Economic Analysis

11

The Economics of the City Plan 2025

A review of the economic impact of growth pattern options shows that implementing the City Plan 2025 strategies will have positive effects on businesses and public services.

Current Land Use Capacity

Table 1
Vacant, Redevelopment Potential and Agricultural Land

Vacant Land	West	South	East	Central	Totals	Planning Area	Totals All
Residential	1,001	541	693	125	2,360	951	3,312
Commercial	561	259	238	59	1,117	39	1,157
Industrial	1	390	-	1	392	-	392
Agricultural	1,964	1,694	774	58	4,489	11,741	16,230
Vacant Land Subtotal	3,527	2,884	1,705	243	8,359	12,731	21,090

Potential Redevelopment	West	South	East	Central	Totals	Planning Area	Totals All
Residential	48	115	92	9	263	194	458
Commercial	120	88	61	51	320	22	342
Industrial	-	35	-	-	35	-	35
Redevelopment Subtotal	168	237	153	60	618	217	835

	West	South	East	Central	Totals	Planning Area	Totals
Agric. Imp/Misc	1,814	1,525	823	38	4,200	12,840	17,040
All Acres Total	**5,509**	**4,645**	**2,681**	**341**	**13,177**	**25,788**	**38,964**

Source: Fayetteville Geographic Information System

For purposes of this planning study, the City was divided into four areas, which together with the Planning Area outside the City, were included for analysis. Table 1 shows an enumeration of vacant parcels, parcels with redevelopment potential, and agricultural land in each of the areas. The enumeration does not include school fields or parkland within or outside the city. Agricultural land with improvements is included, as it may be possible for developers to purchase and develop it in the future.

This information shows that the City has significant area to develop, but in recent years, the pattern of new development has been more land-intensive than is traditional in Fayetteville. New development undertaken at suburban densities on the outskirts of the City has raised questions about the capacity of the City to sustain its share of the growth projected in the region while maintaining its quality of life.

Growth Patterns

The original pattern on which the City was laid out was a compact plan, using gridded streets with the town square at the center. As the City grew, it utilized this pattern until the middle of the twentieth century. The core area of the City fosters an understanding of the difference between current growth patterns and those of the past, contrasting the area surrounding the town square and the larger historical City (these areas are shown on the map on the following page). For convenience, we called these three areas the inner core, the outer core, and the non-core areas of the City.

