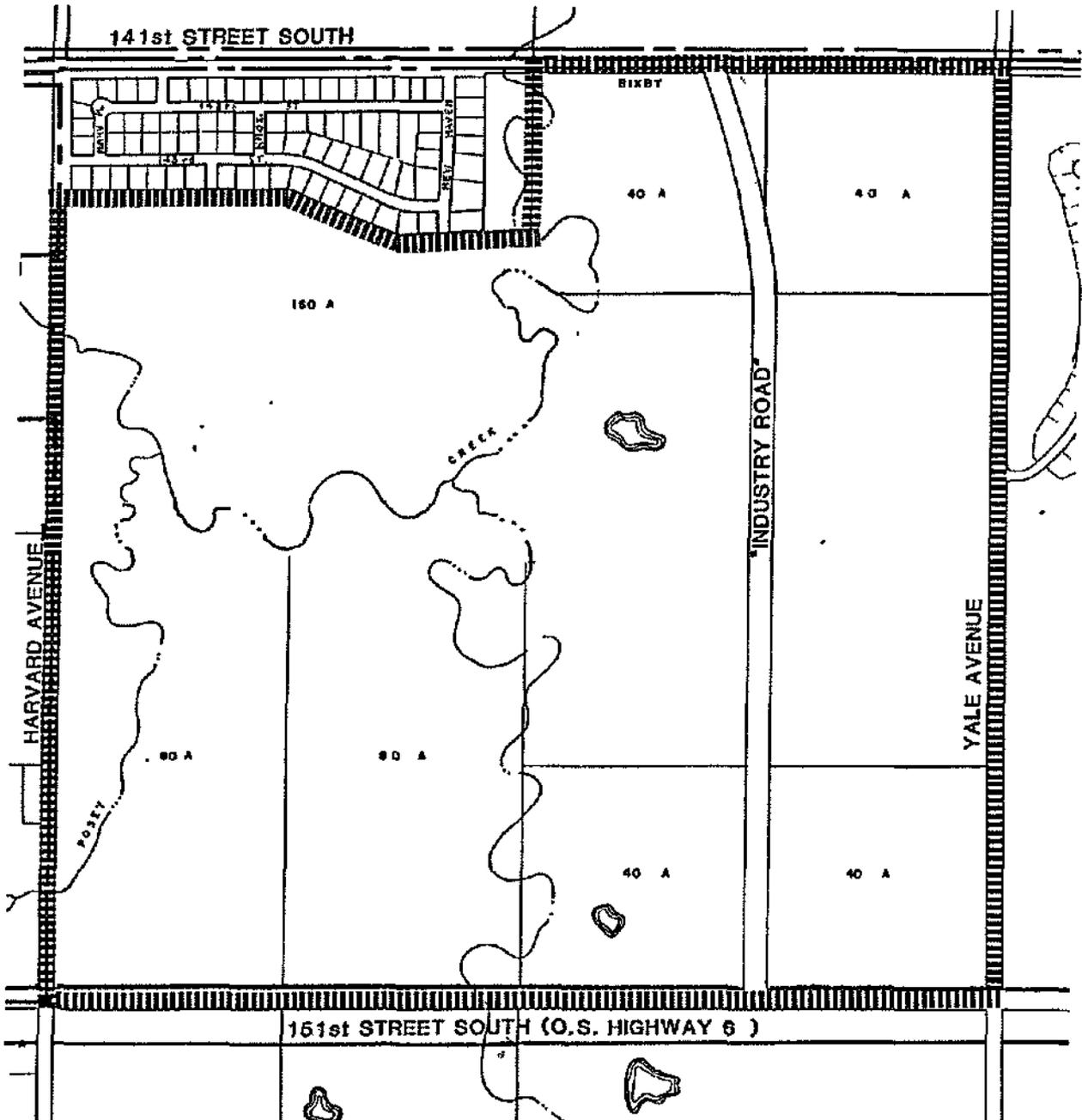
- (9) It is intended that the "Central Business District Guidelines" adopted by the City of Bixby be applied to the Central Business District area defined in the Bixby City Code.

EXHIBIT 3
SPECIAL DISTRICT 1 - DOWNTOWN AREA



- b. The area generally depicted in the Special District 2 exhibit is recommended as an Industrial-Business Park Special District. The district is located in Section 16, Township 17 North, Range 13 East of the Indian Base and Meridian. This area has been planned and zoned consistent with the following standards. These standards of the approved PUD should be considered for other business and/or industrial parks which develop in the Bixby area. The development guidelines for the Special District 2 and any business and/or industrial park are as follows:
- (1) The tract of land should be assembled under one continuing control.
 - (2) The park should be a comprehensive planned development with specific development guidelines, restrictions and controls that ensure compatibility of uses and activities and provision of necessary infrastructure.
 - (3) A set of physical development and operational requirements and standards should be developed for the park applicable to all land owners within the park which will ensure a high standard of design and development.
 - (4) The purpose of Special District 2 and other business and/or industrial parks is to create a physical environment that will achieve the following: consistency with the Bixby Comprehensive Plan goals; efficient business and industrial operations; human scale and values; compatibility with natural and man-made environment; achieving and sustaining highest land values; and foster economic development.
 - (5) ST, IR, and IL zoning classifications are appropriate for such special districts once a comprehensive special district plan has been approved by the City. Such special district plans are recommended to be prepared by the property owner/developer by means of Planned Unit Development overlay district zoning.

EXHIBIT 4
SPECIAL DISTRICT 2



The CS is appropriate and CG zoning classifications may be found to be appropriate in this special district. The IM zoning classification may or may not be appropriate within this special district. IH zoning is most likely inappropriate for this special district and special planning and development concerns associated with strictly IH uses must be satisfactorily resolved prior to any approval of this zoning in this special district.

- c. The third area worthy of Special District 3 designation is located west and behind the existing industrial development along Memorial Drive, south of the Arkansas River, north of S. H. 67, and the upland area east of S. Sheridan Road. This area contains prime farm land and is presently used for agriculture purposes. These and other agricultural uses in Bixby provide a strong, positive image for the Bixby community and should be protected as appropriate. Continued use in agribusiness is particularly appropriate for the portion of the area which is located in the 100 year flood plain (development sensitive area). However, portions of the area are zoned for industrial use. These portions have physical features and a location that are advantageous for a business and/or industrial park. Those portions out of the flood plain are suitable for business and industrial development. Any change in use in this area be designed to integrate continuing agribusiness uses, provide onsite drainage control solutions, provide appropriate buffers between residential land uses on the upland area along S. Sheridan Road, and link any industrial uses to adjoining uses to the east. The flood prone areas are appropriate to keep zoned as AG for open space/recreation and agribusiness uses. The remaining portions would appear to be appropriate as ST, IR, IL, and possibly IM designation. It is recommended that PUD be applied with any scientific-technology or industrial zoning. The Special District 2 design standards are appropriate for this and any business, science-technology, or industrial park which may be developed in Bixby and its environs.
- d. Special District 4 is that area previously designated in the 1991 Bixby Comprehensive Plan in which a majority of the land is located within the 100 year flood plain. This development sensitive area is located approximately from one-quarter mile south of S. H. 67, west of S. Memorial Drive, north of 171st Street South, and east of the upland area along S. Sheridan Road. The majority of this land is used for

agricultural purposes. This prime farm land and contributes strongly to the "green theme" characteristic of Bixby . Preservation of those Special District areas should continue with AG zoning the primary designation. Certain select areas adjacent to major roadway intersections may be appropriate for different zoning designations in accordance with the other Urban Design Development Guidelines. Any change in use in this area should be designed to integrate continuing agribusiness uses, provide onsite drainage control solutions. It should provide appropriate buffers between adjoining land uses on the upland area along S. Sheridan Road, south of 171st Street South, and along S. Memorial Drive.

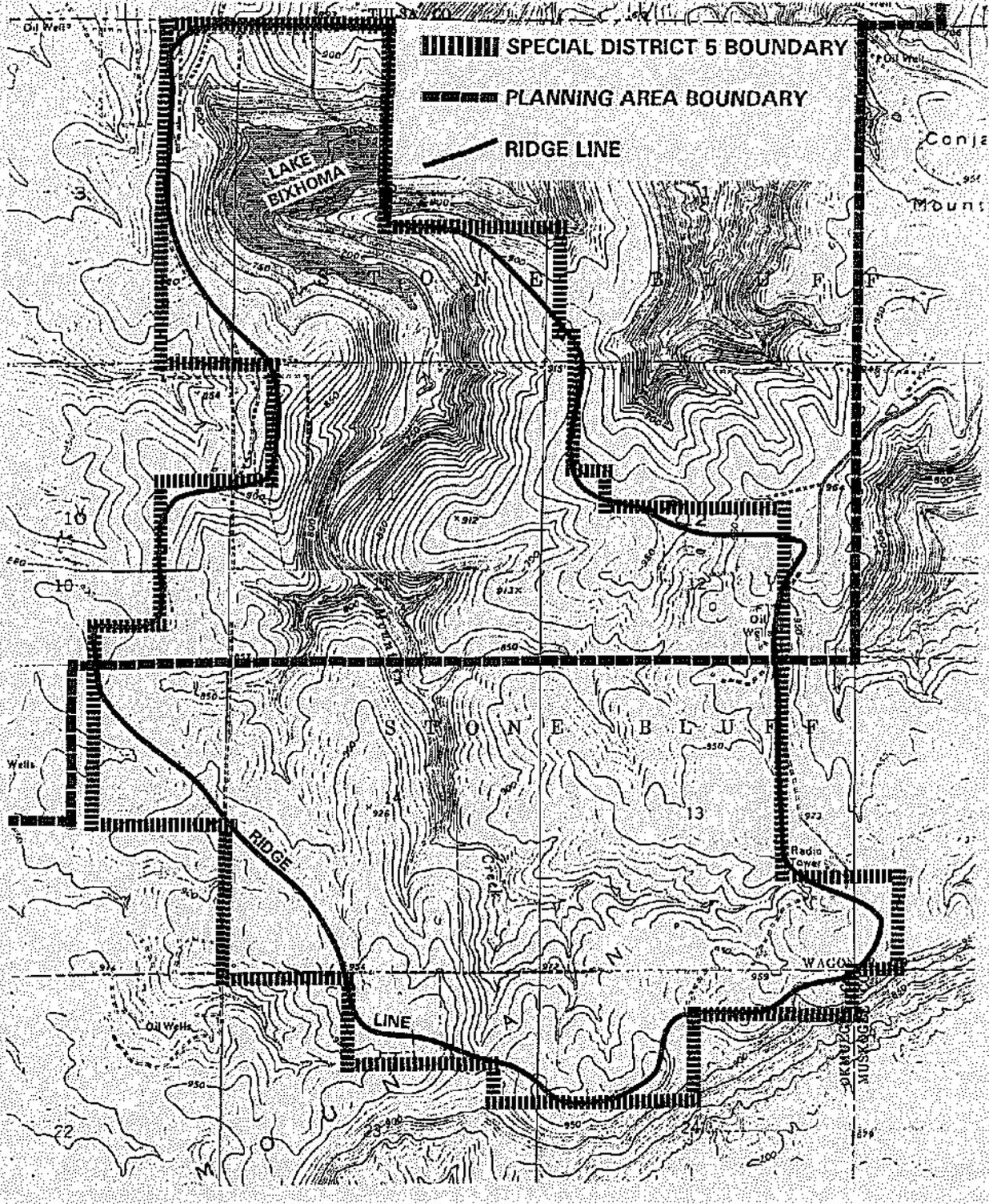
- e. The last area for Special District 5 designation is the Lake Bixhoma Watershed. The lake is a primary source of Bixby's potable water supply and preservation of water quality is an obvious need. This has implications regarding the permitted development along or near its shoreline and within its watershed. Prevention of point source and non-point source pollution is vital to preserving water quality in the Lake Bixhoma watershed and any future water source. The lake also serves an important recreational function for certain select activities. The following standards and/or policies are recommended for Special District 5:
- (1) The Lake Bixhoma Watershed area is recommended for annexation and/or acquisition by the City of Bixby. The Lake Bixhoma Watershed is a critical area in which development should not contribute to any environmental or water quality problems. The soil conditions and severe slopes must be carefully considered for any development.
 - (2) Special District 5 is to be recognized as a "development sensitive area".
 - (3) Urban development is to be discouraged.
 - (4) The undeveloped, natural, and rural character in Special District 5 watershed is to be encouraged and preserved.
 - (5) The City of Bixby should consider annexing all the watershed area to extend land conservation and preservation protections

to this extremely valuable municipal and regional resource.

- (6) Similar policies are recommended for the protection of any water source lake watershed in the Bixby planning area.

- f. Other areas may be appropriate for Special District designation. These include: the agribusiness (sod farms) areas located north of U. S. 64 (171st Street South) and adjacent to S. Mingo Road, large undeveloped parcels with major on-site power sources located along 171st Street South west of Memorial Drive, and the Rock Creek watershed. In addition, other areas which have not been identified may be appropriate to designate as a Special District. Any large undeveloped parcel of land held in common ownership and which has location immediately adjacent to Primary Arterial Streets, Corridor Arterial Streets, or Expressways, availability of major power sources, and other unique or special physical characteristics may be appropriate to designate as a Special District. Intensity designations and land uses higher than designated on the Plan may be found to be appropriate for these areas. Special District designation and design in such areas may only be accomplished through the planned unit development zoning process.

EXHIBIT 5 SPECIAL DISTRICT 5 MAP



7. **Expressways and Arterials** are the urban development design element which defines roadway categories on the Bixby Major Street and Highway Plan and the Bixby Comprehensive Plan. The Plan categories should be reflected consistently by category name and right-of-way requirements in the Bixby Code of Ordinances and its amendments, including the Bixby Subdivision Regulations; the Bixby Engineering Design Standards; and other applicable codes. Conflicts should be amended for consistency. Consistency with the Tulsa City-County Street and Highway Plan and its standards should be sought.

All arterial, collector, and residential street right-of-way should be secured in the development the development process. Prior to highway development by the State of Oklahoma, the recommended corridor-arterial street right-of-way should be secured through the development process as adjoining land is subdivided as possible. Building setbacks and site development will respect the proposed arterial and service roads. Those portions of the service road constructed by developers can be used temporarily as parking areas until the service road is opened for operation. Temporary parking on the service road will not be used in calculations of parking requirements.

The suggested Plan categories for expressways, arterials and streets have been set forth in the Transportation Plan section of this study and are repeated as follows:

**Table 1
PLAN CATEGORIES AND RIGHT-OF-WAY REQUIREMENTS**

PLAN CATEGORY	MINIMUM WIDTH OF RIGHT-OF-WAY	DESIGN AND CONSTRUCTION STANDARDS
Expressway (Freeway)	Variable	As per the standards of the Oklahoma Department of Transportation (ODOT).
Corridor Arterial*	120 to 200 feet (may include two 40' R.O.W. service roads)	As per the City of Bixby Engineering Design Standards or standards ODOT, whichever is greater.
Primary Arterial	120 feet	As per the City of Bixby Engineering Design Standards.
Secondary Arterial	100 feet	As per the City of Bixby Engineering Design Standards.
Industrial and Commercial Collector	80 feet	As per the City of Bixby Engineering Design Standards.
Residential Collector, Residential Street, and Industrial and Commercial Streets	60 feet	As per the City of Bixby Engineering Design Standards
Residential Streets	50 feet	As per the City of Bixby Engineering Design Standards

* Actual design and standards may be regulated by Oklahoma Department of Transportation design requirements. However, in any instance, the roadway design must accommodate the special needs of the roadway so designated. That is, it must provide for higher traffic capacity and speeds while at the same time providing for some limited roadway access from intersecting arterials, collector and service streets.

8. Intensity is the element of urban development design which defines the level or concentration of use activity. The intensities depicted in the Bixby Comprehensive Plan have the following values:

Table 2
PLAN INTENSITY VALUES

Intensity Level	Nonresidential*	Residential**
High Intensity	75%	25.0 maximum
Medium Intensity	50%	18.0 maximum
Low Intensity	30%	6.0 maximum (4.0 average)
Rural Intensity	-	1.5 maximum
Development Sensitive	***	***

* The expression of nonresidential intensities are in terms of floor area ratios (FAR). This is defined as: "A mathematical expression determined by dividing the floor area of a building by the area of the lot on which it is located." Only the principal use area of the structure is used in calculating the gross floor area, excluding any enclosed parking areas.

** The residential intensities are expressed in terms of the maximum number of dwelling units per gross acre. The gross acre includes all land available for development without exclusions for public or private nonresidential use and improvements.

*** Development Sensitive is a supplemental designation that is superimposed over other intensity areas.

The relationship of existing and proposed zoning districts to the Plan elements and intensities is illustrated in the "Matrix to Determine Bixby Zoning Relationship to The Bixby Comprehensive Plan". This exhibit shows the general intent of Plan policies, but cannot be relied upon as the final basis for making decisions on re-zoning applications. The intensity of land use categories shown on the Plan Map are not to be interpreted as a zoning map.

EXHIBIT 5
MATRIX TO DETERMINE BIXBY ZONING RELATIONSHIP
TO THE BIXBY COMPREHENSIVE PLAN

PLAN INTENSITIES	BIXBY ZONING DISTRICTS																						
	FD	AG	RE(1.5)	RS-1(2.7)	RS-2(4.0)	RS-3(5.2)	RMH(8.7)	RD(10.4)	RM-1(14.1)	RM-2(18.2)	RM-3(25.0)	OL(0.30)	OM(0.50)	CS(0.50)	CG(0.75)	CH(na)	ST(0.40)	IR(0.50)	IL(na)	IM(na)	IH(na)	PUD**	
DEVELOPMENT SENSITIVE	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RURAL	+	+	+	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
LOW INTENSITY	+	+	+	+	+	+	0	0	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
RESIDENTIAL	+	+	+	+	+	+	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OFFICE	+	+	+	+	+	+	0	0	-	-	-	+	-	-	-	-	-	-	-	-	-	-	0
MEDIUM INTENSITY	+	+	+	+	+	+	0	+	+	+	0	+	+	+	0	-	0	0	-	-	-	-	+
RESIDENTIAL	+	+	+	+	+	+	0	+	+	+	0	+	+	0	0	-	0	-	-	-	-	-	+
COMMERCIAL OFFICE	+	+	+	+	+	+	0	+	+	+	0	+	+	+	0	-	0	-	-	-	-	-	+
SCIENCE-TECHNOLOGY	+	+	+	+	+	+	0	+	+	+	0	+	+	0	0	-	+	-	-	-	-	-	+
INDUSTRIAL	+	+	+	+	+	+	0	+	+	+	0	+	+	0	0	-	+	0	-	-	-	-	+
HIGH INTENSITY	+	0	0	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	0	0	+	+
RESIDENTIAL	+	0	0	0	0	0	+	+	+	+	+	+	+	+	0	0	0	0	0	0	0	0	+
COMMERCIAL OFFICE	+	0	0	0	0	0	+	+	+	+	+	+	+	+	+	+	0	0	0	0	0	0	+
SCIENCE-TECHNOLOGY	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	-	-	-	+
INDUSTRIAL	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	+	+	+	+
URBAN DEVELOPMENT DESIGN GUIDELINES																							
NEIGHBORHOOD	+	+	+	+	+	+	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
ACTIVITY CENTER TYPE 0	+	0	+	+	+	+	0	+	0	0	-	+	-	+	-	-	-	-	-	-	-	-	+
ACTIVITY CENTER TYPE 1	+	0	+	+	+	+	0	+	+	+	0	+	0	+	0	-	-	-	-	-	-	-	+
ACTIVITY CENTER TYPE 2	+	0	+	+	+	+	0	+	+	+	0	+	0	+	0	-	-	-	-	-	-	-	+
ACTIVITY CENTER TYPE 3	+	0	+	+	+	+	0	+	+	+	+	+	+	+	0	0	0	-	-	-	-	-	+
CORRIDOR	+	0	0	0	0	0	0	+	+	+	+	+	+	+	0	0	+	+	0	0	0	0	+
SPECIAL DISTRICTS	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+
SPECIAL DISTRICT 1	+	0	0	0	0	0	0	+	+	+	+	+	+	+	+	+	0	0	0	-	-	-	+
SPECIAL DISTRICT 2	+	0	0	0	0	0	0	0	0	0	0	+	+	+	0	-	+	+	+	0	0	-	+
SPECIAL DISTRICT 3	+	+	-	-	-	-	-	-	-	-	-	0	0	0	0	-	0	0	0	0	0	-	+
SPECIAL DISTRICT 4	+	+	0	-	-	-	-	-	0	0	-	0	0	0	0	-	0	0	0	0	0	-	+
SPECIAL DISTRICT 5	+	+	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+

* Numbers in parentheses equal maximum number of dwelling units per gross acre for residential zoning districts and maximum floor area ratio for nonresidential zoning districts. The permissible intensity of use varies according to the base zoning(s) in which the PUD is located.

A description of the intensity designations and zoning considerations is provided below:

- a. High Intensity areas are those areas of the greatest and most intense activity and effect requiring the highest accessibility possible, require a high level services and should be separated from less intense areas by medium density areas and/or buffering areas or physical features. The zoning classifications that may be in specific areas are dependent on many factors, including adjacent uses and specific site considerations. High intensity zoning classifications include PUD (at high intensity densities), RM-3, CG, CH, IR, IL, IM, and IH categories. The ST category is a medium intensity classification appropriate in high intensity areas. An RMH zoning district may be appropriate at medium intensity densities. The development of such an RMH district should be as an independent subdivision or development and should be buffered from adjoining medium and low intensity uses.
- b. Medium Intensity areas are those areas of moderate activity and effect and physical impact requiring a high level of accessibility and services. These areas are generally found at the intersection of arterial streets. Medium intensity uses are used as transitional uses between high and low intensity areas. Medium intensity zoning classifications include PUD (at medium intensity densities), RD, RM-1, RM-2, OL, OM, and CS and in some instances ST. The ST classification may be appropriate in medium intensity areas together with a PUD designation. An RMH zoning district may be appropriate at medium intensity densities. The development of such an RMH district should be as an independent subdivision or development and should be buffered from adjoining medium and low intensity uses.
- c. Low Intensity areas are low activity and effect living areas for residential and related activities and uses. Good accessibility and services are necessary. Low intensity zoning classifications include AG, FD, RE, RS-1, RS-2, and RS-3. An RMH zoning district may be appropriate at low intensity densities. The development of such an RMH district should be as an independent subdivision or development and should be buffered from adjoining medium and low intensity uses.
- d. Rural Intensity areas are non-urban areas or large-lot residential development. The agricultural areas are often transitional and may

proceed in the interim before facilities and services are available for the support of even low intensity development. Zoning in these areas include the AG and FD. The RE and RS-1 zoning classification may be appropriate in this intensity area.