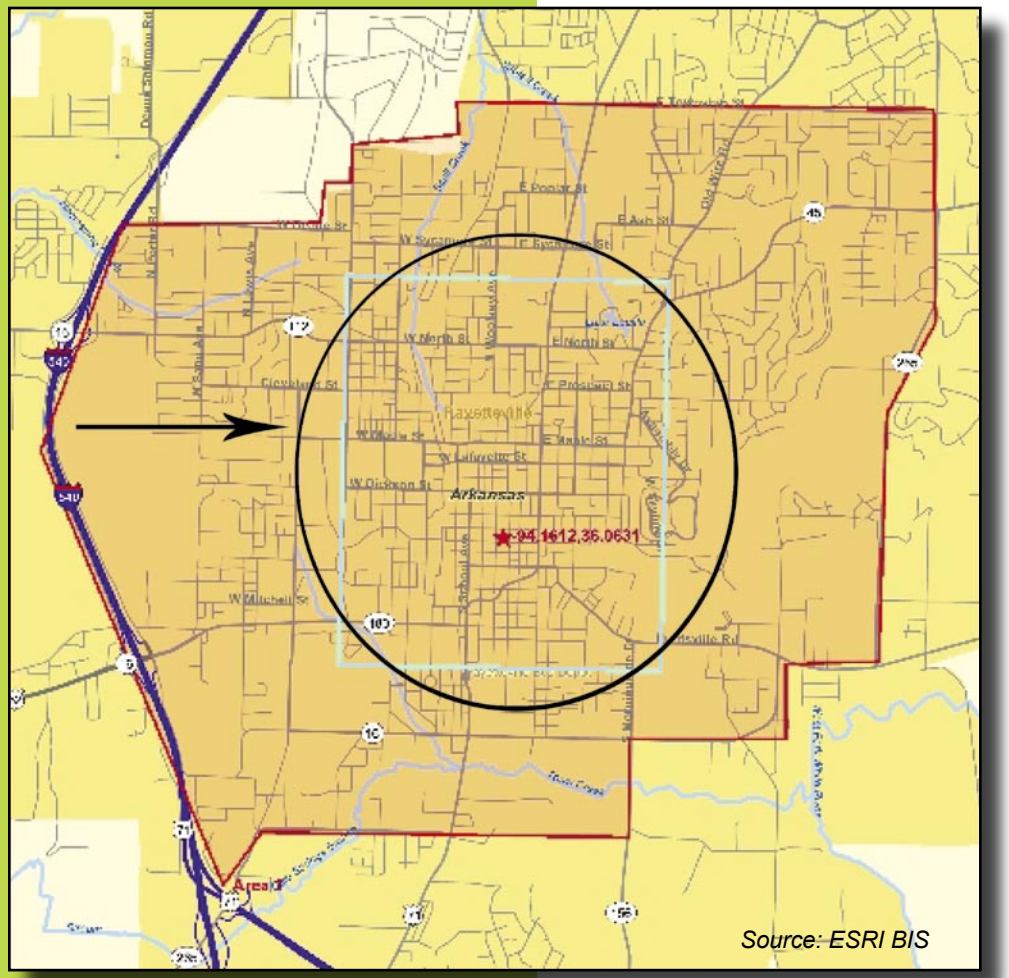

Figure 1:
Core Areas of Fayetteville

The Core and Non-core Areas of the City

The inner core of Fayetteville was examined for its population density. Based upon current information from ESRI BIS there are approximately 5,800 people per square mile in the central core. This translates to 9.7 persons per gross acre[1], and at current household size approximately 4.5 households per gross acre in the core surrounding the town square. The Outer Core Area has a population density of 3,329 people per square mile, or 5.55 persons per gross acre and approximately 2.4 households per gross acre. To give an idea of the density of the Inner Core Area, it has approximately the same density as the Washington Willow neighborhood. When we look at the rest of the city, the current density is much lower: approximately 600 people per square mile, or around 1.25 persons per gross acre, which yields approximately one-half household per gross acre.

The light blue square is the inner core area of Fayetteville centered on the town square, an area of approximately three square miles. The circle with a one-mile radius is shown for reference purposes. The area shaded and surrounded by the red line is what we labeled the outer core and is approximately 11.2 square miles.

What if the Pattern Continues

To understand the amount of land needed to accommodate 40,000 new residents given current growth patterns outside the core, Urban Advisors calculated the density of population on land not including roads, parks and schools. This is summarized in Table 2 (next page). In this analysis, there are approximately 0.29 acres used per person, resulting in a need for approximately 11,400 acres of residential land. When land is factored in for roads, parks, low-density employment and services, and churches and schools, the total comes to approximately 16,200 acres. This is not an unusual scenario for suburban density, and Fayetteville could achieve this overall density through significant land annexation for the purpose of development. The economics of this style of land development encourage development to occur at the edges first where land is the least expensive. In fact, this pattern of development is already proceeding outside the City, with the expansion of areas such as Goshen.

[1] A gross acre includes roads, parks

Outer Area Acres (City less Core)	8,468
Outer Area Population	29,624
Outer Area Population/Acre	3.5
Outer Area Acres/Person	0.29
Added Population	40,000
Residential Acres Needed at Outer Density	11,434
Plus Roads	2,287
Plus Parks & Open Space	1,715
Plus Employment at Low Density	490
Placeholder: Schools, Churches	300
Total Acres Used for Growth	16,226

Table 2:
Land Needed at Current Development Pattern

The results of such development do not answer the concerns of current residents well. Low-density retail, employment and services must be auto-oriented, resulting in more strip development and auto-oriented centers. Widely spread land use that relies on cars results in increased congestion because all activity undertaken outside the home will require car trips. Workforce housing is less likely to be built because the cost of land development and services per unit is higher in less dense development. Given the higher cost per unit, developers must seek to maximize land profit by building larger units that may be beyond the means of local workers such as firefighters and police personnel.

Dispersed development also often yields a poor balance between tax revenue received versus cost of service provision. For instance, a more traditional development pattern at 7 units per net acre with units priced at $180,000 will have a total value of $1.26 million. At three units per net acre, with housing valued at $300,000 per unit, total value would come to $900,000. But the cost of services for seven units on the same net acre is lower on a per unit basis than for the three units. When multiplied over thousands of acres, this means that the cost of services in a lower density growth pattern is higher for a given change in population because many more acres are used: pipelines become longer, more road length is required, police and fire response is more expensive or requires extra facilities, etc. While revenue from sales tax would be the same in either scenario, given average incomes and growth of 40,000 persons, the cost to the City of providing roads and improvements for auto-oriented retail and services is higher for the same reasons even though the return in taxes is constant.

Options for seniors are not typically as good in dispersed development patterns. According to the National Association of Homebuilders, as people age they value proximity to retail services and medical facilities so that the use of the car is not an automatic necessity. As people live longer, a growing portion of the population will be unable to sustain an auto-oriented lifestyle.

An auto-oriented lifestyle leads directly to an issue much discussed in interviews: walkability. Many people are interested in living in places that have a safe, and interesting pedestrian experience. Dispersed development patterns often fail to satisfy this requirement for several reasons. First, low density and single use areas preclude the development of local retail and services that

Projected Additional Population		40,000
Total Units at 2.19 p/hh		18,265
Average Units per Net Acre		5.01
Total Net Acres Residential		3,647
Roads	20%	729
Parks	15%	547
Total Acres of Residential with Roads and Parks		**4,924**
Employment/Commercial Space		123
Parking for Employment		81
Roads and Access for Employment (other than parking)		20
Land Placeholder for Schools and Churches		300
Total Acreage for All Use		**5,447**

Table 3:
Development Scenario
Based on Town Center Patterns

are pedestrian accessible; there are too few rooftops to support retail. Second, safety becomes an issue where large arterials are required to move increased traffic produced by dispersed development. Finally, auto orientation tends to produce large buildings set far apart with deep setbacks for parking, making for a far less interesting and enjoyable pedestrian experience.

What if Fayetteville Plans and Builds As It Used To?

Using patterns once traditional here, Fayetteville could potentially accommodate its future growth on 5,400 to 5,500 acres of land as shown in Table 3 (left). To do so requires a net density of five residential units per acre, not dissimilar to Fayetteville's historic neighborhoods. The key to such development is to start with the neighborhood as a unit. The term neighborhood is meant as a complete set of community amenities including a mix and range of housing, retail and services within a walkable environment. This does not preclude large-lot development; it instead assures that large-lot is not the only development. A seamless connection between residents and services ensures that developers can build retail and services at a higher density with fewer dedicated parking spaces.

With retail and services in a walkable, but still auto-accessible environment, strip development with high arterial traffic counts is not necessary to ensure retail support. While traffic moves more slowly (22 miles per hour compared to 35 miles per hour or greater on a typical arterial)[2], drivers can see smaller shop fronts, and on-street parking helps meet parking needs while increasing pedestrian safety. Closely clustered shops and services encourage walking by creating interesting destinations to meet people, and allow sufficient aggregations of retail and services to achieve economic utility for consumers. Auto trips per household decline as fewer car trips are necessary for everyday needs.

The ability of a developer to mix unit sizes on small to large parcels allows the creation of workforce housing in good neighborhoods by varying unit size and lot size and, at the same time, increases land profit. Because of compact form, tax revenues per acre of land used increase in relation to the cost of services provided by the city. An analysis by the Fayetteville Economic Development Council in Table 4 demonstrates the differences in value produced by traditional mixed-use development versus a standard subdivision development. A mixed-use development generates more land value per acre than a high-dollar subdivision, promoting a commerical and housing balance and land conservation.