- e. Development Sensitive areas of the natural and/or manmade environment which should be restricted from development to ensure that public safety and benefit are maintained. Development sensitive areas within Bixby are those characterized by: (1) frequent flooding (as defined by the U.S. Department of Housing and Urban Development, Federal Insurance Administration); (2) slopes in excess of 12% with erodible soils; (3) frequently flooded and flood prone soils identified by the most current publication of "Soil Survey of Tulsa County, Oklahoma", U.S.D.A. Soil Conservation Service; (4) unique environmental qualities such as wildlife habitat, forested areas, or areas with specific aesthetic qualities; and (5) areas where development involves special consideration of public safety and health including the Lake Bixhoma shoreline and watershed. Undeveloped open space, outdoor recreation areas and agricultural areas are often appropriate in these areas as are AG and FD zoning classifications. No development should be permitted in these areas unless all negative impacts and effects associated with development are corrected or mitigated and the public, health, safety and general welfare will be preserved.
9. The Bixby Comprehensive Land Use Plan map graphically depicts the Plan's urban development design goals, objectives and policies. Land use may vary according to the zoning districts permissible in each intensity category. Existing zoning and land uses in conflict with the urban development design guidelines are in to continue in use, but are not to expand.

LAND USE, TRANSPORTATION AND PUBLIC FACILITIES AND UTILITIES GOALS, OBJECTIVES AND POLICIES

The land use, transportation and public facilities and utilities are intended to be consistent with the urban development design goals, objectives and policies and the municipal zoning, subdivision and other development regulations of the City of Bixby, Oklahoma.

LAND USE

GENERAL GOALS:

1. It is intended that a variety of land uses be provided in Bixby and its planning area according to compatibility and public service systems capacity.
2. It is intended that compatible land uses be allowed to locate near each other and to establish and maintain a continuity of land uses.
3. Land use in Bixby will be categorized into: agricultural; residential; commercial; industrial; park-recreation-open space; and public and quasi-public land. Land use is to be structured to the future in accordance with the Urban Development Design Guidelines goals, objectives and policies.
4. Urban development is intended primarily for throughout the Planning Area in accordance with the Urban Development Design Guidelines and the existing or planned availability of urban services and infrastructure. The intensity of development will vary according to the Urban Development Design Guidelines and compatibility and suitability of uses and the availability of urban services. The portions of the Planning Area beyond existing or planned urban and municipal services are unlikely to have urban development within the Plan period. However, planning and preparation for such development should precede those services and facilities. It is understood that development may occur prior to that which is anticipated and portions of the Plan may be amended as appropriate. Development occurring prior to what is anticipated by this Plan will be made in accordance with the Comprehensive Plan goals, objectives and policies.
5. The Bixby Comprehensive Plan 2001-2020 map depicts desired land use, intensities of use and development patterns to the year 2020. The Urban

Development Design Guidelines are intended to be applied throughout the Planning Area. Intensities depicted for undeveloped lands are intended to develop as shown. Land uses depicted for undeveloped lands are recommendations which may vary in accordance with the intensities depicted for those lands and the Urban Development Design Guidelines goals, objectives and policies.

6. The Bixby zoning and subdivision regulations and appropriate revisions or amendments to these regulations and to the Plan will be used to implement the Bixby Comprehensive Plan 2001-2020.

AGRICULTURAL AREAS

Agricultural Area Goals:

1. Those land areas for which the most appropriate use is agricultural production are to be so maintained and preserved. Agricultural areas include agricultural production land, vacant land, rural residences and open land. In many instances, bottom-lands and flood plains of the Arkansas River and area creeks are most appropriate for agricultural area designation.
2. Those areas beyond urban services and most suitable for urban development should be preserved for agricultural production until the full range of urban services, facilities and utilities are available.

Agricultural Area Objectives:

1. Agricultural development and areas are intended for those areas within natural flood plains and in those areas uniquely suited to preserving and maintaining the rich agricultural businesses and heritage associated with Bixby.
2. The upper reaches of the Bixby Creek, Posey Creek, Duck-Snake Creek watersheds and the remaining portion of the Bixby Planning Area are intended to remain primarily agricultural in land use and development during the Plan period.

Agricultural Area Policies:

1. Public facilities and utilities necessary to support agricultural activities

should be provided through assistance offered by the U. S. Department of Agriculture and associated State of Oklahoma agencies. However, any such facilities and utilities or assistance is intended to be provided in a manner in accordance with the Bixby Comprehensive Plan 2001-2020. Local, state and federal agencies are to coordinate with the City of Bixby in the provision of services, facilities and utilities to ensure compliance with the Plan.

2. The preservation of agricultural activities and areas will be taken into consideration prior to the extension or provision of urban services or higher intensity zoning in these areas. Those areas having prime or superior potential for crop or garden vegetable production should be protected from urbanization when other less productive and equally serviceable areas can be developed. The first reference for determination of the prime soil areas is the U.S.D.A. Soil Conservation Service Soils Survey for Tulsa County, Oklahoma. Contact with the Tulsa County Soil Scientist(s) is encouraged.
3. The use of sound agricultural and soil management practices will be encouraged, as well as assistance provided by the U.S. Department of Agriculture, Soil Conservation Service and appropriate local and state agencies, in the application of farming and agribusiness activities.
4. Agricultural operations and businesses are intended to protect the water quality of surface and ground water sources from degradation and pollution.
5. *Agricultural operations and businesses are intended to be protected from any detrimental impacts of adjoining nonagricultural development during and after the development process.*

RESIDENTIAL AREAS

Residential Area Goals:

1. This category of land use consists of areas where people live and maintain their homes and places of residence. Uses within these areas are comprised of single family detached houses, duplexes, townhouses, multiple family units (apartments, condominiums and group housing), and mobile homes.
2. It is intended that existing and future residential neighborhoods be provided for all citizens which are safe, comfortable, quiet and separated from non-

compatible uses and within convenient proximity of necessary services, facilities and utilities for residential life and activities.

3. It is intended that the opportunity of freedom of choice for citizens as to location in the various areas of the Bixby Planning Area be preserved.
4. It is intended that adequate housing be available all citizens.

Residential Area Objectives:

1. Residential areas will be conserved by eliminating and preventing the development and spread of blight.
2. The character of residential areas will be developed and preserved in accordance with the Urban Development Design Guidelines goals, objectives and policies and other Plan elements. Incursions of incompatible uses will be prevented.
3. Adequate public services, facilities and utilities will be provided for existing and future residential areas.

Residential Area Policies:

1. Residential areas will be zoned, designed and developed to ensure the existing and future use of those areas as residential. Residential lot arterial street frontage will be avoided and residential lot collector street frontage will be discouraged in development design.
2. Residential areas will be located primarily in neighborhoods and may be located in activity centers and corridors according to the Urban Development Design Guidelines goals, objectives and policies.
3. Residential development within areas subject to periodic flooding will be strongly discouraged and regulated. Compliance with the Floodway Supplemental Zoning Districts, flood prevention codes and other applicable regulations is required.
4. New residential development will be designed, developed and constructed in a manner harmonious with and preserving the natural environment. Forested areas, sloped land in excess of 15%, drainageways, lake, river and

scenic vistas will be preserved and the natural contours of the land will be carefully considered in project and site development.

5. Abandoned and deteriorating structures should be rehabilitated or cleared.
6. Residential mobile home subdivisions or parks will be buffered and screened from abutting land uses.
7. Residential lots which back or side on adjacent arterial streets will be designed to have additional lot depth, width, setback, buffering, open space or separation from the arterial to alleviate traffic impact on the residential use. Appropriate revisions to the zoning and subdivision regulations should be developed and adopted.
8. Undeveloped and developed land annexed into the City of Bixby will be zoned as applicable at the time of annexation and in accordance with the Bixby Comprehensive Plan 2001-2020. Annexed existing uses in conflict with the provisions of the Plan are allowed to continue use and operation according to municipal policy as long as the public health, safety and general welfare are protected and not endangered. Such uses are not intended to be expanded.

COMMERCIAL AREAS

Commercial Area Goals:

1. The commercial area land use category includes retail and service commercial and office establishments and businesses in the Bixby Planning Area.
2. It is intended that commercial and office activities be concentrated in planned, integrated shopping and business centers conveniently located throughout Bixby in relation to the needs and services of residents in the area.
3. It is intended that strip commercial development be discouraged, except in corridor areas and in accordance with Urban Development Design Guidelines goals, objectives and policies for corridors.
4. It is intended that an economically healthy range of commercial and office

uses be designed and developed to serve the needs of existing and future Bixby residents.

Commercial Area Objectives:

1. Commercial and office uses will be concentrated and clustered at appropriate major street intersections.
2. Commercial and office land use sites will be of appropriate size and developed in accordance with zoning and subdivision regulations to provide adequate parking, separation and open space, and to avoid crowding, blighting and other problems which can hamper the vitality of business enterprises.
3. Commercial and office uses located within Bixby not in conformance with the Urban Development Design Guidelines and Commercial Area goals, objectives and policies are intended to continue in use and zoning but will be designated only as per use on the Plan map.

Commercial Area Policies:

1. The Bixby Downtown Area is intended to be maintained as a viable commercial and office center. It is recognized that the Bixby Downtown Area is in transition as to the specific uses which will remain and redevelop in the area. Opportunities should be created to enhance new development and revitalize existing development in the area. The area should have a Special District 1 Plan prepared in the early Plan period to foster continued area vitality.
2. Spot zoning should generally be prohibited. Existing nonconforming uses or zoning will continue but will not be expanded or enlarged. Undeveloped commercial, office or industrial spot zoning should be re-zoned to the highest appropriate zoning district in conformance with the Urban Development Design Guidelines goals, objectives and policies and other Plan elements. Spot zoning is "zoning a relatively small area differently from the zoning of the surrounding area, usually for an incompatible use and to favor the owner of a particular piece or pieces of property. Spot zoning is invalidated by the courts when it violates *'in accordance with a comprehensive plan'* requirements of state enabling legislation. The *'spotness'* is in the arbitrary and inappropriate nature of the change rather

than, as is commonly believed, in the size of the area. Spot zoning often is a reason why many *flexible* techniques such as *floating zones* or *conditional rezoning* have been prohibited, the argument being that conferring narrow development permission is a form of spot zoning. Special small-area zoning districts, however, have been upheld where the comprehensive plan demonstrates a special need, such as for a historic area or to preserve a sensitive natural area. Spot zoning, in sum, can be legal or illegal, but laymen generally think that it always is illegal and use the term loosely - and pejoratively - at public hearings when they oppose the change." (Source: "The Language of Zoning", Report No. 22, Planning Advisory Service, ASPO, 1976).

3. The Bixby zoning regulations should be amended such that the CG zoning category requires a minimum setback and screening and/or landscape buffer between it and any adjoining residential zoning district.
4. Commercial and office property abutting residential areas will be required to provide measures designed to reduce detractive impacts and nuisances to the residential areas. Screening fences, landscaping, setbacks and lighting modifications will be required. Improvements should be sought in existing legal nonconforming uses when permits are sought for expansion or alterations.
5. Low intensity office zoning and uses will be used to act as buffers between detached single family residential and nonresidential uses when multiple family residential and recreation-open space uses are not appropriate.
6. Existing sign controls contained within the zoning regulations will be enforced and, if necessary, strengthened to maintain standards for advertising and open space.

SCIENCE-TECHNOLOGY AREAS

Science-Technology Area Goals:

1. The growing importance of the science-technology economic and businesses in the local, regional, national, and global economy is recognized. It is intended that the economic base of Bixby be developed and expanded through the support and encouragement of existing science-technology business, and the attraction of new science-technology to the

Bixby area. Such development and growth should be compatible with existing science-technology businesses development and land uses.

2. It is intended that science-technology areas and Special Districts be developed, maintained and promoted that have accessibility to a balanced transportation network consisting of highway, roadway, air, pedestrian and transit systems providing safe, economic and efficient movement of people and goods.
3. It is intended that the scattering of individual unplanned science-technology uses in areas planned for other uses be strongly discouraged by making known, as possible, the existing and future science-technology areas.
4. It is intended that the science-technology businesses locating, operating and functioning in the Bixby Planning Area be operated and function in a safe and healthy manner and that such businesses have minimal detrimental impact on the environment and maximum economic benefit.

Science-Technology Area Objectives:

1. Those sites exhibiting desirable characteristics for science-technology development should be preserved and protected from encroachment by non-compatible uses. Science-technology uses should be prevented from encroaching into non-compatible use areas. Adjoining different uses should be buffered and screened from science-technology uses.
2. Privately and publicly planned, designed and developed business parks that cluster science-technology sites and uses are encouraged in the Bixby area in accordance with the Urban Development Design Guidelines and other Plan element goals, objectives and policies.

Science-Technology Area Policies:

1. Science-Technology Areas are particularly appropriate to develop as large, comprehensively planned Special Districts with significant open space, landscaping and campus layout. The use of the Planned Unit Development zoning category is encouraged for such areas.
2. Science-Technology sites and facilities shall be designed, developed and constructed to optimize open space between adjacent uses and to provide

visual screening, particularly through the use of natural features, foliage and setbacks.

3. Science-Technology traffic shall use the major street system and be restricted from collector and minor streets intended and designed for other uses, except those specifically designed for science-technology or industrial traffic.
4. Science-Technology districts adjacent neighborhoods should be separated from low intensity uses by landscaped buffers, green-belts and open space, or by medium intensity residential or nonresidential uses.
5. If rail facilities are planned to support or serve planned science-technology districts, the rail facilities will be planned, designed, developed and constructed to maximize open space between adjacent uses, as appropriate, and to provide visual screening through the use of natural features and foliage.
6. The Corridor along 151st Street South (S.H. 67) is particularly appropriate for the location of science-technology uses. Areas within the Corridor developing as such may be appropriate to designate as Special Districts. Use of Planned Unit Development zoning would be appropriate for such parcels.
7. The proper plans, preparations, assurances and necessary measures for safe, efficient, effective and environmentally sound mitigation of any detrimental impacts associated with the science-technology uses are to be planned, provided and assured by the science-technology use for existing and future residents and the environment.

INDUSTRIAL AREAS

Industrial Area Goals:

1. It is intended that the economic base of Bixby be developed and expanded through the support and encouragement of existing industry, and the attraction of new industry to the Bixby area. Such development and growth should be compatible with existing industries, development and land uses.
2. It is intended that industrial areas and districts be developed, maintained and

promoted that have accessibility to a balanced transportation network consisting of highway, roadway, railway, air, pedestrian and transit systems providing safe, economic and efficient movement of people and goods.

3. It is intended that the scattering of unplanned individual industrial uses in areas planned for other uses be strongly discouraged by making known, as possible, the existing and future industrial areas.
4. It is intended that the industries locating, operating and functioning in the Bixby Planning Area be operated and function in a safe and healthy manner and that such industries have minimal detrimental impact on the environment and maximum economic benefit.

Industrial Area Objectives:

1. Those sites exhibiting desirable characteristics for industrial development should be preserved and protected from encroachment by non-compatible uses. Industrial uses should be prevented from encroaching into non-compatible use areas. Adjoining different uses should be buffered and screened from industrial uses.
2. Privately and publicly planned, designed and developed industrial parks that cluster industrial sites and uses are encouraged in the Bixby area in accordance with the Urban Development Design Guidelines and other Plan element goals, objectives and policies.

Industrial Area Policies:

1. Industrial sites and facilities shall be designed, developed and constructed to optimize open space between adjacent uses and to provide visual screening, particularly through the use of natural features, foliage and setbacks. In some instances, industrial areas are particularly appropriate to develop as large, comprehensively planned Special Districts with significant open space, landscaping, and campus layout. The use of the Planned Unit Development zoning category is encouraged for such areas.
2. Industrial traffic shall use the major street system and be restricted from collector and minor streets intended and designed for other uses, except those specifically designed for industrial traffic.

3. Industrial districts adjacent neighborhoods should be separated from low intensity uses by landscaping, green belts and open space or medium intensity residential or nonresidential uses.
4. Any existing or planned rail facilities supporting or serving planned industrial districts will be planned, designed, developed and constructed to maximize open space between adjacent uses, as appropriate, and to provide visual screening through the use of natural features and foliage.
5. Certain portions of Sections 13 and 14, Township 18 North, Range 13 East of the I.B. & M. may be appropriate for Special District designation for industrial-business parks and should have Special District plans prepared for each section if so designated. The use of the Planned Unit Development zoning category is encouraged for the development of a Special District.
6. The area identified as Special District 2 in the Urban Development Design Guidelines of the Plan has been zoned as a planned business-industrial park in accordance with the Urban Development Design Guidelines goals, objectives and policies and other Plan elements. The Planned Unit Development zoning category was used together with industrial and commercial zoning for this development. The use of Planned Unit Development zoning with industrial zoning is encouraged for other industrial projects.
7. The Bixby zoning regulations should be amended such that the Bulk and Area Requirements for the IL zoning classification to include a maximum floor area ratio. A floor area ratio equal to or somewhat greater than the floor area ratio of the IR district is recommended.
8. The proper plans, preparations, assurances and necessary measures for safe, efficient, effective and environmentally sound mitigation of any detrimental impacts associated with the industry must be satisfactorily planned, provided and assured by the industry for existing and future residents and the environment.

PARK-RECREATION-OPEN SPACE AREAS

Recreation-Open Space Area Goals:

1. It is intended that lands for neighborhood, community and regional parks be

provided to meet the active and passive recreational and leisure needs of all age groups and located for convenient access by groups for which the recreation-open space is intended to serve.

2. It is intended that open space areas be provided preserving significant features/views, enhancing the visual character of Bixby, buffering adverse effects of certain land uses and serving conservation purposes of valuable resources.

Recreation-Open Space Area Objectives:

1. Existing and planned parks will be maintained and evaluated to assure service in relationship to need.
2. New recreation areas and facilities should be provided for the service of new urban neighborhoods of the Bixby Planning Area. New land for parks and recreation facilities should be acquired in accordance with population standards and demand.
3. Opportunities for a variety of organized and unorganized recreation activities for all ages will be maintained and improved according to need.

Recreation-Open Space Area Policies:

1. A system of parks, recreation and open space will be developed and maintained as generally depicted on the Bixby Comprehensive Plan 1991-2020 map. The concepts for select park sites will be developed as generally depicted in the Concept Park Plan exhibits, or comparable services and facilities will be provided. The maintenance and enhancement of the existing park facilities is the first priority of the Bixby park system. The addition of select park facilities to resolve deficiencies and meet demands is the second priority. The designation and acquisition in developing areas of potential recreation-open space-park sites is the third priority.
2. The Arkansas River and area flood plains and agrarian activities will serve as a design focal point of and recreational link for the Bixby planning area.
3. The City of Bixby will provide five community parks to serve as the major park and recreation sites for the community. Those community park sites will include:

- a. The Bixby Sports Complex (recommended for expansion);
 - b. Washington Irving Park (Bixby River Park/Audubon Park);
 - c. An additional "New Sports Complex"; optional locations would be west of Memorial Drive and south of the Arkansas River, or east of Memorial Drive and north of the Arkansas River. The minimum size would be 40 acres for a single purpose/sports program site.
 - d. One new "Central" Community Park located centrally north of the Arkansas River; and
 - e. One new "Central" Community located centrally west of Yale Avenue and south of the Arkansas River.
4. Existing neighborhood park and recreation areas will be maintained and improved. Those existing parks which are not adequately served with facilities will be a high priority for improvement.
 5. Provision should be made to acquire park lands that served existing under-served areas and developing areas within Bixby. These efforts are to be coordinated with the acquisition and development of a additional new sports complex (if expansion adjacent the Bixby Sports Complex is not feasible) and the two new "Central" Community Parks. A Park Master Development Plan should be prepared for each site once it is acquired.
 6. The Bixby Trail System will continue to be a major design feature of the Bixby parks, recreation, and open space plan.
 7. Safety and security should be a continuing design goal for all park, recreation and open space lands and facilities, and for the Bixby Trail System.
 8. Local, state and federal assistance and grant monies will be secured, when feasible, to assist in the acquisition and development of recreation lands. The donation of lands for these purpose from private sources is encouraged and should include lands which meet the community park and recreation needs.
 9. Charley Young Park in the Bixby Downtown area should continue to serve as a neighborhood park and as a focal point and design element of Special District 1. Any flood protection and drainage detention/channel improvements for the Downtown area should include the provision of connections for maintenance trails and linkage to Charley Young Park.
-

Consideration should be given to the multiple use of any storm water facility and potential festival and special event activities.

10. **The Bixby Sports Complex should continue to serve Bixby as a primary community park and have its facilities maintained and improved. However, the need for additional recreation and sports programs land and facilities is increasing dramatically. Local use continues to grow. Numerous metropolitan and regional events continue to be held there on an annual basis. With this increasing demand, Bixby should consider expanding the Bixby Sports Complex and its function to a district/regional park.**

The following is recommended for the park:

- a. Its visual image should be improved through planting of trees in select areas to provide relief from sun, wind and dust, and to enhance definitions of space and an overall positive natural image.
 - b. Paved parking areas should be provided which require little or no maintenance.
 - c. Consideration should be given to expanding the land at this site to accommodate growing needs of the soccer, baseball, softball, rodeo, horse-shoe, and other sports programs in the community. Acquisition of land adjacent to this site is strongly recommended to accommodate growing recreation needs in the community. It is recommended that a minimum of 80 additional acres be acquired.
 - d. If expansion at this site is not feasible, consideration should be given to locating either the soccer facilities or the baseball and softball facilities to the proposed "new" sports complex. This will open land at the existing site for expansion of the remaining recreation program and facilities.
 - e. Immediate improvement needs at this facility should be limited to temporary or portable facilities or emergency-need improvements until Bixby decides final land acquisition and expansion strategies. The "Bixby Sports Complex Master Development Plan" should be updated once expansion and location decisions are reached.
 - f. Optional access points to the facility should be studied. Onsite circulation should be a key feature of this facility's master plan.
11. **The Washington Irving Park should continue to serve as a community park. This facility should be maintained and improved, and enlarged as necessary. The pedestrian-bike link to the Daily Family YMCA Center should continue to be maintained and enhanced. A trail link to the Fry Creek Channels and**

- maintenance trails should be developed in this area and from both sides of Memorial Drive.
12. The Haikey Creek Tulsa County Park should continue as a district/regional park serving residents of southeast Tulsa County. Its facilities should continue to be maintained and improved by Tulsa County. A trail system link should be developed to Haikey Creek Park by the City of Bixby and Tulsa County.
 13. Linkage of all community parks to the Bixby Trail System and to the Tulsa Trails System will continue to be sought and encouraged. Connection to both of these recreation systems is encouraged for both sides of the Arkansas River with additional linkage to the Bixby Downtown Area. "Grade separated" trail crossings of major roadway is encouraged in the design of drainage facilities and bridges. An extension of the Trails System to Bixhoma Lake is recommended.
 14. Maintenance and enhancement will continue for the old Memorial Drive Arkansas River bridge as a pedestrian-bicycle Trail System link across the Arkansas River.
 15. Future roadway and bridge crossings of the Arkansas River should provide for separate facilities for pedestrians and bicycles and which will link to the Bixby Trails System and/or the Tulsa River Parks Trail System. Such connections are suggested for a Yale Avenue/Yale Place Bridge and any expressway and/or arterial street crossing of the Arkansas River to be located east of Memorial Drive.
 16. The old Memorial Bridge structure might be used for special event/activities incorporated into the area's Green Corn Festival. Coordination with River Parks and other communities' festivals should be considered with the continued expansion of the Bixby Trails System and the Tulsa River Parks Trail System. Adjacent to the bridge, pavilions and/or restaurants can be developed next to the river which use the river vistas, the architectural character of the bridge, River Parks System and Bixby Green Corn Festival as design and marketing themes.
 17. The recreation opportunities at Lake Bixhoma should continue to be maintained. The preservation of the quality and viability of this water supply is of particular importance and should be the first priority for this
-

- facility. Development activity within the Bixhoma Lake watershed is not recommended. Strict compliance with all local, state, and federal health and environmental protection standards is strongly encouraged to protect the water quality of this critical community facility.
20. Those Bixby parks which provide high visibility to travelers to and through Bixby should have certain portions developed to serve as "entry statements, monuments, elements or features " to the City of Bixby.
 21. Additional sites should be considered for acquisition to develop as entry treatments to the Bixby. Entry treatment sites/facilities should include monument signs and plants which have common design elements, materials, textures, image, and features of a high quality. Local civic organizations could sponsor/fund these "front doors" to the city. Specific places which provide or will provide opportunities for "entry treatment" include:
 - a. 111th Street and S. Memorial Drive;
 - b. 121st Street and S. Sheridan Road;
 - c. 121st Street and S. Mingo Road;
 - d. 131st Street and S. Mingo Road;
 - e. 141st Street and S. Yale Avenue (or Yale Place) if a bridge is provided across the Arkansas River;
 - f. 151st Street (O.S.67) and S. Lewis Avenue;
 - g. 171st Street and S. Lewis Avenue; and
 - h. 171st Street (U. S. 64) and S. Garnett Road.
 22. The City of Bixby should support the development of private community golf courses and other special recreation facilities (e.g., equestrian facilities) and access to these facilities by the Bixby Trails System.
 23. The abandoned railroad right-of-way between the Kimberly-Clark plant and the Special District 1 should be used as a hike-bike trail connecting the Bixby Trails System with the Tulsa Trails System and the River Parks System. If railroad right-of-way cannot be used, an alternative connection should be provided. Such use would be carefully coordinated with adjoining land uses and the potential use of rail facilities for service to planned industrial areas.
 24. Standards should be developed for the parks, recreation, and trail facilities which set forth consistent and common design elements. These would
-

include but are not limited to: construction materials, textures, colors, structural elements and/or features, text and graphic standards, lighting, playground equipment, and planting types. This would provide a common, repeated standard of quality and image throughout the park and recreation system. These standards would also serve to guide design of the entry treatments sites/facilities to Bixby. It is recommended that these standards be developed soon after the adoption of the Bixby Park, Recreation, and Open Space element of the Comprehensive Plan.

- 25. The following standards for park and recreation areas should apply except as otherwise determined appropriate:

**Table 3
STANDARDS FOR PARK AND RECREATION AREAS**

Type of Area	Acres Per 1,000 Population	Size of Site (Acres)		Radius of Area Served (Miles)
		Ideal	Minimum	
Playgrounds	1.5	4	2	0.5
Neighborhood Parks	2.0	10	5	0.5
Play Fields	1.5	15	10	1.5
Community Parks	3.5	100	40	2.0
District Parks	2.0	200	100	3.0 - 5.0
Regional Parks and Reservations	15.0	500-1,000 (varies)		10.0

Source: Planning Design Criteria, p. 90, DeChiara and Koppelman, 1969."

- 26. Changing demographics and a growing population will further increase the demand for park, recreation, trails, public events, sports programs, and other recreation, entertainment and leisure activities and facilities. The City of Bixby should study the need for a full-time staff position with the City that would coordinate and be responsible for these facilities and activities. Such a staff person would work with and coordinate with City planning, and

public works staff, Tulsa River Parks Authority staff, Tulsa County park staff, manage the Bixby Parks and Trails systems, schedule events, work with local civic groups and sports organizations, and facilitate and assist in managing this growing public service. This "recreation and community events director" would be the direct liaison with and represent the Bixby Park Board with the City of Bixby.

PUBLIC AND QUASI-PUBLIC AREAS

Public and Quasi-Public Area Goals:

It is intended that sufficient lands be provided and located in compatible intensity areas to meet the varying public and quasi-public area needs. Public and quasi-public uses generally consist of churches, libraries, schools, fire stations, hospitals, public safety facilities and public services and utilities facilities.

Public and Quasi-Public Area Objectives:

1. Public and quasi-public uses shall be located so as not to adversely impact surrounding land uses.
2. Public lands should be acquired in accordance with policies outlined in this Plan and in advance of development as is feasible and appropriate.
3. Major quasi-public areas should be centrally located within the community to ensure convenient accessibility and high visibility.
4. Major public lands will be centrally located and clustered to ensure convenient accessibility, to provide high visibility and to assist in the economical expenditure of public funds.

Public and Quasi-Public Area Policies:

1. The existing Bixby Municipal Building and any adjoining public lands shall be maintained as the central public land area for City operations and management at its present location to 2020, and expanded as necessary during the middle or later portions of the Plan period. Any new, major compatible facilities should be located in the Downtown Area at or adjoining this site.

2. **Neighborhood and multiple-neighborhood serving public lands should be located in or adjacent Type One, Two or Three Activity Centers.**
3. **Most quasi-public lands should be located in Type One, Two or Three Activity Centers. In some instances, such lands should be located at intersections of arterial and collector streets.**

TRANSPORTATION AND ROADWAYS PLAN

This element of the Bixby Comprehensive Plan 2001-2020 includes roadways, pedestrian-ways and bikeways, transit, rail and air facilities. The Roadways and Public Facilities Plan map depicts the major roadways and railways that will be necessary for full development or complete urbanization of the Bixby Planning Area. The Roadways Plan is also depicted on the Bixby Comprehensive Plan 2001-2020 map. The Urban Development Design element of the Plan goals, objectives and policies defines roadway categories right-of-way requirements.

GENERAL

Transportation Goals:

It is intended that an integrated, efficient transportation system be provided to safely, rapidly, efficiently and economically move people and goods and provide services within and through all parts of the Bixby Planning Area.

Transportation Objectives:

A full range of transportation opportunities are intended to be provided for the citizenry according to need and demand.

ROADWAYS

Roadway Goals:

It is intended that a safe and efficient street, arterial and highway system be provided to serve the Bixby Planning Area.

Roadway Objectives:

1. The proper level of accessibility and service shall be provided to each land use and activity.
2. Existing deficient streets within Bixby shall be identified and included in future capital improvement programs.
3. Through traffic and commercial and industrial traffic will be prevented in residential areas and neighborhoods.

4. Bixby should have direct access to the metropolitan area expressway system.

Roadway Policies:

1. The Transportation Plan element and the Roadways and Public Facilities Plan map shall reflect the official locations for local, state and federal transportation planning purposes. These locations and roadways are to be reflected in the Tulsa City-County Major Street and Highway Plan and any other regional transportation planning documents.
2. The Bixby network of roadways shall be designed, constructed and improved according to the specific City of Bixby Engineering Design Standards or standards of the Oklahoma Department of Transportation, whichever is greater. The definition of major roadways will be consistent throughout the Bixby development codes and regulations. An amendment to these codes and regulations may be necessary if the corridor arterial roadway category is adopted by the Plan and endorsed by O.D.O.T..
3. Through traffic and commercial and industrial traffic will be prevented in residential areas and neighborhoods by facilitating traffic flow around and interrupting traffic flow through those residential areas and neighborhoods and by continuing enforcement of municipal traffic codes.
4. The traffic carrying capacity of roadways shall be preserved and maintained by preventing incompatible land uses from developing along roadways and by limiting the number and location of curb cuts on arterial streets and highways.
5. Developers of commercial areas located at the intersections of arterial streets are intended to construct or provide the cost of the construction of the adjoining portion of the intersection roadway and traffic control improvements and modifications required by that commercial development.
6. Whenever a development or subdivision borders a planned arterial, corridor arterial or collector street, one-half of the roadway right-of-way will be dedicated to the public by the developer or subdivider according to the Plan category and right-of-way designated by the Roadway Plan and the Urban Development Design element. Half-street dedication for minor or collector streets by bordering subdivisions is not permitted

7. Permanent surfacing on existing public streets is encouraged by Bixby in areas without permanent all-weather street surfacing. Such improvements may be financed by means of special assessment districts and according to citizen approval.
8. A Mingo Valley Expressway Extension is to be provided across the Arkansas River to provide Bixby and the Planning Area direct access to the metropolitan expressway system. Consideration should be given to the Outer Loop Concept that has been developed by the Tulsa Metropolitan Area Planning Commission as an element of the Bixby Major Street and Highway Plan. S.H. 67 is intended to serve as the "southern loop" in the Bixby Major Street and Highway Plan for the short-range and mid-range period for the Planning Area.
9. The arterial streets that are recommended for improvement in the early stages of the Plan period are 171st Street South, from Lewis Avenue to Garnett Road, and Memorial Drive, from 151st Street South to 171st Street South.
10. A "by-pass" roadway system will be provided around Downtown Bixby and the Memorial Drive corridor to provide access around construction on S. Memorial Drive in the next several years.
11. Local, state and federal assistance will be secured, when feasible and appropriate, to construct new and replacement facilities and to maintain and improve roadways as needed.
12. Adopt the "Memorial Drive (151st Street South to 171st Street South) and 171st Street South (Memorial Drive to Garnett Road) Corridor Design Elements" standards to guide public and private development for these roadways. It is intended that these roadways be developed in the near future portion of the planning period.

PEDESTRIANWAYS AND BIKEWAYS

Pedestrianway and Bikeway Goals:

It is intended that sidewalks be provided in residential areas and in living areas to schools, working and shopping areas as an alternative means of transportation.

Pedestrianways and Bikeways Objectives:

1. Walking and/or bicycling routes should be provided in newly developing areas and subdivisions and in existing developed areas as feasible.
2. Pedestrianways will be designed to permit movement to schools, shopping areas and through neighborhoods.

Pedestrianways and Bikeways Policies:

1. Sidewalks shall be designed and constructed in accordance with the Bixby Subdivision Regulations and Engineering Design Standards for the City of Bixby.
2. The pedestrianway and bikeway system for Bixby will be developed in coordination with the parks-recreation-open space element of the Plan, and future connections to the Bixby Trails System, the Tulsa Trails System, and the River Parks System.
3. The trails system is intended to serve as an important alternative means of transportation for the Bixby Planning Area, and it is to have connections supplemented by connections to the sidewalk system.
4. A pedestrian and bicycle crossing will be provided with expressway and roadway crossings of the Arkansas River, and connected to area trails systems. These bridge crossings of the Arkansas River should provide for separate facilities for pedestrians and bicycles and which will link to the Bixby Trails System and/or the Tulsa River Parks Trail System. Such connections are suggested for a Yale Avenue/Yale Place Bridge and any expressway and/or arterial street crossing of the Arkansas River to be located east of Memorial Drive.

TRANSIT

Transit Goals:

It is intended that an economical and efficient alternative means of transportation be provided to Bixby that will supplement the use of the automobile.

Transit Objectives:

The Metropolitan Tulsa Area Transit System will be encouraged to provide safe, efficient and economical service to Bixby as appropriate and according to need.

Transit Policies:

Specific routes and stops established in Bixby by the Metropolitan Tulsa Transit Authority (MTTA) will give particular consideration to serving designated corridor areas, special planning districts and Type Two and Three Activity Centers.

RAIL

Rail Goals:

It is intended that new and existing rail facilities in Bixby be designed, developed, constructed and maintained to adequately serve the existing and expanding needs of Bixby.

Rail Objectives:

1. Existing and new rail facilities will be developed in harmony with surrounding land uses and the environment.
2. Railway and roadway intersections shall be improved and made safer through signalization and other means as necessary.

Rail Policies:

1. Rail facilities provided to industrial areas in Sections 13 and 14, Township 17 North, Range 13 East of the I.B. & M. will be constructed and maintained in an efficient, economically sound manner.
2. Railway and roadway intersections should be grade separated when feasible.
3. Residential street and rail crossings will be minimized. New residential subdivisions will not have local or street and railway crossings unless no other access is feasible. If such crossings are necessary, each will have the proper signalization or signs.

4. Arterial and railway intersection grade separation is strongly encouraged when feasible and practical. Proper signalization or signs of at-grade intersections will be provided.
5. New residential lots with rear or side lots adjacent to new and planned railways will be 30% deeper or wider than the standard minimum lot in the zoning district in which it is located. No new residential lots will front on railway right-of-ways. Revisions to the Bixby Subdivision Regulations will be made in the early part of the Plan period to accomplish this policy.

AIR FACILITIES

Air Facilities Goals:

1. It is intended that good access to the Richard Lloyd Jones, Jr. Airport and the Tulsa International Airport be maintained and improved for Bixby Planning Area residents.
2. It is intended that the local private air field facility be continued in safe and secure operation and in a manner having minimal adverse impact on area uses.

Air Facilities Objectives:

Hazards and nuisances associated with the operation of local, area and regional airports will be minimized.

Air Facilities Policies:

1. Development within identified hazard areas will not exceed heights that will adversely impact air safety and operations.
2. Activity and structures adversely impacting air operations and safety will be prohibited in developing areas.
3. Incompatible land uses and activity will be restricted in identified hazardous areas and residential uses will be prohibited in hazardous areas.
4. All airport plans and proposals that impact the Bixby Planning Area by introducing significant air traffic or low approach and/or departure flight patterns will be brought to the City of Bixby and coordinated with the Plan.

PUBLIC FACILITIES AND UTILITIES

GENERAL

This element of the Bixby Comprehensive Plan 2001-2020 includes goals, objectives and policies for educational, public safety, health, municipal building, library, parks, storm water drainage and other public facilities, and for water and sanitary sewer public utilities. The general locations of needed public facilities to 2020 are depicted on the Bixby Comprehensive Plan 20010-2020 map and the Roadways and Public Facilities Plan map. The specific locations of specific "near future" and general long range water and sanitary sewer improvements are depicted in separate engineering studies. Such water and sanitary sewer plans should be adopted by reference by the Bixby Comprehensive Plan 2001-2020. The electrical distribution and power supply system goals, objectives and policies should be adopted as amendments to the Plan.

PUBLIC FACILITIES

Public Facility and Utility Goals:

It is intended that efficient, adequate public facilities, services and utilities be maintained and provided for existing and future area residents in a reliable, economical, environmental sound manner.

Public Facility and Utility Objectives:

1. Existing public facilities, services and utilities will be maintained and improved to meet the needs of area citizens.
2. Resources for future public facilities, services and utilities will be programmed and in advance based on existing and future needs and that service, distribution, collection and treatment systems be carefully coordinated.

Public Facility Policies:

1. Planning and development coordination between Bixby municipal departments and operations and area utilities and other public agencies and governmental jurisdictions will be maintained and improved.
2. Planning and budgeting for public facilities, services and utilities should be an ongoing process and accomplished through the development of short

range (five to seven year) capital improvement programs. The needs and proposals for municipal facilities, services and utilities or municipal department operations should be studied in detail according to function and with regard to overall community needs.

EDUCATION FACILITIES

Education Facility Goals:

1. It is intended that a balanced program and physical plan be provided to meet the educational needs of Bixby Planning Area residents through the Bixby Independent School District and other appropriate educational systems.
2. It is intended that the Bixby Comprehensive Plan 2001-2020 and the goals, objectives and policies of the Bixby Independent School District be mutually supportive.

Education Facility Objectives:

1. The City of Bixby and the Bixby Independent School District will coordinate in the planning and location of educational facilities.
2. Elementary schools will be located within neighborhoods when feasible per the direction of the Bixby Independent School District.
3. Education facilities will be located for protection from encroachment by incompatible uses and for proper traffic access and service to the education facility and adjoining land uses.

Education Facility Policies:

1. General locations for educational facilities are set forth on the Bixby Comprehensive Plan 2001-2020 map and the Roadways and Public Facilities Plan map. New school sites depicted on these maps are not site specific and are general recommendations based on the Urban Development Design Guidelines goals, objectives and policies and other Plan elements.
2. Existing educational facilities should be preserved, maintained and, as necessary, improved to an adequate level. Some replacement may be determined as more economical and/or appropriate than facility maintenance and renovation.

3. New educational facility sites may be secured or reserved during the development process of new residential areas. Subdivision plats will identify these sites according to the Bixby Subdivision Regulations.
4. Any modifications or revisions in educational facility locations within the Bixby Planning area which are adopted by the Bixby Independent School District and are consistent with the Plan elements should be recognized in the Plan.

LIBRARY FACILITIES

Library Facility Goals:

It is intended that the services of the Tulsa City-County Library System be continued and library services be maintained at the optimum efficient level in Bixby.

Library Facility Objectives:

1. Community and branch libraries will be provided and located close to patrons, with convenient access to arterial streets.
2. Adequate space will be provide for library facility structures, parking, open space and library materials.

Library Facility Policies:

1. The location of any new community library should be in the Downtown Area and in close proximity to the Bixby Municipal Building, possibly in conjunction with the development of a civic center complex. Any library facility should have convenient access from public schools and other patrons.
2. If it is determined that another community library is needed in Bixby, such a facility should be located in or adjacent to a Type One or Two Activity Center, probably north of the Arkansas River. Long term considerations may require a facility in the west portion of the planning area as development increases.
3. Bixby supports the Tulsa City-County Library System and any long range plans for enlarged and improved facilities and services in Bixby.

SOCIAL SERVICES-HEALTH

Social Service-Health Goals:

1. It is intended that the highest possible of personal health for all Bixby residents be secured, to provide every citizen the information and means necessary to maintain one's good health and to participate in a continuing program of health.
2. It is intended that the physical environment should be conducive to good health and that appropriate and necessary measures be taken to maintain, preserve and improve the area's environmental quality.
3. The general goal of social concern is to encourage the development of a sense of community purposes in matters of general community interest among Bixby residents by providing: (1) opportunity for full participation in governmental affairs; (2) adequate and equal public facilities and services; (3) equal opportunities for housing, education, employment and justice; and (4) adequate welfare and social services.

Social Service-Health Objectives:

1. Adequate facilities will be provided and maintained to house health and social service programs in the Bixby Planning Area.
2. The services of the Tulsa City-County Health Department and private health care facilities should be used to the optimum level.

Social Service-Health Policies:

1. The maintenance and expansion of the Bixby Health Center is supported according to need and demand to provide public health needs of the community.
2. The various municipal, community and cultural center needs of will continue to be explored as needed to determine specific facility needs and the potential for a multiple purpose facility. If a community wide multiple-purpose municipal center is determined as necessary for Bixby, such a facility should consider location in or near the Bixby Municipal Building and the Downtown Area.
3. The provision of various community and cultural services by other private or

quasi-public organizations and facilities is endorsed by Bixby.

MUNICIPAL BUILDINGS

Municipal Buildings Goals:

The Bixby Municipal Building is intended to be maintained, improved and expanded at a quality level as a major public facility site and community focal point. Other municipal buildings and facilities will be maintained at adequate and safe standards, and in a manner in harmony with adjoining uses.

Municipal Buildings Objectives:

Municipal administrative services will be provided from existing facilities where appropriate and, if new sites or facilities are determined to be necessary, will be located at or near the existing Bixby Municipal Building. Other needed services and operations will be continued at an optimum level.

Municipal Buildings Policies:

1. The Municipal Building will be maintained and, as necessary, expanded at the existing site. Any additions or expansions will conform to the architectural theme and materials appearance and texture of the original structure, as well as linking new construction with the architectural history and character of the Downtown Area. Facility and site improvements should tie into the Special District 1 "Downtown Area" Plan's overall plan and development concept.
2. The development of any future Civic Center Complex will be in full consideration of all community needs and the purpose of establishing and/or enhancing the Downtown Area's development standards and image.
3. Expansion of municipal service and maintenance facilities will be located near similar existing facilities when adequate land is available and expansion at the existing site is most appropriate.

PUBLIC SAFETY

Public Safety Goals:

1. It is intended that Bixby be made as safe as possible by providing: effective, highly trained and motivated police, emergency and fire prevention-fighting

personnel and facilities; a responsive and just court and prison system; meaningful safety and crime prevention educational programs; improved traffic and personal safety; and an adequate civil defense.

2. The Bixby municipal government is intended to be the primary source of public safety services described above.

Public Safety Objectives:

1. Bixby police are intended to provide efficient and sound police protection to Bixby residents, and to maintain and strengthen the coordination of the Bixby police operation and activities within the unincorporated areas of Bixby Planning Area, and to maintain those services at an adequate level.
2. Bixby fire prevention-fighting is intended to provide efficient and sound fire prevention and protection to Bixby area and fire service area residents, and to maintain and strengthen the coordination and operations of the full time and volunteer fire protection programs in the area, and to maintain those services at an adequate level.
3. Bixby emergency response is intended to provide efficient and sound emergency response services to Bixby area residents, and to maintain those services at an adequate level, and to further coordinate such activities with other area governmental units.
4. Bixby code enforcement is intended to provide assurance of the sound and proper construction of Bixby structures for the public's health and safety.

Public Safety Policies:

1. New police, fire and emergency response facilities will be located to maximize coverage of Bixby and the Planning Area. New fire stations should be located according to the following standards:
 - a. Stations should be sufficient in number and location so that no point in a high value district will be more than one mile travel distance from an engine company, and one and one-quarter mile travel distance from a ladder company for average high value districts. Locations should provide for concentration of companies to multiple-alarm fire in high value districts.
 - b. The average residential district's response distance should be two

- miles from an engine company and three miles from a ladder company.
 - c. Stations should be located near intersections, where possible, to allow quick response in four directions. Traffic signal override controls should be provided at the station location adjacent signalized intersections.
 - d. Stations are appropriate to locate in or adjacent to Activity Centers.
2. Proper storage facilities and compounds will be provided for public vehicles and equipment.
 3. Adequate facilities and personnel will be provide to implement efficient public safety programs. Coordination of code inspection and planning implementation efforts will be maintained and enhanced to ensure compliance with zoning and subdivision regulations.
 4. Particular consideration will be given to coordinating public safety services between Jenks, Glenpool, Tulsa, Leonard and Tulsa County.
 5. Detailed location studies which include response times, district valuations, existing and future development and population served should be conducted prior to actual site selections for new facilities.