[2] This is particularly true for retail, where nationally strip sales per s residential. Thus the same volume of sales requires more square

	Bellafont North (Recent Mixed-Use Development Approved by Planning Commission)	Low Density & Intensity Subdivision
Acreage	26	26
Property	$200,000,000 (Commercial and residential mix)	$26,000,000 (One $1,000,000 home per acre)
Dollars Generated for Schools	$1,768,000 per year	$229,840
Property Tax for the City (Yield Per Acre)	$68,000	$15,120
Sales Tax (Yield Per Acre)	$38,462	None

Source: Fayetteville Economic Development Council

Table 4: Traditional Neighborhood Development Adds Greater Value than the Typical Subdivision

Added Population	40,000
New Households at size of 2.19	18,265
2005 Average Income	$53,014
Total Added Household Income	$968,292,237
All Consumer Spending 2005 (%)	40.79%
Spending By New Population	$394,977,709
*SF Supported at Sales Per SF $350 Average	1,128,508

*Square Footage (SF)

Table 5: Future Retail Spending and Space Supported

Support for transit is enhanced by providing central locations for transit within walking distance of higher populations. Options for seniors moving from larger properties are increased without needing development that isolates them from the community. With good neighborhood structure, seniors would be able to meet most of their needs through walking and would also be meeting and interacting with the local residents on a regular basis ensuring a higher degree of personal safety. Additionally, neighborhood centers can offer employment space for businesses that value working environments with nearby services. Finally, the use of less land allows many more options for the preservation of Fayetteville's natural setting, one of the city's defining characteristics.

Demand for Retail Caused by Growth

One of the issues in Fayetteville is the health of the retail environment versus offerings in Rogers and Springdale. To understand this issue, Urban Advisors examined current consumer spending and income trends to understand the future need for space. The result of this analysis is shown in Table 5 (left).

The figures in the table assume that all demand is based only upon population growth and not upon possible changes in income, and that shopping will continue to be captured at current locations. It is unlikely that all of the space need projected will be built in Fayetteville. The capture of space depends on two factors: the proximity of population to the retail outlets, and the economic utility of the location to consumers. Nevertheless, there is enough demand from growth to support new retail concentrations without harming existing business.

Change in Employment

While there is no crystal ball that can predict the changes in employment we may see by 2025, Urban Advisors reviewed forecasts for the region from the Arkansas Department of Workforce Services and trended potential 2025 employment based on regional share and current trends. There are no projections available for Fayetteville as a jurisdiction. To predict Fayetteville employment, a regional share based on year 2000 census numbers was used. The results are shown in Chart 1 and Table 6 (next page) as a base case scenario to determine demand for space. The base case was discussed with experts at the University of Arkansas Center for Business and Economic Research at the Sam Walton School of Business to verify that the trends and results agreed with local knowledge of the local economy.