FLOOD-STORM WATER FACILITIES

Flood-Storm Water Facilities Goals:

It is intended that proper flood control and storm water drainage facilities and measures be provide to safeguard the citizenry from flooding, erosion, siltation, sedimentation and standing water and to preserve water quality.

Flood-Storm Water Facilities Objectives:

1. Areas within Bixby that currently experience periodic flooding and storm water drainage problems will have adequate facilities constructed to alleviate flooding problems.
2. An overall plan for flood control and storm water drainage should be prepared for each of the Bixby Planning Area watersheds and for the total Planning Area.

3. The Bixby Planning Area will be safeguarded from flooding from the Arkansas River, Bixby Creek, Posey Creek, Duck-Snake Creek, Fry Ditch 1, Fry Ditch 2 and Haikey Creek and their tributaries..

Flood-Storm Water Facilities Policies:

1. Bixby shall continue to regulate and control development within incorporated areas of the Planning Area subject to periodic flooding and shall use existing regulation measures in flood-prone areas. Tulsa County shall continue to regulate and control development within unincorporated areas of the Planning Area subject to periodic flooding and shall use existing regulation measures in flood-prone areas.
2. New development will not be permitted in areas subject to the 1% or 100-year frequency flood unless all regulatory flood prevention measures are complied with and the public's health, safety and general welfare are not impaired. Reclamation of the 100-year frequency flood plain shall be permitted only if it can be demonstrated that there will be no rise in the base flood elevation. The burden of proof is that of the developer.
3. Bixby will continue participation in U.S. Army Corps of Engineers flood studies for the Bixby Planning Area.
4. Bixby and other area governmental jurisdictions will work together cooperatively on flood and storm water issues of common concern or in which each has storm water impact. The City of Bixby, the City of Tulsa and Tulsa County will continue to work in a cooperative manner to study and resolve common flood and storm water issues. In particular, the City of Bixby, the City of Tulsa, the City of Broken Arrow and Tulsa County will work in a cooperative manner to study and resolve flood and storm water issues related to Haikey Creek.
5. Municipal public utilities will not be provided in advance of new development in areas in the 100-year flood plain unless it is determined to be in the best interest of the public's health, safety and general welfare.
6. When any land which is being developed, construction undertaken or public improvement installed upstream or downstream of a previously developed area, it shall be required of the developer that:
 - a. Measures be taken to avoid any increase in velocity and/or volume per time period in the discharge from the developing land to the

adjoining land; or

- b. Proof must be provided by the developer or subdivider that previously taken measures or improvements accomplish the avoidance of any increase in velocity and/or volume per time period in the discharge from the developing land to the adjoining land.

Proof of compliance must be provided prior to development.

7. As an alternative to the above, if onsite detention or other methods are not practical, the developer shall be required to demonstrate that the receiving stream can accommodate the flows from the entire watershed if it develops to the intensity shown in adopted public plans and that no added flooding impacts will occur due to the development. Proof of compliance must be provided prior to development.
8. The natural 100-year flood plain of area watersheds should be retained, where most practical, feasible and economically sound, as natural open space to control erosive velocities, prevent excessive downstream discharge and preserve the natural effects and amenities of the stream.
9. Land removed from 100-year flood plain by public improvements or public approved improvements may be developed in conformance with the Urban Development Design Guidelines goals, objectives and policies and other Plan elements. Land that is removed from the 100-year flood plain is to be identified appropriately in flood plain mapping of local and federal agencies.
10. All flood and storm water control facilities plans, specifications and construction techniques and materials shall comply with the regulations and standards set forth by the Bixby Subdivision Regulations and the Engineering Design Standards for the City of Bixby. Additional specific design details for standard storm sewer inlets and drainage channels and pipes should be included in Engineering Design Standards for the City of Bixby. It is intended that the facilities provided by developers provide the flood and storm water protection supported by their plans, specifications and construction techniques. If the provision and construction of facilities do not provide the appropriate protection, then those improvements or measure are intended to be provided to correct those measures.

SOLID WASTE FACILITIES

Solid Waste Facility Goals:

It is intended that Bixby Planning Area residents be provided with safe, efficient, environmentally sound solid waste disposal service.

Solid Waste Facility Objectives:

The solid waste disposal program available to Bixby residents will be economical, efficient and environmentally and aesthetically sound, and any adverse impacts of solid waste disposal will be minimized and satisfactorily mitigated for existing and future residents of the Bixby Planning Area.

Solid Waste Facility Policies:

1. Bixby shall continue to provide for solid waste pick-up and disposal during the Plan period, or until such time that it should become economically or environmentally unsound and impractical and an acceptable alternative is provided.
2. Solid waste pick-up and disposal operations in the Bixby Planning Area shall meet all local, state and federal health, safety and environmental protection requirements.
3. Transport of hazardous waste or chemicals shall be made known to the City of Bixby and its public safety departments, including the intended route and hours of transportation. The transporter of any such material shall make known its intent and work with the City of Bixby to insure that the safest route possible is used, prior to the materials movement through the Bixby Planning Area.
4. No hazardous waste or solid waste disposal or sanitary landfill operations will be permitted in the Lake Bixhoma or Rocky Creek watersheds.
5. Sanitary landfills should be provided in accordance with the following standards or more stringent standards required by local, state or federal agencies:
 - a. Landfill sites should provide one to two acre-feet disposal each year for each 1,000 population served plus added disposal capacity for

industrial uses (which may significantly impact site operation and permits).

- b. Landfill sites should be located near a major highway within ten to fifteen miles of the City to lessen haul time. However, visibility of such sites from major transportation routes should be strictly avoided. Considerations of prevailing winds and potential odor must be made in site location and orientation.
- c. Refuse should be placed not less than 5 feet above the high groundwater level and provisions should be made to insure against groundwater contamination and to insure proper drainage of surface water to prevent pollution. A fairly impermeable cover material should be used and a cover crop planted. The best soils suitable for landfill have a loamy or silty texture, have moderate to slow permeability, are deep to a seasonal water table and bedrock, and are not subject to flooding.
- d. A six inch cover of earth for each day's dumping should be provided as well as a two foot final cover. The A zone or topsoil in most soils should be stockpiled for use as the surface layer of the final cover.

WATER

Water Goals:

1. It is intended that a high quality of water adequate to meet the existing and future needs of the Planning Area residents and businesses be provided in a sound, reliable, efficient and economical manner.
2. It is intended that new and replacement water facilities and services be programmed in advance based on existing and future needs and that these distribution and treatment systems be carefully coordinated with the provision of other municipal facilities, services and utilities.

Water Objectives:

1. A high quality, reliable supply of water will be provided in Bixby and the Planning Area.
2. Water supply sources will be protected from degradation or pollution from point and non-point source pollutants.

3. The existing water system will be maintained and upgraded as necessary in Bixby and the Planning Area.
4. Expansion and extensions to the water system will be provided to meet future needs.

Water Policies:

1. Adequate municipal water service will be provided by Bixby within all of its municipal limits.
2. Bixby will continue to coordinate its water system planning efforts with proposals of the Tulsa water utility authority to insure the provision of reliable and emergency water supply sources.
3. Water supply security should be assured by connection with other systems for raw water as an alternative supply source.
4. The use of Tulsa supplied water for Planning Areas north of the Arkansas River should continue to be explored and developed as appropriate. Connection to the Tulsa water system is recommended at 151st Street South and Yale Avenue. An additional water line connection-loop system across the Arkansas River is recommended near Mingo Road for late in the Plan period or earlier if needed.
5. New and replacement water lines, hydrants and facilities will be designed and constructed to provide adequate supply and fire protection in compliance with the Bixby Subdivision Regulations and the Engineering Design Standards for the City of Bixby.
6. The standards for new distribution lines are set forth in the Bixby Subdivision Regulations and Engineering Design Standards for the City of Bixby. Generally, twelve inch lines should be provided along section-line roads and primary and secondary arterial streets, and eight or ten inch lines should be provided at half-mile intervals. All other new lines shall not be less than six inches in diameter.
7. Extension of municipal service should be accomplished within the Bixby Planning Area in a manner so as to discourage piecemeal development and private sewage and septic systems. Municipal water service should be provided to those areas where service can be justified from health and

economic considerations. The following general standards should be used in consideration of municipal water service extension:

**Table 4
MUNICIPAL WATER SERVICE EXTENSION**

Population Density	Equivalent Lot Size	Service Extension
Over 1600/sq. mile	Less than 1 acre	Justified
800 to 1600/sq. mile	1 to 2 acres	Normally justified
400 to 800/sq. mile	2 to 4 acres	Not normally justified
Less than 400/sq. mile	Over 4 acres	Rarely justified

Source: Modified from Environmental Health Planning Guide, Public Health Service, U.S.D.H.E.W.; assumes 2.5 per persons per housing unit.

8. Existing areas within Bixby having inadequate water facilities will be identified and included in future capital improvement programs.
9. Continued study should be made of the economic viability and reliability of operating the Bixby water treatment plant versus the purchase of high quality water from other sources.
10. Local, state and federal assistance will be secured, when feasible, to plan, design and construct new and replacement water systems.
11. The latest City approved water system plan prepared by consulting engineers is intended to be adopted as an element of the Bixby Comprehensive Plan 2001-2020.
12. The City of Bixby should continue to protect the Bixhoma Lake watershed and any other water supply watersheds. The protection of the Bixhoma Lake watershed is encouraged through the policies set forth in the Urban Development Design Guidelines Special District 5.

SANITARY SEWER

Sanitary Sewer Goals:

1. It is intended that a high quality sanitary sewerage system adequate to meet the existing and future needs of the Bixby Planning Area residents and businesses be provided in a reliable, efficient, economical and environmentally sound manner.
2. It is intended that new and replacement sanitary sewer facilities and services be programmed in advance based on existing and future needs and that this collection, treatment and disposal system be carefully coordinated with the provision of other municipal facilities, services and utilities.

Sanitary Sewer Objectives:

1. Sanitary sewer service will be installed in all areas of Bixby as needed to provide municipal sewage collection, treatment and disposal for all urban areas and to minimize private sewerage service and septic systems where public sewerage service is available or where soil conditions or population density are unsuitable.
2. Bixby will maintain a safe, healthy, economical and environmentally sound system of sewage collection, treatment and disposal.

Sanitary Sewer Policies:

1. All urban development in Bixby will be provided with adequate sanitary sewer service. Existing areas with inadequate sanitary sewer facilities will be identified and include in future capital improvement programs.
2. Bixby will continue to coordinate its sanitary planning efforts with other municipalities and municipal service efforts. In particular, coordination of such efforts will be continued with Tulsa and its sewerage service authority.
3. The sanitary sewer collection system will be designed and constructed, when feasible, as a gravity flow system to assure economy of construction, operation and maintenance.
4. The Bixby sanitary sewer system will focus its service extension primarily on the Primary Study Area during the Plan period.

5. Municipal sanitary sewer service should be provided to those areas where service can be justified by health and economic considerations. The following general standards should be used in consideration of municipal sewerage service extension:

Table 5
MUNICIPAL WATER SERVICE EXTENSION

Population Density	Equivalent Lot Size	Service Extension
Over 1600/sq. mile	Less than 1 acre	Justified
800 to 1600/sq. mile	1 to 2 acres	Normally justified
400 to 800/sq. mile	2 to 4 acres	Not normally justified
Less than 400/sq. mile	Over 4 acres	Rarely justified

Source: Modified from Environmental Health Planning Guide, Public Health Service, U.S.D.H.E.W.; assumes 2.5 per persons per housing unit.

COMMUNITY "VISIONING" AND GOAL STATEMENTS

The community of Bixby completed an extensive strategic planning effort which produced a number of important goals for the community. The results of that study were compiled in "Bixby Economic Development - Strategic Planning". Although that study focused on economic development, it also set forth community desires for a full range of issues. These community goals were related to the physical development goals in the existing comprehensive plan, and modification and refinement was made to the Plan update as appropriate. Listed below are "Vision Statements for Community of Bixby" derived from that study.

GENERAL

As a progressive, planned community, it is Bixby's vision to provide:

1. A diversified business and industrial base.
2. Superior infrastructure (i.e. strictly utilities).
3. Continued excellence in educational opportunities.
4. Responsible informed and caring leadership.
5. Ready transportation access to the region.
6. Various recreation and entertainment choices.
7. Convenient and abundant shopping and service options.

All while maintaining our safe and friendly small town atmosphere.

The study also determined goals for important segments of the community which are listed as follows:

QUALITY OF LIFE

Quality of Life Goal:

Educational opportunities promote positive citizenship and the ability for the Bixby community to compete in a global environment. Bixby has a safe, stable community guaranteeing immediate access to emergency and medical services. A community-wide beautification plan is achieved through adequate zoning

ordinances providing pleasing parks, roadways, business district, housing additions, etc.

ECONOMIC DEVELOPMENT

Economic Development Goals:

Bixby's comprehensive marketing/imaging plan includes:

1. Clean streets landscaped with trees, flowers.
2. Convenient access roads.
3. High-tech office park (2-3 stories).
4. *Pro-business climate.*
5. Inviting parks - "Happy Valley".
6. Economic Development Department (Tri-cities).
7. Large corporate campus.
8. Well manicured existing industrial park.
9. Financing packages/industrial bonds
10. High tech/food processing
11. Commercial space and sites include a farmer's niche and warehousing.
12. Bixby's beautified restored downtown business district extends to Memorial and is in an enterprise zone.

LEADERSHIP

Leadership Goals:

Long range plans will be constructed in such a manner as to promote both economic and community growth. They will promote unity between north and south citizens, neighborhood associations, volunteerism and greater involvement in planning and development. Leadership will promote the economic development of all areas within the city, more than just a few.

INFRASTRUCTURE

Infrastructure Goals:

Bixby's effective street and highway system gets people through, around, to and from Bixby. Bixby's drainage and storm water management system keeps new development out of flood-risk areas and reduces flood-risk in present flood prone areas. Bixby's sewer and water system connects to all existing structures and all areas of potential development in the city. Quality business parks are fully developed.

MEMORIAL DRIVE AND 171ST STREET SOUTH CORRIDOR DESIGN ELEMENTS

GOALS

This transportation corridor now serves and will continue to serve several important functions for the Bixby Planning Area. Goals for these roadways and the adjoining development include the following:

1. S. Memorial Drive and 171st Street South are intended to be improved and maintained as high traffic carrying capacity roadways.
2. These roads are intended to bring traffic into and through the Bixby Planning Area. These roads are to provide safe, efficient access to adjacent and adjoining land uses. These roads are intended to provide access to adjoining neighborhoods and the "Old Town Area (Special District 1).
3. This transportation corridor is intended to have an appealing, attractive appearance. Public and private development and redevelopment is intended to provide a visually appealing image, visual unity, and an appearance of overall physical order.
4. It is intended that vehicular, bicycle, and pedestrian traffic be safely accommodated within this area.
5. It is intended that those land uses seeking and requiring frontage on these streets should have such access preserved and enhanced where feasible to facilitate business activities and traffic movement.
6. It is intended that a buffer be provided between the roadways and the adjacent residential neighborhoods.
7. It is intended that design standards be established to provide development direction that will result in a visually appealing image, visual unity, and an appearance of overall physical order. These standards are to be flexible to accommodate public sector and individual property owner's requirements for agricultural, recreational, residential, office, commercial, science-technology, and industrial development. The standards are to provide a balance of direction and flexibility resulting in a unified environment with individual expression.

COMMON DESIGN ELEMENTS

The common elements are the components of the physical features which are most visible and have the greatest impact on the character of this transportation corridor. These elements are both natural and man-made. These elements are highly visible and visually significant, and they are the focus of Design Standards developed for this corridor. The design elements are: circulation zone, edges, entrances, and open space zone. The "Corridor Design Elements" plan map depicts the design elements and area for which the Design Standards are to be applied.

Circulation Zone

The *circulation zone* is that portion of the roadways for which the primary objective is to move traffic safely into and through the Bixby Planning Area. It is the circulation and visual spine and the primary point of entry into the corridor and urban portions of Bixby. The circulation zone in the study area extends through uses of varying levels of land use intensity. This area extends roughly 150' back from the center line of S. Memorial Drive and 171st Street South of the study area. It is that zone in which people and vehicles move into, move out of, and merge with corridor traffic. Protection of line of sight and provision of an attractive visual image is most important in this area.

Edges

The *edges* are those portions of the roadways which are most readily seen by motorists and pedestrians. A consistent image is important to be established for edges along the length of the corridor. The transition from the "green theme" agricultural setting of the community into the developing urbanizing portions of the community should build on park-like and agrarian elements of the man-made and natural environment. This transition area is a dynamic zone which will continue to change with growth in the region. However, the quality, image, and visual context for certain physical elements of all development should be established. In this corridor, there are three types of edges: *residential edges*, *business-special edges* and *rural edges*. Residential edges are intended to back onto roadways or to have a significant buffer or setback from roadways. The business-special edges include those in which non-residential activities exist or are planned, including special district, quasi-public, commercial, office, scientific-technology, and industrial uses. These edges may front on the roadways, but are intended to provide attractive landscape, signs, pedestrian/bicycle paths, and other physical

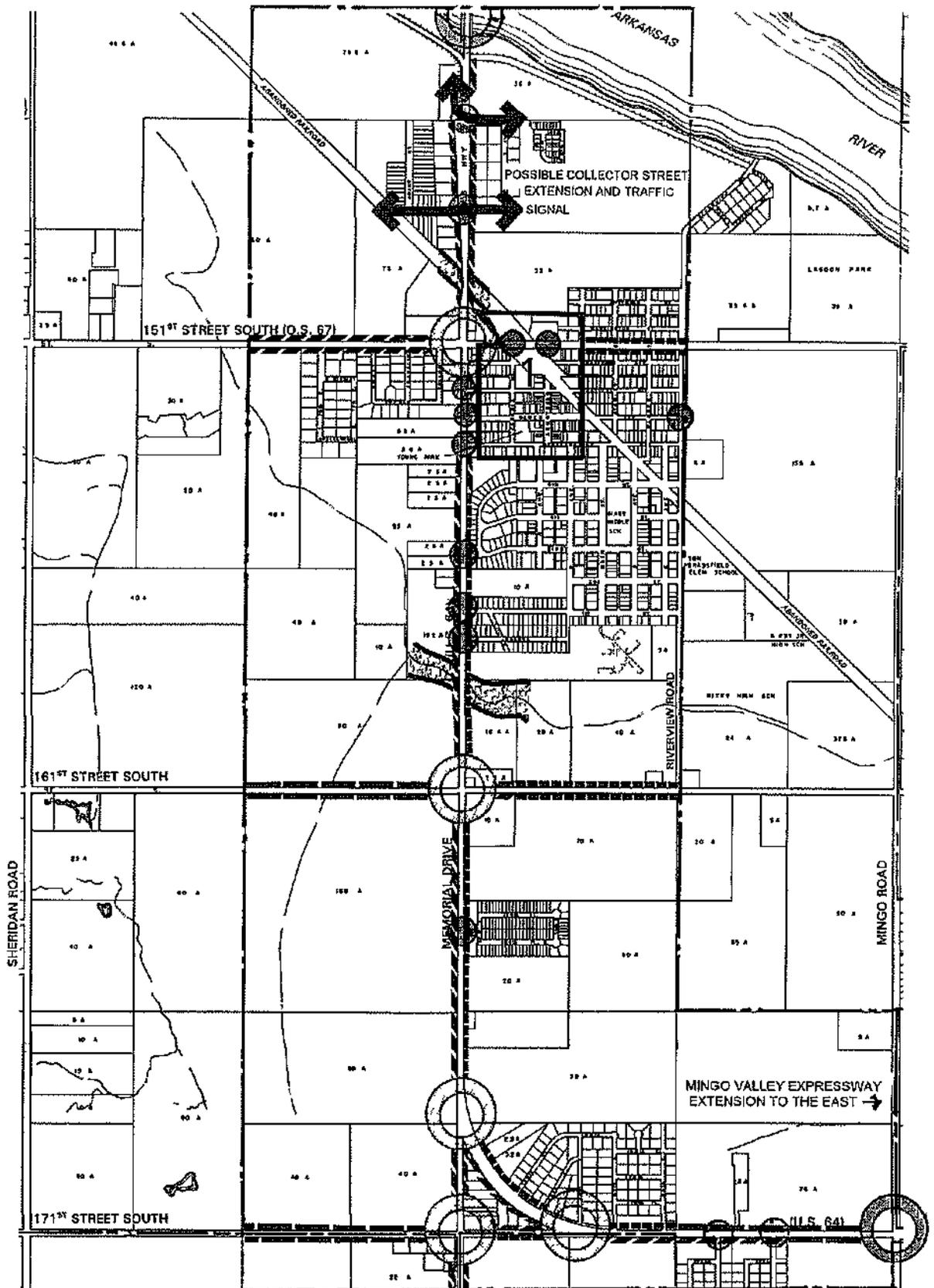
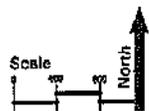


EXHIBIT 7

CORRIDOR STUDY

● CORRIDOR DESIGN ELEMENTS ●

MEMORIAL DRIVE - ARKANSAS RIVER TO 171ST STREET SOUTH
 AND 171ST STREET SOUTH, MEMORIAL DRIVE TO MINGO ROAD
 BIXBY COMPREHENSIVE PLAN



LEGEND:

- | | | | | | |
|--|-------------------|--|-----------------------|--|--------------------|
| | CORRIDOR ENTRANCE | | RESIDENTIAL EDGE | | SPECIAL DISTRICT 1 |
| | PROJECT ENTRANCE | | BUSINESS SPECIAL EDGE | | OPEN SPACE ZONE |
| | IMPACT ZONE | | RURAL EDGE | | |

improvements. The *rural edges* are the areas which are expected to develop in an agrarian manner due to the significant amount of flood plain, prime agricultural soils, difficulty in removal from the flooding and conversion to urban use, and distance from urban development.

Entrances

The *entrances* into the community are those places where a specific visual statement of entry can be established along the corridor. There are two levels of entrances for the corridor. There are the major *corridor entrances* which are also major entrances into the community. There are also *project entrances* into neighborhoods, special districts, or project areas. The major roadway intersections are major visual *impact zones* which function as corridor entrances and provide an opportunity for establishing a positive image. Preservation of line-of-sight through the provision of low profile, attractive improvements and landscaping is important at these locations.

Open Space Zone

The fifth design element is the *open space zone*. This natural system consists of flood plains and storm water drainageways. A very significant portion of the corridor is located in the flood plain. This flood plain includes Bixby Creek and meandering drainage ways within the flood plain. Large portions of this system have been built upon in the older areas of the city. Other large portions of the flood plain are used for agriculture and agribusiness activities. The open space zone includes that land area which is devoted to or planned to be devoted to storm water channel improvements, pedestrian and bicycle trails, and reserve areas devoted to preserving open space and providing flood protection.

DESIGN STANDARDS

The following standards are recommended for this roadway corridor.

Landscape Zone Standards

A landscape zone is recommended for areas along the roadway right-of-way. It would be located within the public right-of-way and would contain typical lawn areas and tree plantings. This area would vary in size depending on the available right-of-way and the existing development, but is recommended to be 10' wide on both sides of the roadway. Pedestrian and bicycle trails should be provided in or adjacent the landscape zone where there is sufficient right-of-way to serve as connectors to the Bixby Trail System. Spacing between trees should be no less

than 40' and no greater than 80'. Tree specimens should be of a hearty variety requiring minimal or no maintenance or care.

It is suggested that the landscape zone be provided in the undeveloped and agricultural areas along the roadways. Landscape zones would be found in the non-urbanized or more rural portions of the roadways and along the open space zone. The landscape features would be provided as part of public roadway improvement projects. A landscape maintenance and replacement clause should be included with project improvement contracts. It is suggested that these standards be applied to local, state, and federal projects in the Bixby Planning Area.

Landscape Easements Standards

Landscape easements are suggested for newly developing neighborhood areas *within the corridor*. A 25' wide landscape easement is recommended at the rear of residential development abutting the roadways. Trees are to be provided within this easement. Multiple rows of trees are suggested and also recommended within the easements. Spacing between trees should be no less than 25' and no greater than 50'. Tree specimens should be of a hearty variety requiring minimal or no maintenance or care.

It is suggested that landscape easements be provided in newly developing and urbanizing portions of the corridor which are changing from undeveloped and agricultural areas along the roadways. The landscape features would be provided as part of private development projects. Landscape maintenance and replacement would be the responsibility of the developer until trees are successfully established over a specified period of time. It is suggested that the continued landscape maintenance and maintenance would be the responsibility of the individual property owner.

It is suggested that a 20' landscape easement be provided along both sides of undeveloped and newly developing flood plain areas. These landscape easements within the flood plain would be provided in conjunction with public and/or private channel improvements within this area.

Entrances Standards

Entry Treatment locations into Bixby have been identified on the Bixby Comprehensive Plan and its Park-Recreation-Open Space element. *Corridor entrances* should be compatible with design of the entry treatment community elements is recommended. The corridor entrances would help identify the City of

Bixby and strengthen the image and physical image of the community. The corridor entrances are recommended for the Memorial Drive south of the Arkansas River bridge and at the intersection of Mingo Road and 171st Street South. In the initial phases of the planning period, wood and metal pole signs of common design theme and materials will be acceptable. It is intended that upgraded entry elements be provided in suitable locations. Suitable land will be provided to insure and maintain good line-of-sight for drivers and pedestrians. These elements are to further strengthen the community image. It is suggested that such entry features should be low-profile monuments of stone and/or masonry with community identification signs. The signs should also be of a common design, materials, and theme. These entrances should be accentuated with large canopy and/or ornamental trees, seasonal colors, shrubs, groundcover, and lawns. The corridor entrance should be illuminated to provide good visibility and serve as a focal point. *Project Entrances* are identification markers to neighborhoods, special districts, and developments. These project entrances are typically provided at intersections of entry roads with the Memorial Drive and 171st Street South. These project entrances may include stone monuments, gates, walls, signs, canopy and ornamental trees, and lighting. The primary purpose of these project entrances is to identify place, establish image, and enhance the sense of entry. Project entrances are typically provided by project developers. Project entrances would also be appropriate to be provided by public sector projects where the project improvement significantly alters or modifies access into a neighborhood, special district, or development project.

Tree Preservation Standards

There are areas within the corridor which contain open meadows and groves of mature oak, pecan or fruit trees. In many instances, the distribution of and quality of these trees is a strong visible asset. Tree preservation is particularly appropriate for the open space zone and rural edges of the corridor. Tree preservation policies are suggested for the areas which contain this plant material. Those suggested policies are as follows:

The visual appearance and existing tree cover of each development parcel is intended to be preserved where practical and reasonable. Tree preservation is intended for both private and public projects and sites.

5. Individual developments parcels are intended to preserve the maximum number of trees. Three replacement trees are to be provided in those instances in which major, specimen trees are to be removed due to project requirements. Replacement trees are to conform to the list of acceptable urban trees listed with the City of Bixby Landscape Ordinance.

6. The Bixby Landscape Ordinance and its detailed design standards are to be applied for all parcels along the roadways.
7. The quality of the existing plant material is to be reinforced and maintained through selective clearing and removal of invader species and underbrush that would inhibit the growth of native specimens.
8. All development plans shall indicate those trees that are to remain and those that are to be removed so preservation and tree planting requirements can be evaluated.
9. If remaining trees require special treatment, such special treatment shall be noted on landscape plans.

Tree Massing Standards

The character of tree massing in the flood plain and open space zone is intended to be preserved where feasible. Removal of trees is suggested only for the construction of storm water improvements. In those areas in which trees are to be removed, replacement trees are intended to be provided. Replacement trees are to be provided and reflect natural massing and native plant specimens. Replacement planting shall consist of large canopy trees naturally grouped in lawn areas. The use of shrubs is discouraged for open space one areas.

Plant Materials Standards

The recommended tree planting list of the City of Bixby Landscape Ordinance is endorsed for this area. Those trees native specimens which are commonly found within or adjacent this corridor are suggested for corridor tree planting.

Landscape Maintenance Standards

The maintenance of the tree planting and street scape areas of the corridor will vary per the parcel ownership on which the features are located. Maintenance policies include:

1. Maintenance of tree planting, other landscape elements and other features for publicly funded projects is the responsibility of the City of Bixby or the appropriate governmental entity.
2. The developers of property are responsible for the designing, installation,

planting, and maintenance of landscape elements along the roadways if said development precedes public improvement of the roadway along this area.

3. The developers and/or owners of parcels along the roadways are responsible for the maintenance all of landscape and tree plantings and other streetscape elements provided on their parcel. The developers are responsible for designing, planting, grading, and installation of automatic sprinkler system for all the landscape elements.

Paving Standards

Paving elements for sidewalks and entry drives and driveways may be decorative as well as functional. Changes in texture and type of paving material can add richness and variety to an area, signal a change in land use, direct vehicular and pedestrian movement, and announce special areas. Paving policies are suggested as follows:

1. Road and parking areas shall be textured concrete or its equivalent.
2. Entrances to project or parcel sites mix vehicular and pedestrian use. These entrances may be concrete for functional reasons and may be highlighted with bricks, unit pavers, stone, or aggregate for visual emphasis, variety, and richness. Accent material should be compatible in color and character with an overall materials plan for the corridor.
3. Pedestrian walkways shall be broom-finish concrete. Bicycle trails shall be broom-finish concrete, asphalt, or the equivalent. Pathways into and within development parcels, neighborhoods, and special districts can be varied in material. Pedestrian walkways or trails can be broom-finish concrete, asphalt, exposed aggregate, unit pavers, brick or stone. It is intended that the materials be compatible with an overall materials plan for the corridor.
4. Pathways adjoining drainage improvement facilities shall be concrete, asphalt, or other approved surface material suitable for drainage system maintenance, pedestrian and bicycle paths, and other multiple use purposes.

Bridges Standards

Vehicular bridge crossings are to provide for pedestrian and bicycle crossing separated from vehicular traffic. Grade separated crossing of the major roadways is to be provided under the new bridges where feasible. Such grade-separated crossing will serve as important connecting elements of the Bixby Trail System. It

is intended that the bridge materials be consistent with an overall materials plan for the corridor.

Lighting Standards

A highly visible site element of the corridor is lighting features. Lighting facilities are intended to provide visual order, safety, and identity. A common, unifying light features should be provided for the corridor. Light elements of specified height, visual design theme, and spacing are to be provided along the roadways, pathways, parking areas, select open space areas, and at entrances .

Design Review Standards

It is intended that roadway plans, development plans, and project plans are be reviewed by the City of Bixby in order to determine conformance with Comprehensive Plan and corridor design goals.

1. It is intended that the "Corridor Appearance District Guidelines" adopted by the City of Bixby be the standards to be applied to the "Memorial Drive and 171st Street South Corridor".
2. It is intended that the "Corridor Appearance District Guidelines" adopted by the City of Bixby be applied to the Corridor Appearance Districts defined in the Bixby City Code.

BASIS FOR THE PLAN

BASIS FOR THE PLAN

This section of the Bixby Comprehensive Plan 2001-2020 document presents studies, analysis, and findings which, together with community goals, serve as the basis for the Plan. The jurisdictional framework set forth in the 1991 Plan is stated below. This second portion is followed by statement of the urban design framework guiding the Plan update. The third portion describes the physical features analysis conducted for the Plan update. The fourth portion of this section presents the demographic analysis prepared for this study. The last portion includes information from the Memorial Drive and 171st Street South corridor study.

JURISDICTIONAL AND PLANNING FRAMEWORK

Introduction

This portion of the Basis for the Plan the authority, theory, and context which guides this planning study. It presents the authority and jurisdiction by which Bixby conducts planning, the basic theory for planning efforts in Bixby and throughout our country, an overview of Bixby planning history, and a foundation for urban design in the community now and in the future.

Authority and Jurisdiction of the Comprehensive Plan

The authority of the Bixby Comprehensive Plan is expressed in Title 11 of the Oklahoma State Statutes. Under those statutes, the City of Bixby actively exercises planning, land division and zoning authority within municipal limits only. Under these statutes, the Bixby Planning Commission may investigate, study and recommend to the Bixby City Council the adoption, in whole or in part, of a Comprehensive Plan for development of the City of Bixby and its jurisdictional environs.

All matters relating to comprehensive, long-range planning the subdivision of land and zoning (the establishment of districts according to allowable land use) inside the Bixby City Limits are submitted to the Bixby Planning Commission for review, consideration and recommendation. The recommendations of the Planning Commission are then forwarded to the Bixby City Council for their review, consideration and final action. No planning, land division and zoning authority is exercised by Bixby beyond its municipal limits or in areas surrounded by its municipal limits.

The Tulsa County Board of Commissioners exercises planning, land division and zoning authority in Tulsa County for those areas outside of but surrounded by the municipal limits of Bixby. This authority is exercised through the Tulsa Metropolitan Area Planning Commission (TMAPC). However, any planning and zoning matter in an unincorporated area of the County surrounded by Bixby's municipal limits is forwarded on a referral basis to Bixby for review and comment. Such a referral takes place prior to TMAPC action. This referral policy helps insure coordination and consistency for plans, development and services between Bixby and Tulsa County.

Planning Process

The earliest planning for Bixby was done by private individuals who established the original town site. This pioneer settlement was followed with minimal development associated with the agricultural economy of the surrounding area and the development of the railroad. Formalized community planning efforts were initiated in the early 1970's in conjunction with growing development pressures. This resulted in the preparation and adoption of subdivision and zoning regulations in the mid- 1970's and the Comprehensive Plan in the summer of 1976. Additional development and planned highway improvements resulted in the preparation and adoption of an amendment to the Plan for the Memorial Drive Corridor (the area north of the Arkansas River on both sides of Memorial Drive) in the summer of 1980.

The City of Bixby continued its ongoing attention to development and planning with the addition of planning staff through a cooperative agreement with the Indian Nations Council of Governments. Revisions and updates to the City's development codes and design standards have been made by the Bixby Planning Commission and planning staff. Proposed highway improvements and new area development significantly impacting Bixby resulted in the update to the Plan in 1991. Continuing growth pressure resulted in an extended study process by the City of Bixby which has included review of study findings and recommendations by Bixby citizens, Plan Update study committees, municipal staff, Bixby Park Board, Bixby Planning Commission and Bixby City Council, and preparation of this 2001 update to the Bixby Comprehensive Plan.

Comprehensive Planning

Planning¹ can be defined as the deliberate, organized and continuous process of assimilating and preparing whatever information is necessary to advise elected officials on actions relevant to community (city, county or region) growth and change. The Comprehensive Plan² is an important product of this process because the Plan's purpose is to guide and coordinate the physical development of the community in accordance with present and future community goals and anticipated conditions.

The Comprehensive Plan sets forth the development goals, objectives and policies expressed by the community in written and graphic form. The goals expressed in the Plan are simply the long-term desires of community interest. A goal is something that is rarely, totally achieved, but is something toward which one can make significant progress. An example of an economic goal would be "the community wants a growing and diversified economy offering business, employment and investment opportunity for current and future residents". The objectives of the Plan are achievable, they are the means to measure the progress toward reaching a goal. Objectives are desired accomplishments which, when reached, will bring one closer to one's goal. An example of an economic objective would be "to provide current residents with opportunities for new jobs in the community by providing specific locations for public, office, commercial and industrial business and enterprises". The policies in the Plan are detailed, specific guidelines for actions that help meet objectives and thus move toward goal achievement. Again, an example land use policy meeting economic goals and objectives would be "to provide for office and commercial land at the intersections of arterial streets". Specific policies of the Comprehensive Plan might change once an objective is attained or given unforeseen changes in conditions. However, the long-term goal for the community would remain the same.

Plan Purpose

It is the community Comprehensive Plan that provides the strategic view of how the community is intended to appear twenty to twenty-five years in the future. It provides the general policy statements of how to attain this appearance.

¹ The term "planning" is used interchangeably with the terms master planning, urban planning and comprehensive planning.

² Often referred to as the Master Plan or General Plan or simply, the Plan.

To be an effective guide into the future, the Plan must be a clear and definitive statement of policy, it must be used by city officials and interested citizens, and it must be officially adopted by the legislative body of the community (the Bixby City Council). Two distinctive sectors of public policy are dealt with in the Comprehensive Plan:

1. General policies for guiding and coordinating the development and use of privately-owned land.
2. Policies for providing public facilities and services.

Private Development Policies

Policies for guiding land use and development are described in written and graphic form in the Plan. In plan documents throughout the country, these policies are generally categorized according to general and specific land use types. The land use types usually include agriculture, residential, commercial, industrial, institutional, recreation-open space and development restricted or sensitive. The protection of public interests is the overriding goal of the Plan and thus, the direction and coordination of private development is provided in such a manner that will not stifle individual initiative and minimal direction is employed.

The coordination of private development and public investment is attained through voluntary acceptance and use of the Plan by private individuals, through the administration of municipal development codes and through the adherence to the community goals in legislative initiatives and decisions. Some of the tools used to implement the Plan include the platting regulations which govern the subdivision of land, the zoning ordinances which provide standards for land use, the building codes which regulate material and structure characteristics of construction, the health codes which set minimum standards of sanitation and operation, and capital improvement programs which list, prioritize and schedule the financing and construction of major capital improvements by the local government.

Public Development Policies

The Comprehensive Plan also sets forth public development which includes public facilities, sites and services. The public policies deal with public areas including parks, recreation and municipal building sites and other public and quasi-public areas. Public facilities and services include transportation, education, health and social services, public safety, storm drainage, solid waste disposal, water and

sanitary sewerage. These public development policies are expressed in two ways. First, the location, extent and functional relationships are delineated as precisely as possible for those major facilities that are to serve and be financed and maintained by the whole community. Major facilities include highways, expressways, arterial streets, civic buildings, reservoirs, regional detention, and major community recreation facilities. Second, those public facilities which are located or designed to serve a limited group or area of the community are located generally through the use of symbols on the Plan map, as well as by area and location standards in the Plan text. These neighborhood facilities include parks and playgrounds, potential detention sites and elementary school sites.

Plan Characteristic

One very important characteristic that a community Comprehensive Plan should have in light of recent court decisions is consistency between the plan goals and policies and the tools which the community uses to implement the Plan. The most important tool a community has to implement the Plan is its zoning codes. These codes and other development regulations should as clearly as possible relate to the goals established by the Plan. This consistency also increases understanding and use of the Plan as a blueprint for important physical development decisions of the City.

Summary

The Comprehensive Plan is a clearly identifiable, integrated and definitive policy statement consisting of maps and written material that is officially adopted by the local legislative body following appropriate, essential citizen review. It is to be used by all of the community - public and private - in organizing and guiding development of the community.

URBAN DESIGN FRAMEWORK

Introduction

Alternative forms of urban development were described in the 1991 comprehensive plan study. The three forms which were considered included: (1) the Satellite Form, (2) the Compact Form, and (3) the Linear-Star Form. Based on that and other analysis, urban design features and standards were studied. Urban Development Design standards were then updated and applied to and adopted by Bixby in the 1991 Plan. This study reviewed these Urban Development Design Guidelines and extended the application of the guidelines to the full Planning Study Area (PSA). Finally, the recommended Urban Development Design Guidelines elements are described with a description of these elements in Bixby and the Planning Area.

Bixby's Urban Form

The urban form of Bixby is dominated by three major features: the Arkansas River, the 100 year flood plains and development sensitive soils, and the major roadway systems in the area. Also impacting urban form has been the application of the Urban Development Design Guidelines which were officially adopted in the 1991 Bixby Comprehensive Plan. It is the dominant physical features combined with continued use of the Urban Development Design Guidelines which yields the physical development plan to 2020.

The adopted Urban Development Design Guidelines and their elements are described as follows. The Urban Development Design Guidelines describe the building blocks of urban development. These guidelines help the community in its growth decisions and land use relationships and provide the flexibility in urban design to respond to specific site development requirements, changing economic or market conditions, and significant, rare modifications to physical feature elements. There are three key principles governing the urban development design concept's organization of land. These principles are the organization of land according to: (1) use, (2) intensity of use, and (3) the relationship between adjoining uses. The design elements or "building blocks" derived from these three principles are summarized below and are to continue to be used to describe and shape urban form in the Bixby area.

The "building blocks" include neighborhoods which are primarily residential in use and defined by specific boundaries. This is not to exclude recognition or

development of large business neighborhoods. These are in most instances to be addressed as Special Districts which are discussed in detail below. Activity centers are specific areas around the intersection of designated arterial streets in Bixby. These activity centers are to provide space for uses of neighborhood or multiple-neighborhood importance. Corridors are specific areas located along major expressways or major highways where region-serving, higher-intensity activities are deemed appropriate. Special districts are those areas set aside in accommodation of special use situations in Bixby. The expressways and arterial streets are the major transportation linkages between the other design elements and the element that most frequently defines the edges of the other design elements. The Urban Development Design Concept exhibit depicted in the 1991 Bixby Comprehensive Plan provides a concept illustration of these building blocks of urban development design. The remaining element of urban development design is intensity, which describes degree of use activity.

Neighborhoods

The Bixby area neighborhoods are those areas bounded by any of the following: the Arkansas River, O.S. Highway 67/151st Street South, U.S. Highway 64/Memorial Drive, arterial streets, and area rail lines. Neighborhoods are primarily residential in use and offer a variety of housing types, although the single family house is dominant. For those neighborhoods with higher density housing, such housing is located generally on the edges of the neighborhood, adjacent to activity centers and certain special districts. Other uses associated with neighborhoods include open space, parks and playgrounds, schools, churches, and collector and minor streets serving the neighborhood.

These living areas should be located in convenient proximity to work and leisure time areas close to arterial streets to insure easy access between living and other use areas. Neighborhood design should encourage ease of pedestrian and bicycle access to community facilities, enhance neighborhood definition, and discourage through traffic. Residential neighborhoods should be located in areas economic and attractive to development and where desirable residential densities with a range of choice can be insured. An example of an urban neighborhood is the area in north Bixby bounded by the Arkansas River flood plain, Memorial Drive, 131st Street South and Mingo Road.

Activity Centers

Activity Centers are in specific locations located around the intersections of

designated arterial streets. Depending on the type of arterial involved, differing amounts and types of uses should be permitted. The intersection of a primary and secondary arterial would accommodate a greater amount of medium and higher intensity development than an intersection of two secondary arterial streets.

From a traffic carrying standpoint, approximately 60 acres of medium and higher intensity development can be accommodated at specific intersections of two primary arterials. Approximately 40 acre can be accommodated at intersections of primary and secondary arterial. Approximately 20 acres of medium and higher intensity development can be accommodated of two secondary arterial. In some instances, it may be appropriate to designate an activity center at the intersection of an arterial and a collector street. However, the minimum distance between such an intersection and any other activity center intersection center point would be one mile. Approximately 10 acres of medium intensity development could be accommodated around such an intersection.

The above guidelines must be analyzed on a case-by-case basis in regard to existing and planned traffic capacity as well as other development factors (e.g.- existing zoning and development patterns, environmental concerns, etc.). An intersection displaying the characteristics of an activity center is the intersection of 151st Street South and Memorial Drive. This intersection has a mixture of low, medium and high intensity uses including residential, office, commercial and industrial.

Corridors

A corridor is an area comprised of uses more intense in nature and which generates high traffic volumes. These uses seek high exposure and convenient access to higher speed transportation facilities, most often next to expressways. Such uses are more appropriate in these locations provided they do not overload or otherwise compromise the efficient operation of the high-capacity expressway facilities. The depth of the corridor varies in accordance with given conditions including physical features, the extent and pattern of existing development, zoning relationships and distances to nearby interchanges or arterial and intersections. More intense uses will locate closer to the expressway and access will be limited or controlled to preserve roadway capacity and safety.

No portion of Bixby has adjacent expressway facilities. However, U.S. Highway 64/Memorial Drive provides critical access for Bixby and the south metropolitan Tulsa area. Because of this and improvements to the roadway, a modification to

the general designation of a corridor was considered appropriate by Bixby to preserve access, safety and capacity. Thus, the area in north Bixby adjacent Memorial Drive from the Arkansas River to 101st Street South was designated a corridor according to Bixby standards. O.S. Highway 67/151st Street South west of Memorial Drive has similar features, and it will experience growing traffic and development as has the area along Memorial Drive.

Special Districts

As previously noted, certain areas in an urban setting require special consideration due to particular characteristics, nature of land use, or unique features of the site. In Bixby, there are several areas where special development concerns and problems exist and precautions must be taken before urban development can be considered. Those areas are the Lake Bixhoma shoreline and its watershed, the Arkansas River flood plain and the flood plains and bottom lands of area creeks. Those areas are addressed in the intensity element of urban development design. However, the Bixby Creek bottom lands located on both sides of O.S. Highway 67/151st Street South extending down to Memorial Drive around 161st Street South may also qualify for special district designation due to the unique nature of historical, existing, and potential future agribusiness. This area has potential, strong implications for community image, theme and economics.

There are five areas in Bixby which have been identified as worthy of special district designation. The first is the "downtown area" of Bixby. That area which could receive Special District 1 designation is generally the area adjoining Needles, Dawes and Breckinridge Streets from Memorial Drive to "F" Avenue. The historical significance and thematic development potential in the area offers a unique opportunity in Bixby for development and redevelopment as the uses and character of uses change in the area. The location of Charley Young Park, the Municipal Building, the older buildings and transitional uses, and the departure of certain office and retail activity in the area are several reasons for designating this area as a special district. The creation of certain development/redevelopment design standards for the area could greatly assist and focus private efforts of development and revitalization that can occur.