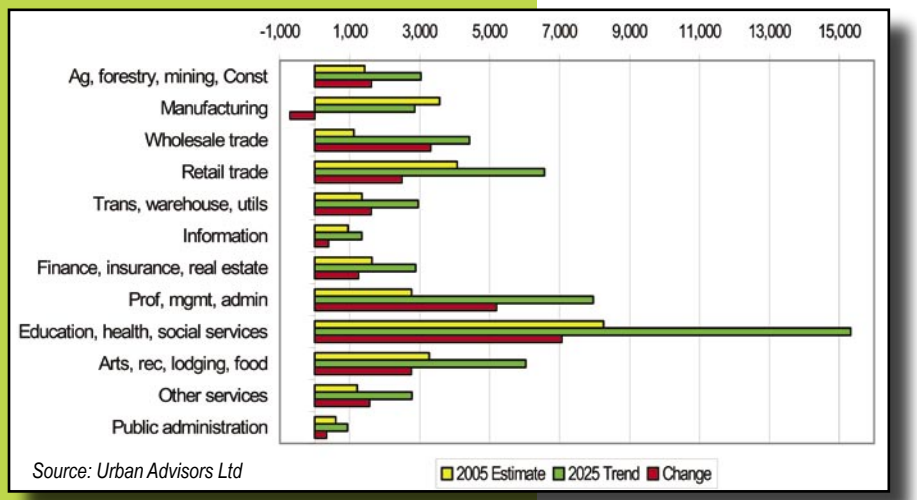

Chart 1:
Base Case Employment Scenario

2025 Additional Employment	Change from 2005	SF/Per Employee	Building Space
Ag, forestry, mining, Const	1,613	25	40,330
Manufacturing	-707	NA	
Wholesale trade	3,310	450	1,489,310
Retail trade(1/2 in Mixed Use)	2,491	NA	846,381
Trans, warehouse, utils	1,609	550	885,161
Information	388	200	77,600
Finance, insurance, real estate	1,248	200	249,527
Prof, mgmt, admin	5,196	200	1,039,265
Education, health, social services	7,067	400	2,826,794
Arts, Recreation, lodging, food	2,762	350	966,567
Other services	1,563	350	547,157
Public administration	334	250	83,515
Total	**26,874**	**337**	**9,051,608**

Source: Urban Advisors Ltd

Table 6:
Employment Space Need in Base Case

The base indicates that, should present trends continue, Fayetteville may add almost 27,000 jobs. The majority of employment growth will be in health and education services followed by professional services, wholesale trade, retail trade, and entertainment, lodging and food services.

The space needed for these uses is shown in Table 6 (left). While every attempt has been made to make the base case as realistic as possible, it must be remembered that *this is a scenario for estimating land use and not a blueprint for the future economic development of the City.* Twenty years ago, for example, no one had any idea of the impact that would be produced by combining WalMart marketing expertise with a high technology approach to supply chain management; the results have changed Northwest Arkansas dramatically.

Economic Impact on Fayetteville School District

One indicator of the economic effect on the school district is the balance of commercial property and residential property. This analysis examines the balance between commercial and residential produced by City Plan 2025, as opposed to what is likely without planning. Currently, the school district generally receives more net revenue from a commercial square foot than a residential square foot because commercial properties do not add school children to the system. The cap on reappraisal for commercial property is also 10 percent versus 5 percent for residential development. City Plan 2025 policy recommendations target commercial growth within the City boundaries by making complete neighborhoods the standard, ensuring that commercial development accompanies residential development.

Representative values for 2005 and 2025 are shown in the table to the left (values in 2005 dollars).[1] As Table 7 illustrates, while the ratio of commercial value to residential value with reference to total value decreases slightly between 2005 and 2025 based upon the plan proposed (as it must when more households are formed with fewer persons per household), the balance remains essentially the same.[2] This balance is maintained because the pattern of development is expected to increase local capture of dollars and employment, concentrating the spending of income and locating of jobs in Fayetteville. If the current development practice of standalone residential subdivisions is followed, Fayetteville is far less likely to capture the retail, services, and employment. The plan places employment centers and retail and services in a series of compact town centers, which is aimed at preventing the spread of dollars outside the City jurisdiction that would likely take place under a scenario where the City does not pro-actively respond to its regional competition. By capturing a greater proportion of commercial space from the region than would otherwise occur, the plan provides a reasonable balance of public funding for the school district.

Values in Fayetteville (in millions)	Land	Improvements	Total	% of Total
Commercial 2005	$ 464	$ 1,077	$ 1,542	39%
Residential 2005	$ 601	$ 1,811	$ 2,412	61%
Total Value	$ 1,065	$ 2,888	$ 3,953	
Added Commercial 2025			$ 1,583	
Added Residential 2025			$ 3,319	
Added 2025 Value			$ 4,901	
All 2025 Commercial			$ 3,124	35%
All 2025 Residential			$ 5,730	65%
Total 2025 Value			$ 8,855	

Table 7:
Property Value in Fayetteville

[1] A The value of what is to be built in the future is much higher than the value of existing stock because all that is built from today forward must be built at today's prices and is therefore more expensive than the average cost and value of stock existing in Fayetteville, which was built in the past at lower prices; the change is not because everything new built will be especially expensive.

[2] Household size has decreased in Fayetteville to 2.19 persons per household in 2005, and this trend is expected to continue. As a consequence, the number of units per population will be higher than in the past (i.e. fewer people in more units). In any city with decreasing household size, residential value must, as a mathematical necessity, rise as a proportion of total value of all real estate compared to the past.