The second area which can be considered for Special District 2 consideration is the area bounded by O.S. Highway 67/151st Street South, Yale Avenue, 141st Street South and Springtree Subdivision, and Harvard Avenue. This area has a very strong potential for business-industrial park development due to its common ownership and its proximity to existing industrial development (Kimberly-Clark

Facilities to the north), industrial roads, S. H. 67, and existing and planned public facilities. This area has been zoning and planned unit development restrictions and guidelines in place to accommodate special district development. This area includes Frank H. Geiler Urban Park, P.S.O. property, and lands along Yale Place and west of Yale Avenue.

The third area worthy of Special District 3 designation is located west and behind the existing industrial development along Memorial Drive, south of the Arkansas River, north of S. H. 67, and the upland area east of S. Sheridan Road. This area contains prime farm land and is presently used for agriculture purposes. These and other agricultural uses in Bixby provide a strong, positive image for the Bixby community and should be protected as appropriate. Continued use in agribusiness is particularly appropriate for the portion of the area which is located in the 100 year flood plain (development sensitive area). However, portions of the area west of the existing shopping center are zoned for industrial use. These portions have physical features and a location that are advantageous for a small business and/or industrial park. Those portions out of the flood plain are suitable for business and industrial development. Any change in use in this area should be designed to integrate continuing agribusiness uses, provide onsite drainage control solutions, provide appropriate buffers between residential land uses on the upland area along S. Sheridan Road, and link any industrial uses to adjoining uses to the east.

Another area is appropriate for designation as Special District 4. It is that area previously designated in the 1991 Bixby Comprehensive Plan in which a majority of the land is located within the 100 year flood plain. This development sensitive area is located approximately from one-quarter mile south of S. H. 67, west of S. Memorial Drive, north of 171st Street South, and east of the upland area along S. Sheridan Road. The majority of this land is used for agricultural purposes. This prime farm land contributes strongly to the "green theme" characteristic of Bixby. Preservation of those Special District "green theme" areas should continue. Any change in use in this area should be designed to integrate continuing agribusiness uses, and to provide onsite drainage control solutions. It should provide appropriate buffers between adjoining land uses on the upland area along S. Sheridan Road, south of 171st Street South, and along S. Memorial Drive.

The last area specifically identified for Special District designation is the Lake Bixhoma watershed. As described in the park, recreation, and open space plan elements, protection of this area is critical for all Bixby residents in order to preserve water quality. This area would be designated Special District 5.

Other areas may be appropriate for Special District designation. These include: (1) the agribusiness (sod farms) areas located north of U. S. 64 (171st Street South) and adjacent to S. Mingo Road; and (2) the Rock Creek watershed. In addition, any large parcel of land held in common ownership, and which has unique location and other physical characteristics suitable for unified use may be appropriate for designation as a Special District. Such areas may exist which have not been identified. Such areas would be appropriate to develop with Planned Unit Development zoning.

Expressways and Arterial

As previously emphasized, the transportation system of a community is a critical determinant of and an asset for urban growth. Preservation and maintenance of that system is mandatory for long-term community vitality. Major roadways play a crucial role in providing intra-regional and interregional land use linkages and in defining the boundaries of other land uses. The Urban Development Design Guidelines recognize this important fact.

The existing Bixby Major Street and Highway Plan recognized the strong need for access into the core of the Tulsa metropolitan area. This plan also recognizes the critical importance of coordination and consistency between roadway plans of adjoining jurisdictions, and thus it ties into the Tulsa City-County Major Street and Highway Plan. The foundation laid by the existing street and highway plan has been excellent. The emphasis is now shifting from the need for development of regional access to that of preserving existing and planned regional access. Those roadways of critical importance in the near future are U.S. Highway 64/Memorial Drive and O.S. Highway 67/151st Street South. 171st Street South is important for long range development and access.

The Bixby Major Street and Highway Plan recognizes four distinct roadway categories. These categories are defined in the Tulsa City-County Major Street and Highway Plan, however the categories and their characteristics are not spelled out in the Bixby Plan. Therefore, the categories of major roadways are defined as follows as they are recommended specifically for the Bixby area.:

1. The first category is the primary arterial which requires 120' of right-of-way. This roadway can be designed to provide a six-lane divided roadway (three lanes each direction). Memorial Drive is an example of a regionally and locally designated primary arterial. In function, Memorial Drive serves as a regional and inter-regional connector. The capacity to function effectively in

such a manner will be reduced with continuing growth of traffic and area development.

2. The second category is the secondary arterial which requires a minimum of 100' right-of-way. This roadway can be designed to provide a four-lane divided roadway (two lanes each direction) or even a six-lane roadway (three lanes each direction). 161st Street South is an example of a regionally and locally designated arterial. Both primary and secondary arterial have (or are to have at full development) higher traffic capacities at moderate speed that provide intra-regional access between primary land uses and neighborhoods. In a suburban community such as Bixby, these roadways also function as regional connectors for outlying agricultural areas and communities not directly linked to the regional expressway system.
3. The third category is the collector street which requires a minimum of 60' to 80' of right-of-way depending on whether it is to function as a residential, commercial or industrial collector street. These roadways have or are planned for lower traffic capacities at lower speeds. Such roads collect and disperse traffic within primary land uses and neighborhoods. An example of local collector streets are Stadium Road and "F" Avenue.
4. The fourth category is expressways (freeways or tollways). Expressways are limited or controlled access, high speed, high traffic capacity roadways which provide regional and interregional access and linkage. Examples of regionally designated expressways include the Keystone Expressway, Mingo Valley Expressway, Creek Turnpike, and the Cherokee Expressway.

One item of particular important consideration is that the existing Bixby Major Street and Highway Plan proposes the extension of the Mingo Expressway south across the Arkansas River into Bixby on an alignment about one-eighth to one-quarter mile west of Garnett Road. The update to the 1991 Plan continues to recommend an expressway to serve Bixby, Leonard, and the south Tulsa County area.

It is readily apparent that the preservation of the traffic capacity of Memorial Drive (U.S. 64), 151st Street South (O.S. 67), and 171st Street South is crucial to Bixby's future and justifies consideration of special designation and treatment of portions of these roadways. Thus, selected portions of these roads are designated Corridor Arterial Streets. This category is described in the Recommended Transportation Plan element.

Intensity

Intensity is the element of the urban development design concept which defines the level or concentration of use activity. The levels of development intensity are rural, low, medium and high. In addition, there are areas of the natural or man-made environment which should be excluded from development, or which require careful detailed analysis prior to restricted, select development. These areas are designated development sensitive. Development sensitive areas include areas of excessive slopes, flood hazard areas, certain airport flight zones, the watersheds and shorelines of water supply reservoirs, flood prone soils, and stream and creek beds. Application of these intensity classifications is proposed through the Bixby zoning codes and other development regulations.

Summary

A good deal of urban theory has been developed regarding the organization and determinants of urban form. In most instances, a pure example of a specific urban form cannot be found. In contemporary metropolitan areas, cities usually display characteristics of each theoretical form. In many instances, a city may exhibit a particular urban form tendency during a certain one period of growth, and then display another form during the next period of growth. This is much the case for Bixby.

Bixby is experiencing continuing and increasing pressures for growth. Its form has gone from a small, village like cluster to one increasingly impacted by the area transportation system with concentrated, more intense development along major roadways and their intersections. This study section summarizes the impact urban form has on private and public development. It also includes the Urban Development Design elements which guide Bixby's development. Understanding of these and recognition of Bixby's development assets and constraints will help the community to determine the development pattern that will best meet the community's needs.

PHYSICAL FEATURES ANALYSIS

Introduction

The physical environment of any locality has a direct impact on the birth, growth, continuing vitality and potential decline of a city. A community's physical features, both natural and man-made, give character to the shape, density, extent, and type of development and greatly defines the capacity for future development. This study updates and summarizes previous descriptions of Bixby to include all the planning study area.

Natural Features

Climate

Bixby is situated within a moderate, sub-humid climate zone on a latitude of 36 degrees characteristic of northeast Oklahoma. The area usually escapes extremes of long, hot summers and long, cold winters. However, pronounced periods of heat and cold do occur. In addition, rapid dramatic changes in temperature and precipitation do occur with frequent thunderstorms and occasional high winds and tornadoes in the spring and early summer. The average temperature 60°F, with high temperatures of 100°F in the summer and below 0°F in the winter occurring occasionally. Winds prevail from the south except for northerly winter winds.

Drainage Basins

The Planning Study Area (PSA) of Bixby is divided into two distinct drainage areas - the "north bank" and the "south bank" of the Arkansas River. These respective sides of the river are each composed of portions of different drainage basins. The north Arkansas River watershed is drained by the Fry Creeks (combined Fry Ditch 1 and Fry Ditch 2) and Haikey Creek basins (refer to Natural Features exhibit). The south Arkansas River watershed is drained by the Bixby Creek, Posey Creek, Duck-Snake Creek, and Mountain Creek-Leonard basins. Each of these basins can be divided into several smaller basins.

The total Bixby Planning Study Area is approximately 72.2 square miles in size. North of the river, storm water runoff flows generally southward and south of the river it is generally northward. Drainage and storm water runoff have had and will continue to have a dramatic role in the development of the community. It is a

principle concern for the older areas of the community and plays a significant role in most location decisions throughout the Bixby area.

The Natural Features exhibit depicts many of the dominant natural features in the PSA. The exhibit readily demonstrates that the lower portions of Haikey Creek, Duck-Snake Creeks, and Mountain Creek-Leonard Basin, and the majority of Bixby Creek watersheds have significant flooding concerns. Improvements to the Fry Creeks watershed by the U. S. Army Corps of Engineers are nearing completion during the time of this study. These improvements will substantially improve storm water drainage in this watershed and remove a large portion of the area from the designated the 100 year food plain.

The manner in which future development is permitted and the means of alleviating existing drainage problems continue to be of great importance to Bixby's future. Existing public policy which does not permit new development to contribute to existing drainage problems should to continue. Onsite detention facilities or channel improvements will be needed for most new development in the PSA. Areas already experiencing flooding will require some significant redevelopment and corrective measures to solve flooding problems, particularly in the old town area of the Bixby Creek Basin.

North of the Arkansas River, the Corps of Engineers improvements will solve major Fry Creek storm water problems for existing conditions. New development in the Fry Creeks and in Haikey Creek basins must comply with Bixby's engineering standards for storm water. South of the Arkansas River, a comprehensive system-wide hydraulic and hydrologic analysis of the PSA watersheds is still necessary to fully define and quantify storm water problems. It is recommended that the priorities for study are the Bixby Creek Basin and the Posey Creek Basin. Once done, then practical solutions to existing and potential problems can be determined for these developing areas. Studies should be prepared for the remaining watersheds prior to their development.

Topography

The upper reaches of the PSA north of the river have gently rolling topography. The topography of the lower reaches of both watersheds is relatively flat to slightly rolling. This level to nearly level terrain contributes to area flooding and the duration of that flooding.

The drainage basins south of the river have a greater variety of topography. The

Posey Creek watershed has gently rolling terrain throughout the study area. The topography of the lower reaches of the Bixby Creek, Duck-Snake Creeks, and Mountain Creek-Leonard Basin watersheds is relatively flat to slightly rolling and the middle reaches are gently rolling to rolling. The extreme upper and west reaches of the Bixby Creek have a few areas of steeper slopes. These areas provide attractive views to the east. The extreme upper reaches of Rock Creek in Duck-Snake Creeks Basin and Mountain Creek (Bixhoma Lake) in Mountain Creek-Leonard Basin have rolling to steep terrain. These areas provide attractive views to the west, north, and east in select areas. These steep slopes and flood prone areas are depicted in the Natural Features exhibit.

The significance to planning of area topography is that extremely flat or steep slopes cost more to develop properly than well-drained, gently rolling uplands or hillsides. A significant portion of land with few natural development constraints is located close to existing public services. This now includes: the Fry Creeks Basin lands removed from the 100 year flood plain and the lower reaches of the Posey Creek Basin.

Some dispersed development with certain urban services has occurred in the extreme southern portions of the corporate limits of Bixby. The extension of municipal services to areas beyond the corporate limits can lead to a dispersed or scattered development pattern. Particular attention must be given to location advantages and proximity when considering potential areas for future growth and economic extension of municipal services.

Those few areas in the PSA that offer dramatic high-ground vistas and views should be preserved or enhanced during design and development. The steep slope areas in west Bixby Creek Basin and in the Rock Creek and Although high-ground vista sites are limited, the area along the Arkansas River bridge and its approaches offer an excellent opportunity for establishing community "entries". The major roadways into Bixby also offer opportunities to establish community entries or "front-door" images for Bixby. These locations afford sites where community image can be maximized.

Soils

Knowledge of soil characteristics is a valuable tool in determining proper agricultural management techniques and those construction techniques necessary for long-term, quality urban development. The soils characteristics have been previously addressed in the 1976 Plan. The limitations and suitability for urban

development have remained essentially unchanged. Urban development in Bixby must still overcome wetness, texture, shrink-swell and other soil characteristics to provide proper roadway, building and utility construction. Proper soils tests and construction techniques are a continuing, critical requirement that must be ensured in the development process.

Special erosion control measures should be made to protecting soils on steeper slopes and within the Lake Bixhoma watershed if development is permitted.

Water Resources

The most obvious water feature in the PSA is the Arkansas River. This element is the dominant physical feature in Bixby and the metropolitan area. As previously described, it divides the PSA into two distinct major watersheds and in many ways it can impart a symbolic division of the community. However, the Arkansas River can serve as a visual and physical link within Bixby and the metropolitan area if certain opportunities are seized. These matters have been discussed in other study sections (refer to Park and Recreation-Open Space Plan).

Lake Bixhoma is a crucial feature of the physical environment. The lake is a primary source of Bixby's potable water supply and preservation of water quality is an obvious need. This has implications regarding the permitted development along or near its shoreline and within its watershed. The lake also serves an important recreational function for certain select activities. Prevention of point source and non-point source pollution is vital to preserving water quality in the Lake Bixhoma watershed and any future water source.

The Lake Bixhoma Watershed area is recommended for annexation and/or acquisition by the City of Bixby. The Lake Bixhoma Watershed is a critical area in which development should not contribute to any environmental or water quality problems. The soil conditions and severe slopes must be carefully considered for any development. It is recommended that:

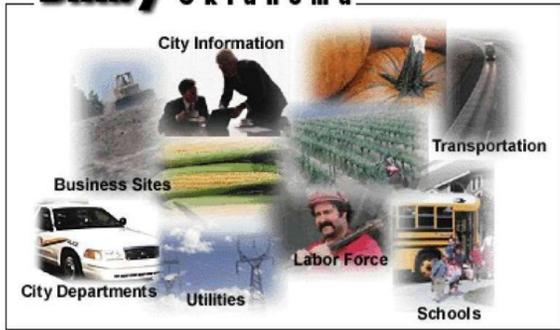
1. This area be recognized as a "development sensitive area",
2. Urban development be discouraged, and
3. The undeveloped, natural and rural character of the watershed be preserved.

The City of Bixby should consider annexation of all the watershed area in order to extend land conservation and preservation protections to this extremely valuable municipal resource.

One other water resource frequently overlooked are the various soil conservation and stock ponds found in the PSA. In most instances these ponds are located in the optimum sites for storm water detention facilities. The soils are usually difficult to build on in even in dry conditions and the ponds can serve as development focal points when properly integrated into development design. It is recommended that such features be preserved where appropriate.

Even though the city does not use water wells, it is imperative that the ground water resources are protected throughout the region and in the PSA. All businesses, including agricultural, commercial, scientific-research, and industrial, must meet all local, state, and federal standards and requirements are met to protect these resources.

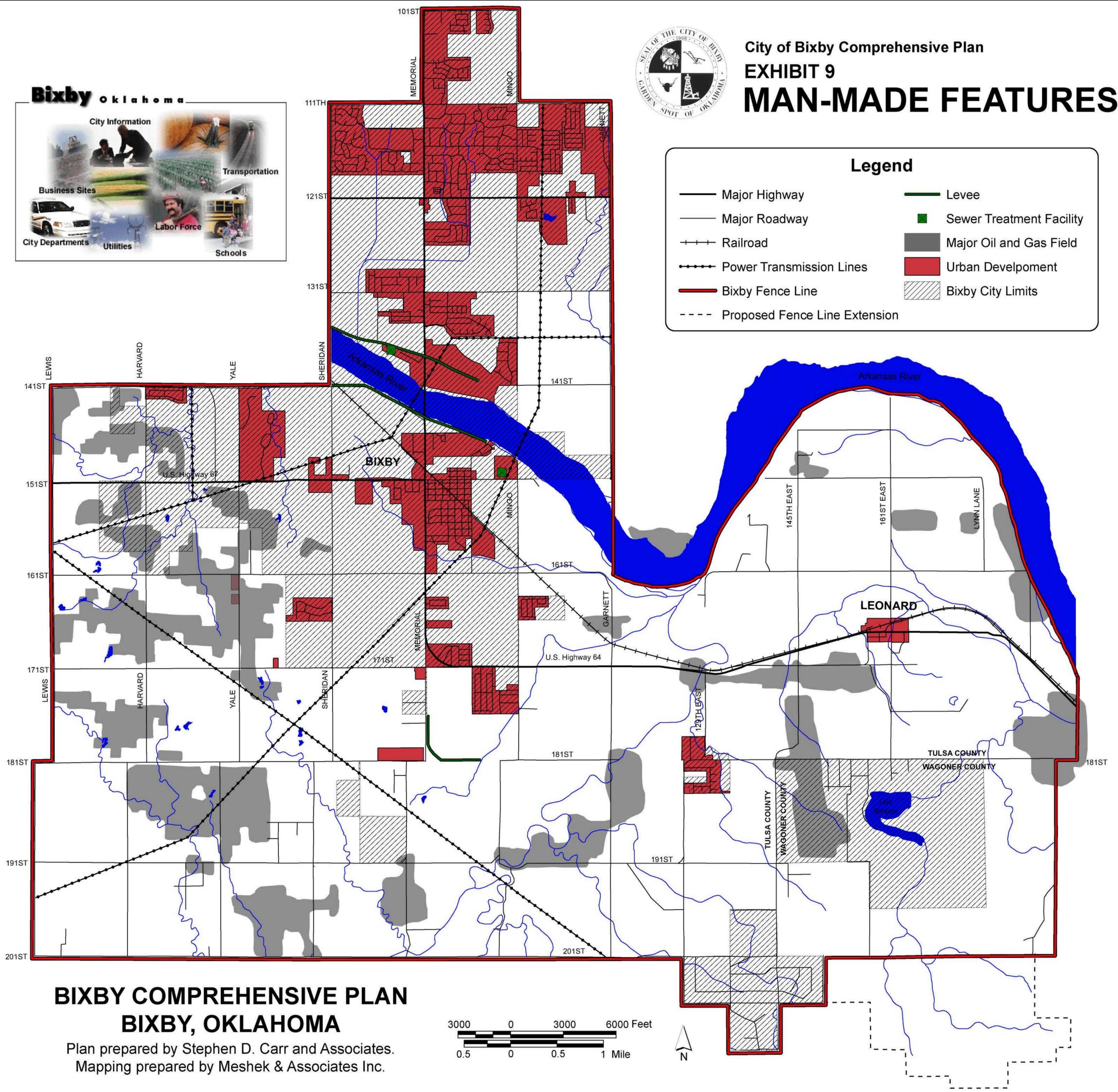
Bixby Oklahoma



City of Bixby Comprehensive Plan
EXHIBIT 9
MAN-MADE FEATURES

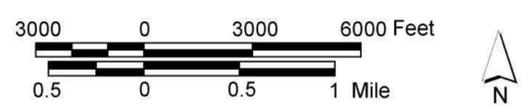
Legend

- Major Highway
- Major Roadway
- +++ Railroad
- Power Transmission Lines
- Bixby Fence Line
- - - Proposed Fence Line Extension
- Levee
- Sewer Treatment Facility
- Major Oil and Gas Field
- Urban Development
- ▨ Bixby City Limits



BIXBY COMPREHENSIVE PLAN
BIXBY, OKLAHOMA

Plan prepared by Stephen D. Carr and Associates.
 Mapping prepared by Meshek & Associates Inc.



Man-Made Features

Roadways and Railways

The transportation routes into a community have always played a dominant role in community formation, development, form and prosperity. Urbanization has concentrated at major crossroads, roadways and railways, and has provided distinct land use separations. The accessibility and linkage of major roadways will continue as a factor of area development. That development can continue and actually increase in vitality if accessibility is not only improved, but also maintained. As discussed in other report sections, existing and planned roadway carrying capacity and safety in Bixby must be preserved and enhanced.

The Man-Made Features exhibit depicts the location of existing major roadways in the area. Memorial Drive (U.S. Highway 64) and 151st Street South (O.S. Highway 67) are crucial linkages within the PSA and between the PSA and the rest of the region. The recent improvements to 151st Street South (O.S. Highway 67) and Memorial Drive provide Bixby with excellent access to the rest of the metropolitan area. It is critical the capacity and function of these roadways are preserved. Additional planned improvements to S. Memorial Drive and 171st Street South will provide similar facilities which must be protected as well. These two roadways are of such importance to Bixby that is recommended that special care be given to regulating access and adjacent development. Since no expressway is presently recognized by the regional and state highway plans, the capacity and access provided by and planned for these roads must not be allowed to diminish.

Other major roadways which will be of particular importance in the next five to fifteen years are S. Yale Avenue, S. Sheridan Road, and 171st Street South. It is expected that significant development will begin to take place adjacent these roadways. These roads will provide important connections within the PSA and between adjoining communities.

In addition to the highways indicated on the Man-Made Features exhibit, the area *arterial roads /section line roads are important to movement within the PSA and between adjoining communities.* As urbanization continues, these roads will increase in use and importance.

Area railways are also depicted on the Man-Made Features exhibit. The Texas and Pacific Railroad has been an important historical linkage for Bixby. Its importance

has returned dramatically with the recent location of the Kimberly-Clark Plant immediately adjacent the PSA. This railway is potentially an important logistical feature for certain industries which might choose to locate in the area. Traffic and land use conflicts with railways should be avoided wherever possible.

Transmission Lines and Other Features

The location of the major power transmission are depicted in the Man-Made Features exhibit. These facilities provide an important resource for location decisions for certain industries. The three major transmission lines in the PSA are owned by Public Service Company of Oklahoma (PSO), the Grand River Dam Authority (GRDA) and Oklahoma Gas and Electric Company (OG&E). Development design must not only respect the easements and right-of-ways on which these facilities are located, but it must also attempt to soften or mitigate their impact on the environment.

Other features depicted on the Man-Made Features exhibit include area sewage lagoons, the Bixby Cemetery and the area airfield north of the Arkansas River. Each of these land uses has a strong external influence on adjoining land uses can constrain adjoining development and should be carefully considered in future land use decisions.

Levees

Attempts to resolve area flooding issues are most apparent by the number of levees constructed along the river and area creeks. These levees are designed to divert or transmit storm water through flood prone areas. Continued long-term maintenance and rehabilitation of these structures is an often forgotten capital improvement need for this and other communities located on river bottom lands. An additional consideration for these facilities and their maintenance easements is their potential use for the extension of trails along the Arkansas River.

Major Oil and Gas Fields

This area of northeastern Oklahoma has a rich heritage in the petroleum industry. It is this heritage that spawned much of the early area urban development. It is also this development that now contributes to certain environmental and land use decisions. Of specific importance to Bixby is the significant number of working or abandoned oil and gas wells in the western and southern parts of the PSA. These areas contain much more of the land readily developed. Again, careful regard

must be given to location, land use, and construction decisions in this area. Good design can overcome many of the more visible problems often associated with such features.

Urban Development

The Man-Made Features exhibit depicts generally the concentrations of urban development in the PSA. As noted earlier, most development in Bixby historically has located along the major transportation linkages, even if these areas were susceptible to flooding or other development constraints. Of the approximately 72.2 square miles in the PSA, only a little more than 6.5 square miles is urban development. Newer development is located north of the river and in subdivisions outside the older town area, and in the community of Leonard. The large expanse of flood prone land has largely been bypassed by recent development.

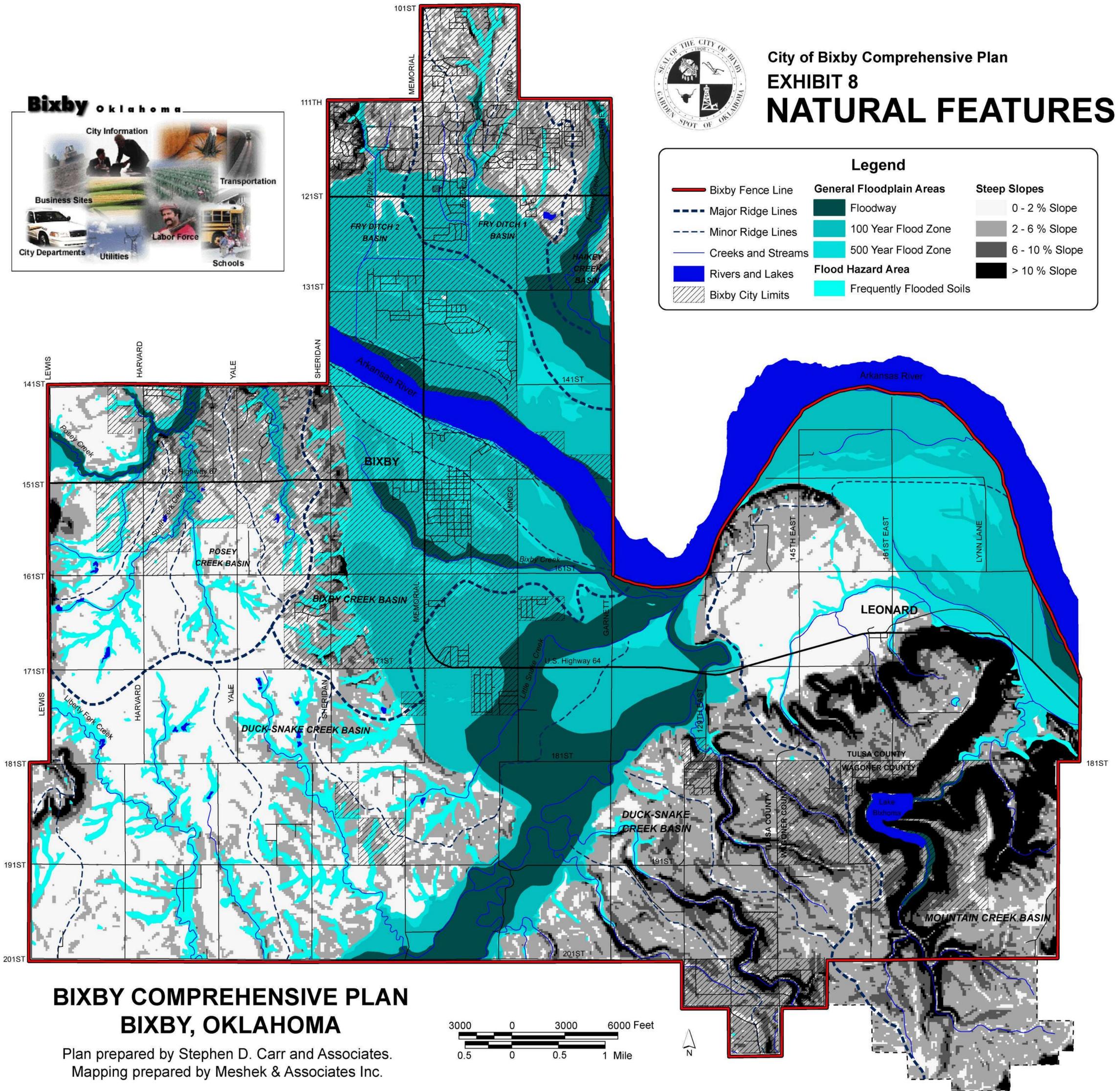
Most industrial development has located near the river and near the intersection of 151st Street South and Memorial Drive. Recent commercial and office uses have located near this intersection and along Memorial Drive between 11th Street South and the Arkansas River. Older business development is found along Memorial and in the old downtown area. The residential areas are scattered throughout the remaining urban areas indicated in the Man-Made Features exhibit.

Zoning and development plans have been prepared for significant amount of the PSA north of the Arkansas River and along 151st Street South (O. S. 67) west of S. Memorial Drive. In the recent past, approximately 2000 acres of land has been zoned, planned, and/or platted for development, and municipal services are available or services are being extended to these areas.

Bixby Oklahoma



City of Bixby Comprehensive Plan
EXHIBIT 8
NATURAL FEATURES

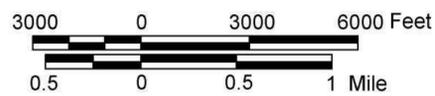


Legend

Bixby Fence Line	General Floodplain Areas	Steep Slopes
Major Ridge Lines	Floodway	0 - 2 % Slope
Minor Ridge Lines	100 Year Flood Zone	2 - 6 % Slope
Creeks and Streams	500 Year Flood Zone	6 - 10 % Slope
Rivers and Lakes	Flood Hazard Area	> 10 % Slope
Bixby City Limits	Frequently Flooded Soils	

BIXBY COMPREHENSIVE PLAN
BIXBY, OKLAHOMA

Plan prepared by Stephen D. Carr and Associates.
 Mapping prepared by Meshek & Associates Inc.



DEMOGRAPHIC ANALYSIS

Introduction

This study updates the demographic analysis prepared for the 1991 Bixby Comprehensive Plan based on the most current and historical population estimates for Bixby. These characteristics are important to determining future development patterns, trends, and land use demand. The characteristics summarized below concentrate on analysis of current and historic population and growth data. In addition, population trends of three other similar communities in the metropolitan area were included for comparison purposes.

Population and Growth

The two most critical determinants of an area's demographics are population and growth rates. Table 6 provides historical growth trends for Bixby, South Tulsa County Area, and Tulsa County. Between 1980 and 1990, the population of Bixby increased by 36% and 2,553 residents. South Tulsa County Area increased by 53% and 8,236 residents. Tulsa County increased in this same time frame 7% and 32,748 residents. Between 1980 and 1990, Bixby's share of Tulsa County growth equaled 7.7% and equaled 31% of the South Tulsa County Area growth. The growth of South Tulsa County Area equaled 25% of all of Tulsa County's growth in that time frame. Bixby's suburban growth rate was strong, as was the growth of the other communities in the South Tulsa County Area.

Between 1990 and 1998, growth of Bixby and the South Tulsa County Area has been even more dramatic. Bixby has grown by 5,327 residents or 56%, and South Tulsa County Area has grown by 9,455. Tulsa County has grown by 38,049 residents in that time frame. Bixby's represents 56% of the growth in the South Tulsa County Area and 14% of Tulsa County growth. Bixby had the highest growth rate (56.1%) in Tulsa County in that time frame. It also had the third highest number of new residents (5,327) falling behind only Tulsa and Broken Arrow.

Table 7 presents historic data for three other communities in the region - Glenpool, Jenks, and Owasso. Each of these communities shares location, sociological and economic characteristics quite similar to Bixby. One obvious logistical advantage that two of these communities - Glenpool and Owasso - possessed in the 1970's through 1990 was direct access to the regional expressway system. Jenks had less direct to the expressway system, and the congestion at the old 96th Street

River bridge is considered one factor that slowed growth of the river growth in that time frame. Although other factors came into effect, this expressway access contributed greatly to the strong growth in these communities during 1970 to 1990, as it did for Broken Arrow from the 1960's through the mid-1970's.

However, since 1990, the Creek Turnpike was completed and put into service. Jenks has grown by 25% and 1,850 since 1990. These communities have continued with strong growth from 1990 to 1998. However, Bixby experienced even stronger growth from 1990 to 1998. In this time frame, the majority of land which can be easily developed has already been developed in the city of Tulsa. It is believed that Bixby benefitted from the overflow development in south Tulsa into the portions of Bixby located north of the Arkansas River. It is expected that growth will continue in this area and in the remainder of Bixby due to a number of factors. Those factors include: it is in the "south Tulsa" area; it is located along and near the S. Memorial Drive business corridor; the amount of land available for development has grown with the removal of several areas from the Fry Creeks 100-year flood plain; urban services are readily available; improvements to S.H. 67 (151st Street South) have been completed; and there is a growing recognition of the quality of the Bixby School System.

TABLE 6
AREA POPULATION ESTIMATES AND TRENDS
Bixby Comprehensive Plan 1998 - 2020
1998

Year	Bixby	Percent Increase Bixby	South Tulsa Co. Area (STCA) ³	Percent Increase STCA	Tulsa County	Percent Increase Tulsa County
1970	3,973	-	6,760	-	399,982	--
1980	6,969	75.4	15,570	130.3	470,593	17.7
1990 ⁴	9,502	36.3	23,806	6.5	503,341	7.0
1996 ⁵	10,770	13.3	27,940	17.4	531,600	5.6
1998 ⁶	14,829	37.7	33,261	19.0	541,390	1.8

Source: U.S. Department of Commerce, Bureau of the Census; Demographic Research and Data Management, Research and Planning Division, Oklahoma Department of Commerce; Indian Nations Council of Governments; and SDC.

³ South Tulsa County Area is comprised of Bixby, Glenpool, Jenks and Liberty population data.

⁴ "1990 Decennial Census, Housing and Population Counts", U.S. Department of Commerce, Bureau of the Census.

⁵ "Population Estimates, Places by County: 1990-1996", U. S. Bureau of the Census - Population Estimates Branch.

⁶ U.S. Bureau of Census, Oklahoma Department of Commerce, Bureau of Economic Analysis, and I.N.C.O.G.

TABLE 7
COMPARISONS OF AREA COMMUNITIES
PAST POPULATION GROWTH 1970 - 1998
Bixby Comprehensive Plan 1998-2020

Population								
Year	Bixby		Glenpool		Jenks		Owasso	
	Pop.	# Chg. (% Chg.)	Pop.	# Chg. (% Chg.)	Pop.	# Chg. (% Chg.)	Pop.	# Chg. (% Chg.)
1970	3,973	- (-)	770	- (-)	2,685	- (-)	3,491	- (-)
1980	6,969	2,996 (75%)	2,706	1,936 (251%)	5,896	3,211 (120%)	6,149	2,658 (76%)
1990	9,502	2,533 (36%)	6,688	3,982 (147%)	7,493	1,597 (27%)	11,151	5,002 (81%)
1996 ⁷	10,770	1,268 (13%)	7,530	842 (13%)	8,650	1,157 (15%)	13,180	2,030 (18%)
1998 ⁸	14,829	4,059 (38%)	8,917	1,387 (18%)	9,343	693 (8%)	15,132	1,952 (15%)

Source: U.S. Department of Commerce, Bureau of the Census; Demographic Research and Data Management, Research and Planning Division, Oklahoma Department of Commerce; Indian Nations Council of Governments; and SDC.

⁷ "Population Estimates, Places by County: 1990-1996", U. S. Bureau of the Census - Population Estimates Branch.

⁸ U.S. Bureau of Census, Oklahoma Department of Commerce, Bureau of Economic Analysis, and I.N.C.O.G.

Population Projections

Historical growth rates can be used as an indicator of future conditions. Four projection growth series have been prepared for Bixby, the South Tulsa County Area, and Tulsa County. The 1990 and 1998 population estimates and projections of growth for 2000, 2005, 2010, 2015, and 2020 have been prepared and depicted in Table 8. The comparisons of potential growth were made to determine what might be anticipated for Bixby if different assumptions were made about future trends.

The population projections from the Oklahoma Department of Commerce (ODOC) show a 2020 population for Bixby which is actually lower than the 1998 population estimate 14,829. The ODOC data is shown for comparison for Bixby, South Tulsa County Area, and Tulsa County. However it is the contention of this study that these forecasts are not viable and should be updated by ODOC.

The remaining three low-to-high projection growth series (PGS) are shown for each area. The projections for Bixby show a 1998 to 2010 population increase equal to: a low of 4,471 (30%), a middle range of 9,711 (65%), and a high of 14,091 (95%). The South Tulsa County Area growth can be expected to range from: a low of 11,129 (33%) to a high of 21,859 (66%). Tulsa County projections show an increase equal to: a low of 44,430 (8%), a middle range of 53,000 (10%), and a high of 62,530 (12%).

The next 12 years of growth will continue to be strong if the growth assumptions prove to be accurate. However, the different population growth series yield substantial differences in forecasts when the series are extended forward an additional ten years to 2020. The low rate of growth (Trendline '80-'98) indicates that Bixby may expect a 22-year increase equal to 8,7691 (59%). The middle growth rate (Annualized '80-'98) shows that Bixby may expect an increase of 20,961 (141%) new residents. The high growth rate (Annualized '90-'98) shows that population could increase by 35,621 (240%) new residents.

These population projections vary substantially. In any case, Bixby must plan for and accommodate a significant number of new residents, shoppers, workers, visitors, and service needs in the community. For planning purposes, it seemed reasonable to use middle range growth forecasts. Thus an additional population growth series (PGS) was prepared. This PGS "A" is simply an average of the Trendline '80-'98 and the Annualized '80-'98 PGS.). The middle range PGS Annualized '80-'98 (PGS "B") was also used. It is predicted that Bixby can expect a

population of between 15,570 to 16,130 in 2000, between 21,920 to 23,926 in 2010, and between 28,940 to 34,895 in 2020⁹. These projections of population growth will be used to determine potential demand for land and services within Bixby for the next several years. These middle range population projections are depicted in Table 9.

⁹ It is recommended that annual population estimates and projections (based on the most accurate, available information, e.g.- the 2000 Census data or other primary research data sources) should be made to keep expectations and plans for growth reasonable and current.

TABLE 8
COMPARATIVE POPULATION ESTIMATES AND PROJECTIONS
1990 TO 2020
Bixby Comprehensive Plan 1998-2020

AREA Population Growth	Year						
	1990	1998 ¹⁰	2000	2005	2010	2015	2020
BIXBY							
ODOC ¹¹ :	9,502	-	11,615	12,165	12,710	13,220	13,660
Trendline '80-'98 ¹² :	9,502	14,829	15,010	17,160	19,300	21,450	23,590
Annualized '80-'98 ¹³ :	9,502	14,829	16,130	19,890	24,540	29,020	35,790
Annualized '90-'98 ¹⁴ :	9,502	14,829	16,570	21,890	28,920	38,190	50,450
SOUTH TULSA COUNTY AREA							
ODOC:	23,806	-	30,230	32,215	33,345	34,910	36,285
Trendline '80-'98:	23,806	33,261	34,630	39,510	44,390	49,270	54,150
Annualized '80-'98:	23,806	33,261	36,180	44,660	55,120	68,040	83,980

¹⁰ From Table 6 this study.

¹¹ From "Population Projections for Oklahoma and Its Counties by Age and Sex, and for Its Cities, 1980-2010", Oklahoma Dept. of Commerce, Nov., 1988; the 2015 number is extrapolated estimate.

¹² Trendline 1970 to 1998 population growth series is derived by trend-line projection of 1970 to 1990 growth to 2015.

¹³ Annualized '80 to '98 population growth series is derived by projection of 1980 to 1998 annualized growth to 2020 (equal to 4.285% annually for Bixby, 4.3% annually for STC, and 0.00781% for Tulsa County).

¹⁴ Annualized '90 to '98 population growth series is derived by projection of 1990 to 1998 annualized growth to 2020 (equal to 5.723% annually for Bixby, 4.27% annually for STC, and 0.00915% for Tulsa County).

Annualized							
'90-'98:	23,806	33,261	36,162	44,570	54,930	67,710	83,450
TULSA COUNTY							
ODOC:	503,341	-	559,760	581,170	599,480	613,405	621,025
Trendline							
'80-'98:	503,341	541,390	546,770	566,300	585,830	605,370	624,900
Annualized							
'80-'98:	503,341	541,390	549,870	571,700	594,390	617,980	642,510
Annualized							
'90-'98:	503,341	541,390	551,340	577,030	603,920	632,060	661,510

Source: U.S. Department of Commerce, Bureau of the Census; Demographic Research and Data Management, Research and Planning Division, Oklahoma Department of Commerce; INCOG; and SDC.

Housing Demand

Based on the above analysis and certain assumption, an estimate of the amount of additional housing units that will be needed to house future population can be calculated. The housing demand forecasts are depicted in Table 9 with population projections. The following assumptions were made in determining future housing demand: (1) the 1990 decennial estimate of 2.79 persons per household will continue in Bixby to 2015, (2) the demand for housing style and types will continue in Bixby as in the past, (3) the percent of the total population in Bixby housed in group quarters will double by 2000 and remain as a constant percentage (2.5%) to 2020, (4) the 1990 occupancy rate for housing units and group quarter units is the same, and (5) the occupancy rate will firm from 90% in 1990 to 95% by 2000 and remain constant to 2020. Table 9 reflects the results based on those assumptions.

Table 9 indicates that an additional 2,566 to 3,530 single family (or comparable) housing units will be needed in Bixby by 2010. In addition, 287 to 353 additional group quarter housing units will be needed by 2010. Between, 1998 and 2020, it is expected that an additional 5,425 to 7,688 housing units will be needed. An additional 481 to 634 group quarter units are needed to meet expected demand.

Two basic assumptions were used to determine the estimate of additional residential land needed at different future dates. It was assumed that: (1) single family housing will be provided at an average density of 3 dwelling units per gross

acre; and (2) group quarter housing will be provided at an average density of 16 units per acre. It was then estimated that by 2010: an additional 855 to 1,176 acres of new single family residential development will be needed; and an additional 18 to 22 acres of group quarters development will be needed.

Using the same development density assumptions, residential land demand estimates for the next 22 years were made. It is estimated that by 2020: an additional 1,808 to 2,563 acres of new single family residential development will be needed; and an additional 30 to 40 acres of group quarters will be in demand.

TABLE 9
BIXBY POPULATION AND HOUSING FORECASTS
Bixby Comprehensive Plan 1990 to 2020

Year	Pop. Total	Pop. in Group Quarters	Occupied Housing	Occupancy Rate	Pop. Added	New Group Quarters Needed	New Housing S. F. Units Needed
1990	9,502	120	3,363	0.90	-	-	-
1998	14,829	324	5,222	0.95	5,327	141	1,760
2000:							
PGS "A" ¹⁵	15,570	293	5,476	0.95	741	32	267
PGS "B" ¹⁶	16,130	304	5,672	0.95	1,258	43	474
2010:							
PGS "A"	21,920	548	7,660	0.95	6,350	255	2,299
PGS "B"	23,926	614	8,576	0.95	8,100	310	3,056
2020:							
PGS "A"	28,940	742	10,736	0.95	7,770	194	2,859
PGS "B"	34,895	895	12,507	0.95	10,969	281	4,158

Source: U.S. Department of Commerce, Bureau of the Census; and SDC.

¹⁵ P.G.S."A" - Population Growth Series "A" is derived from the average difference between Population Growth Series "Trendline '80-'98" and "Annualized '80-'98".

¹⁶ P.G.S."B" - Population Growth Series "Annualized '80-'98".

Additional Land Demand Estimates

In addition to the extra land for residential development, Bixby must plan for and accommodate the additional land needed to meet public service needs, recreational, retail and professional services, business and industrial enterprises, and the full range of land uses of a growing and changing community. In 1998, it has been determined that the Bixby population resides in an estimated 9.4 square miles of urban development. This is equivalent to approximately 0.41 acres of urban development per Bixby resident, or 407 acres of urban development per 1,000 population. Based on this general standard, then an additional 4,500 acres to 7,000 acres¹⁷ acres of associated urban development can be assumed to be required to meet additional urban land needs. This is equal to approximately 7 to 11 square miles of new urban development.

It is expected that the remaining undeveloped portions of Bixby north of the Arkansas River in the Fry Creeks watershed will urbanize due to the availability of urban services and the location in the leading edge of "south Tulsa" development. The extension of sanitary sewer trunk lines and municipal water trunk lines into the Posey Creek watershed opens an area of approximately 7.0 square miles of undeveloped or rurally developed lands. This area is expected to experience a great deal of the development pressures in the early to middle range of the planning period. However, development pressures can also be expected to begin in portions of the Duck-Snake Creek watershed which are located out of the 100 year flood plain. This would include areas in the Rock Creek watershed, the tributary watershed immediately north of Rock Creek, and the tributary watershed near the intersections of 181st and 171st Streets South along Memorial Drive. Development on the Duck-Snake Creek tributary watersheds might initially be expected to be somewhat more rural in nature. However, the extension of the Mingo Valley Expressway across the Arkansas River would provide much needed regional access to the area and facilitate higher urban densities for all areas. In any scenario for growth, it is clear that the community of Bixby must continue to prepare now if it seeks to adequately address anticipated growth and associated demands on its facilities and infrastructure.

The development of businesses in which to shop and work is critical to the future economic health of Bixby, and to the ability of the City of Bixby and Bixby Public

¹⁷ Derived from:

[(Added 2020 population/1,000) x 407 acres] - 1,198 acres of new residential land
= Other additional urban land required for 2020 Bixby population.

Schools to meet the demand for services. It is the development of business enterprises within the community which will provide families with the incomes, places to work, and centers to shop which will provide necessary retail sales tax and property tax revenues to fund existing and future infrastructure and public improvements. It is expected that most of the future business development will take place along Memorial Drive, 151st Street South, and 171st Street South. In addition, the extension of the Mingo Valley Expressway will provide location advantages for the "old town" area which should assist revitalization efforts for that area.

MEMORIAL DRIVE AND 171ST STREET SOUTH CORRIDOR

Introduction

Described below are selected describes the findings for the corridor of S. Memorial Drive (U.S. 64) between the Arkansas River and 171st Street South, and for 171st Street South from Memorial Drive to South Mingo Road. Additional recommended goals and policies for these important roadways are set forth in the goals, objectives, and policies section of the Plan document. The next portion of the study identifies area characteristics and the fourth portion identifies common design elements that are most visible and will have the greatest effect on the character and image for these important roadways.

Area Characteristics

The roadway sections in this study are found along an area which has experienced a degree of urbanization common to most rural, historically agricultural base communities which are located on the edge of an expanding metropolitan central city, in this case Tulsa. Bixby is experiencing substantial increase in resident population, additional vehicular traffic, growth development and redevelopment pressures, and subsequent changes in land use. The attached "Corridor Area Analysis" map depicts characteristics of this area.

River Zone

The first roadway section is that area from the Arkansas River to 151st Street South. This "River Zone" provides an opportunity for establishing a very positive visual impact zone that builds upon the natural features of the river and the development activity that is taking place adjacent the river itself. These activities adjacent the river include sand and building material "mining", the sod farms on the north side of the river, the "Old River Bridge" Bixby Trail connection adjacent Memorial Drive bridge, industrial and commercial uses fronting Memorial Drive, and a few vacant and agriculture uses fronting Memorial Drive. The undeveloped and/or agriculture uses adjacent Memorial Drive are being prepared for business development by property owners.

Improvements made in the past several years to Memorial Drive and to 151st Street South (S.H. 67) have provided additional carrying capacity on these roadways. However, these roads are heavy traffic zones which will continue to experience increases in traffic volume with growth of development south of the Arkansas River. It appears that the four lane portion of Memorial Drive south of the river merits

consideration for addition of fifth turning lane as development and traffic increases. It also appears that a sidewalk/trail system should be provided for this area in conjunction with any roadway improvements and development along S. Memorial Drive. This sidewalk/trail system would provide a valuable connection to the Bixby Trail System and other portions of the Bixby Planning Area. It would also provide for alternative means of transportation to uses in the area.

The intersection of these two major roadways is a critical point for dispersion of traffic south, east, and west in the Bixby Planning Area. S. Memorial Drive is an extremely important primary arterial as identified by the adopted Tulsa City-County Major Street and Highway Plan and the Bixby Transportation Plan 1991-2015. 151st Street South is also a critical primary arterial as identified by both of those Plans. It will also serve as a major connector to the Mingo Valley Expressway Extension proposed for the east portion of Bixby. 151st Street South (S.H. 67) will function as the major southern roadway and the principal connector between U.S. 64 and U.S. 75 for Tulsa County south of the Arkansas River for many years to come. The Memorial/151st intersection is a place at which a very strong positive visual impact for Bixby can be created. It is expected that these roadways will experience traffic congestion when improvements to S. Memorial Drive from 151st Street South to 161st Street South begin. A means of bypassing this congestion point is recommended early in the planning period. The provision of new collector street connections east and west of Memorial Drive are strongly recommended. Traffic signals at this "bypass" intersection are recommended. The Memorial/151st intersection can also be a major identification point to the "Old Downtown" (Special District 1) area.

The application of municipal landscape and sign ordinances for redevelopment and newly developing areas adjacent to Memorial Drive will enhance the image of this corridor. Continuity of select design elements is possible for these areas with the application of similar design standards, elements, materials, landscaping, and streetscape features.

Downtown and Creek Zone

This is the area which is adjacent the original Bixby Town site and historical development and the development along or adjacent Bixby Creek. This includes Memorial Drive from 151st Street South to 161st Street South. It includes that area in which the State of Oklahoma has acquired additional roadway for widening of S. Memorial Drive. The area has a mixture of commercial and residential uses which front or abut the roadway. Development extends south to Bixby Creek. There are also tracts of land which are undeveloped or are used for agricultural purposes.

Most of the land south of Bixby Creek to 161st Street South is vacant or agricultural in use on the west side of Memorial and some mixed quasi-public and business uses on the east side of Memorial Drive. Continued changes in land use and redevelopment of existing uses is expected as Bixby grows, particularly after improvements to S. Memorial Drive are completed. This area can be expected to urbanize in the future.

The northern most quarter mile of this section provides the front door to the "Old Downtown" (Special District 1) area of Bixby. Redevelopment and re-parceling of land in this area is expected during and upon completion of roadway improvements by the State of Oklahoma Department of Transportation (O.D.O.T.). Special consideration is recommended for the "entrances" to the downtown area.

The second quarter mile south of 151st Street South contains residential and business development. It also has one of the main "entrance" streets to the Bixby School System main campus area. The opportunity exists for establishing a positive entry treatment or identification zone to this campus area. It is recommended that design considerations be given to limiting or reconfiguring direct access to the established residential neighborhoods adjacent S. Memorial Drive. Entries to these areas should also be positive in appearance

The residential areas which abut Memorial Drive should be buffered from the improved roadway. The provision of a setback area with landscape and sidewalk/trail improvements is a recommended along residential areas.

This corridor has a significant flood plain area. The Bixby Creek flood plain continues to experience flooding problems from not only the 100 year frequency flood, but also from more frequent storm water events. Improvements, including roadway improvements, along the creek and within the flood plain must comply with Bixby's development regulations and not contribute storm water problems. The opportunity exists to utilize future storm water improvements as part of the Bixby Trail System. The trees along this creek provide an important visual and aesthetic amenity. Where feasible and practical, healthy trees should be preserved. A grade separated crossing of Memorial Drive should be considered in the design of storm water and roadway improvements. If roadway improvements precede creek improvements, the bridge over Bixby Creek should be designed if possible to provide an underpass for pedestrian and bicycle traffic.

The Memorial/161st intersection is an important impact zone for this corridor. S. Memorial Drive is a vital primary arterial and 161st Street South is an important secondary arterial in the Bixby Planning Area and for the region as identified by the

adopted Tulsa City-County Major Street and Highway Plan and by the Bixby Transportation Plan 1991-2015. The intersection and the roadways will increase in importance as the Bixby area continues to urbanize.

As with the "River Zone" portion of the corridor, the application of municipal landscape and sign ordinances for redevelopment and newly developing areas in the Downtown and Creek Zone will enhance the image of this corridor. Continuity of select design elements is possible for these areas with the application of similar design standards, elements, materials, landscaping, and streetscape features.

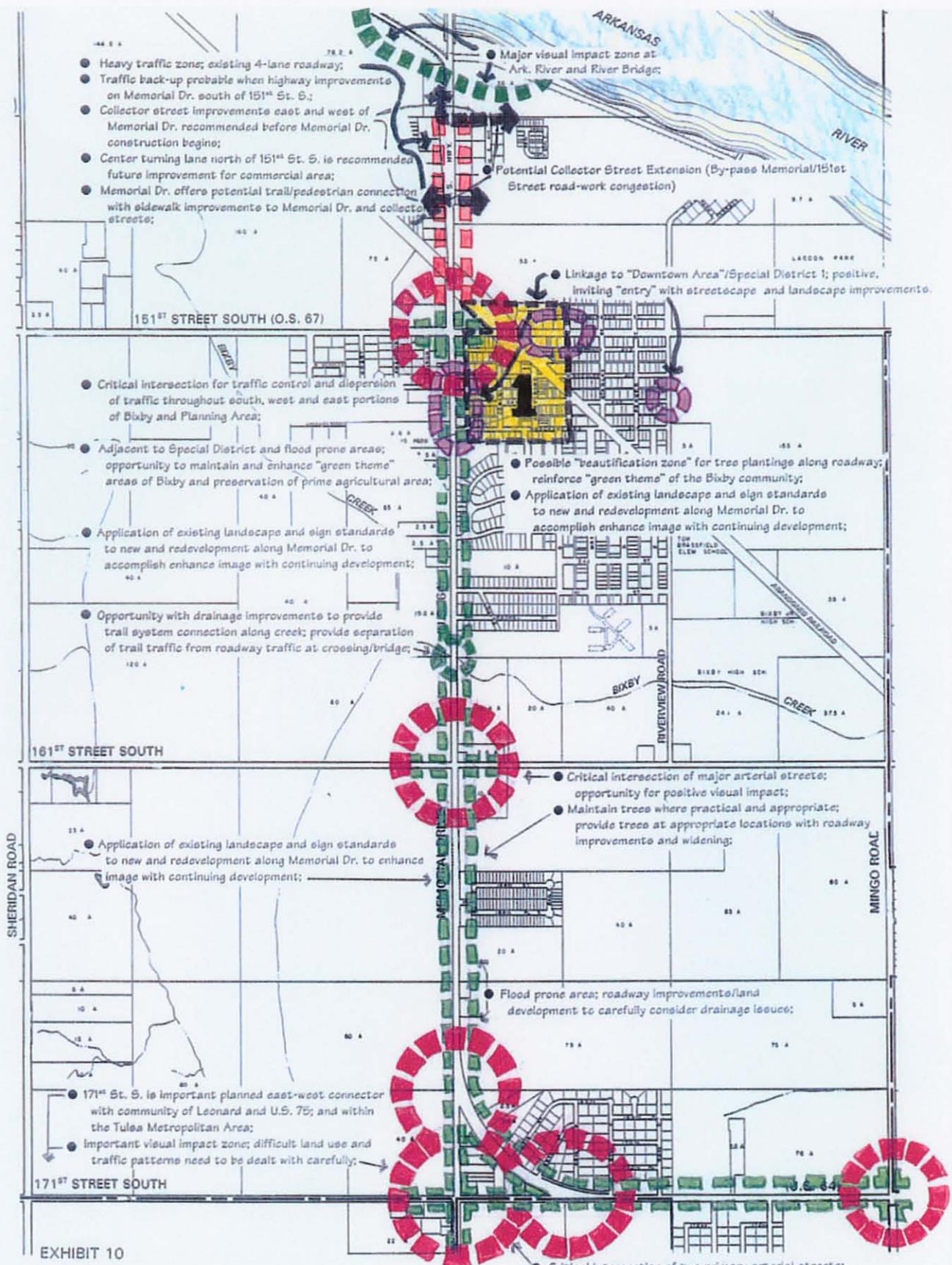
Agriculture Zone

This area of the corridor extends from 161st Street South to 171st Street South. There is a mixture of uses along this portion of the roadway. Uses include agricultural and vacant land, residential, and a variety of business uses. The majority of the land on the west side of Memorial Drive is agricultural or vacant. The area west of Memorial is located within the Special District 4. The Special District 4 designation is due in part to the significant amount of 100 flood plain and due to the large amount of prime agriculture land.

Improvements, including roadway improvements, along the creeks and drainage ways and within the flood plain must comply with Bixby's development regulations and not contribute storm water problems. The opportunity exists to utilize future any storm water improvements as part of the Bixby Trail System. This is an area in which the "green theme" image of Bixby can be preserved and enhanced.

The Memorial Drive and 171st Street South intersection is particularly important. The development at the intersection is of a configuration that will careful design to both protect and enhance existing, viable development, and to accommodate future traffic movement patterns and changing development patterns.

The Memorial/171st intersection is an important impact zone for this corridor. Both S. Memorial Drive and 171st Street South are vital primary arterial streets in the Bixby Planning Area and for the region as identified by the adopted Tulsa City-County Major Street and Highway Plan and by the Bixby Transportation Plan 1991-2015. The intersection and the roadways will increase in importance as the Bixby area continues to urbanize. 171st Street South will serve as an important east-west connector between U.S. 64 and U.S. 75, particularly as this area urbanizes in the future.



- Heavy traffic zone; existing 4-lane roadway;
- Traffic back-up probable when highway improvements on Memorial Dr. south of 151st St. S.;
- Collector street improvements east and west of Memorial Dr. recommended before Memorial Dr. construction begins;
- Center turning lane north of 151st St. S. is recommended future improvement for commercial area;
- Memorial Dr. offers potential trail/pedestrian connection with sidewalk improvements to Memorial Dr. and collector streets;

- Major visual impact zone at Ark. River and River Bridge;
- Potential Collector Street Extension (By-pass Memorial/151st Street road-work congestion)

● Linkage to "Downtown Area"/Special District 1; positive, inviting "entry" with streetscape and landscape improvements.

● Critical intersection for traffic control and dispersion of traffic throughout south, west and east portions of Bixby and Planning Area;

● Adjacent to Special District and flood prone areas; opportunity to maintain and enhance "green theme" areas of Bixby and preservation of prime agricultural area;

● Application of existing landscape and sign standards to new and redevelopment along Memorial Dr. to accomplish enhance image with continuing development;

● Opportunity with drainage improvements to provide trail system connection along creek; provide separation of trail traffic from roadway traffic at crossing/bridge;

- Possible "beautification zone" for tree plantings along roadway; reinforce "green theme" of the Bixby community;
- Application of existing landscape and sign standards to new and redevelopment along Memorial Dr. to accomplish enhance image with continuing development;

- Critical intersection of major arterial streets; opportunity for positive visual impact;
- Maintain trees where practical and appropriate; provide trees at appropriate locations with roadway improvements and widening;

● Application of existing landscape and sign standards to new and redevelopment along Memorial Dr. to enhance image with continuing development;

● Flood prone area; roadway improvements/land development to carefully consider drainage issues;

- 171st St. S. is important planned east-west connector with community of Leonard and U.S. 75; and within the Tulea Metropolitan Area;
- Important visual impact zone; difficult land use and traffic patterns need to be dealt with carefully;

● Critical intersection of two primary arterial streets; U.S. 64 link between Planning Area and the region;

● CORRIDOR AREA ANALYSIS ●

Common Design Elements

The common elements are the components of the physical features which are most visible and have the greatest impact on the character of this transportation corridor. These elements are both natural and man-made. These elements are highly visible and visually significant, and they are the focus of Design Standards are to be developed for this corridor. The design elements are: circulation zone, edges, entrances, and open space zone. The "Corridor Design Elements" plan map depicts the area for which the Design Standards are to be applied.

Circulation Zone

The *circulation zone* is that portion of the roadways for which the primary objective is to move traffic safely into and through the Bixby Planning Area. It is the circulation and visual spine and the primary point of entry into the corridor and urban portions of Bixby. The circulation zone in the study area extends through uses of varying levels of land use intensity. This area extends roughly 150' back from the center line of S. Memorial Drive and 171st Street South of the study area. It is that zone in which people and vehicles move into, move out of, and merge with corridor traffic. Protection of line of sight and provision of an attractive visual image is most important in this area.

Edges

The *edges* are those portions of the roadways which are most readily seen by motorists and pedestrians. A consistent image is important to be established for edges along the length of the corridor. The transition from the "green theme" agricultural setting of the community into the developing urbanizing portions of the community should build on park-like and agrarian elements of the man-made and natural environment. This transition area is a dynamic zone which will continue to change with growth in the region. However, the quality, image, and visual context for certain physical elements of all development should be established. In this corridor, there are three types of edges: *residential edges*, *business-special edges* and *rural edges*. Residential edges are intended to back onto roadways or to have a significant buffer or setback from roadways. The business-special edges include those in which non-residential activities exist or are planned, including special district, quasi-public, commercial, office, scientific-technology, and industrial uses. These edges may front on the roadways, but are intended to provide attractive landscape, signs, pedestrian/bicycle paths, and other physical improvements. The *rural edges* are the areas which are expected to develop in an agrarian manner due to the significant amount of flood plain, prime agricultural soils, difficulty in removal

from the flooding and conversion to urban use, and distance from urban development.

Entrances

The entrances into the community are those places where a specific visual statement of entry can be established along the corridor. There are two levels of entrances for the corridor. There are the major *corridor entrances* which are also major entrances into the community. There are also *project entrances* into neighborhoods, special districts, or project areas. The major roadway intersections are major visual *impact zones* which function as corridor entrances and provide an opportunity for establishing a positive image. Preservation of line-of-sight through the provision of low profile, attractive improvements and landscaping is important at these locations.

Open Space Zone

The fifth design element is the *open space zone*. This natural system consists of flood plains and storm water drainageways. A very significant portion of the corridor is located in the flood plain. This flood plain includes Bixby Creek and meandering drainage ways within the flood plain. Large portions of this system have been built upon in the older areas of the city. Other large portions of the flood plain are used for agriculture and agribusiness activities. The open space zone includes that land area which is devoted to or planned to be devoted to storm water channel improvements, pedestrian and bicycle trails, and reserve areas devoted to preserving open space and providing flood protection.

PLAN IMPLEMENTATION

PLAN IMPLEMENTATION

INTRODUCTION

The Bixby Comprehensive Plan 2001-2020 will be implemented through a variety of strategies, techniques and programs. The most frequently used of these implementation tools are the zoning codes, subdivision regulations, building and construction codes and capital improvement programs. The following recommendations are included as specific means to accomplish certain goals, objectives and policies of the Plan.

ADDITIONAL DETAILED PLANNING

Certain areas of Bixby are deserving of detailed planning. Special Planning Districts 1, 3, 4, and 5 are such areas, as are any other identified Special Districts. Other areas receive detailed planning through the Planned Unit Development zoning process. Such areas are often appropriate of Special District designation and also can receive detailed planning through Planned Unit Development zoning. Other areas or facilities deserving of additional detailed and functional planning include the areas discussed: (1) the Memorial Drive alignment from 161st Street South to 171st Street South and 171st Street South from Memorial to Mingo Road; (2) 151st Street South from Memorial Drive to east of Mingo Road; and (3) alignment studies for a Mingo Valley Expressway extension to Bixby.

CAPITAL IMPROVEMENT PROGRAM

A capital improvement program is a short range plan for studying, listing, prioritizing and funding physical improvement needs in the community. It is generally three to five years in scope, but it may be shorter or longer. The capital improvements program lists improvement needs and schedules their construction to provide contiguous, continuous and orderly growth and problem resolution. The capital improvements recommended for Bixby should include those pertaining to public facilities, public utilities and roadways. The nature and expense of constructing these major improvements is such that they are of community impact and should be met first by the community.

Bixby should continue to implement a program of capital improvements. Following adoption of the Plan, it is recommended that a capital improvements program update be prepared by the City to fund and build those improvements considered most necessary. It is suggested that the regular process of monitoring community

conditions be enhanced to allow the modifications or revision of programmed according to community needs, priorities and the availability of public and private funds. It is suggested that a capital improvements oversight committee be established to monitor and oversee this program. This committee would help relieve potential concerns and educate citizens about needs, project purpose and costs. Publication of project lists, locations and costs in local papers is recommended to increase citizen awareness of the capital improvements program and to foster knowledgeable decisions on funding projects.

The following is a list of major capital projects that are of particular importance to Bixby early to the middle of the Plan period. This general list is not a complete analysis of capital needs and projects, but represents only a beginning statement of readily apparent needs which should be detailed according to local officials and citizen input.

CAPITAL IMPROVEMENTS NEEDS IN BIXBY, OKLAHOMA

PUBLIC FACILITIES:

- Existing community drainage problems improvements (short term immediate problem solutions); particular attention should be given to the older portions of Bixby south of the Arkansas River.
- Bixby Creek master drainage plan and improvements.
- Washington Irving Park enhancements.
- Bixby Sports Complex and River Parks site improvements and expansion.
- Special District 1 Plan and improvements.
- Civic Center Plan.
- An additional "New Sports Complex"; optional locations would be west of Memorial Drive and south of the Arkansas River, or east of Memorial Drive and north of the Arkansas River. The minimum size would be 40 acres for a single purpose/sports program site.
- One new "Central" Community Park located centrally north of the Arkansas

River.

- One new "Central" Community Park located centrally west of Yale Avenue and south of the Arkansas River.
- Bixby River Parks and Tulsa River Parks Trail System connection(s).

PUBLIC UTILITIES:

- Expanded treatment capacity for Bixby north and south of the river.
- Trunk water line connection to Tulsa system at 151st Street South and Yale Avenue.
- Complete looping connections in critical areas of existing water distribution system.
- Replacement of deficient lines and provision of minimum standard service lines in existing under-served areas.
- Replacement of existing deficient sanitary sewer collection lines.
- Updated Sewage Treatment Study (Bixby treatment facility enhancement and alternatives)

TRANSPORTATION:

- Existing deficient streets resurfacing.
- 151st Street improvements from Memorial Drive to Mingo Road.
- Memorial Road improvements from 151st Street South to 171st Street South.
- 171st Street South improvements from Memorial Drive to Garnett Road.
- Mingo Valley Expressway alignment selection and approval, then preliminary reservation and acquisition of right-of-way.
- Downtown Area and Bixby schools' area street, streetscape and

landscaping improvements

- "Outer loop" collector street(s) right-of-way acquisition and construction (area north of 151st Street South).
 - Yale Place to Yale Avenue connection and bridge (north of Bixby Planning Area).
 - Bixby industrial park collector street construction.
-

Once a capital improvements program is established for Bixby, it is recommended that the program be updated regularly. This update would monitor completion of all or portions of the program and to add to the program as portions are achieved.

RESOURCES

RESOURCES

Aerial Photography, 1" = 220" scale, INCOG, January 1995 and 1997.

Bixby Comprehensive Plan 1991-2020, City of Bixby, Oklahoma, Stephen D. Carr and Associates, 1991.

City of Bixby Planning Department and Public Works Department, 1997-1998.

Comprehensive Plan for the Town of Bixby, Bixby, Oklahoma, TMAPC, and Joel K. Smith, June 30, 1976.

Comprehensive Zoning Maps, 1" = 600', and Land Use Base Maps, 1" = 200', INCOG, 1995 and 1997.

Oklahoma Natural Gas Company, Gas Lines Atlas Maps, 1998.

"Population Estimates, Places by County: 1990-1996", U. S. Bureau of Census Population Estimates Branch; Prepared by: Oklahoma State Data Center, Oklahoma Department of Commerce.

"Population Projections: 1990-2020", Oklahoma State Data Center - Oklahoma Department of Commerce.

"Soil Survey of Tulsa County, Oklahoma", "Soil Survey of Wagoner County, Oklahoma", and "Soil Survey of Okmulgee County, Oklahoma"; United States Department of Agriculture Soil Conservation Service in Cooperation with Oklahoma Agricultural Experiment Station.

"The Bixby Land Use Plan - Memorial Drive Corridor", An Amendment to the Comprehensive Plan, TMAPC, June, 1980.

"Tulsa City-County Major Street and Highway Plan - An Element of the Comprehensive Plan", City of Tulsa and Tulsa County, Oklahoma; INCOG, 1997.

Tulsa's Physical Environment, Tulsa Geological Society, Digest, Volume 37, 1972.

Windshield Surveys, Stephen D. Carr and Associates, 1997-1998.