



Bonham Housing Action Plan

Market Analysis Current Conditions Statistical Profile

Produced for the Bonham Economic Development Corporation

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By

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Bonham Housing Action Plan

Market Forecasts and Financial Feasibility

I. Introduction

The Bonham Housing Action Plan (BHAP) is being built in three phases. Phase I involves two installments. The first installment developed a broad community and market profile for Bonham and Fannin County and demonstrated the favorable demographic and employment conditions for housing investment. This report is the second installment of Phase I and includes a single-family housing forecast of demand and a multi-family financial feasibility model.

Based on employment, population and household forecasts for Fannin County and the City of Bonham, the city should be able to support the delivery of 48 single-family housing units annually – at prevailing mortgage interest rates. This level of housing is projected through 2028 – a ten-year forecast. This count is a mix of housing types including: townhouses, duplexes, patio homes and larger single-family homes. Even with significant increases in construction costs, the household income ranges projected for Bonham over the next decade should be able to absorb these units.

As part of this market analysis, this report presents model results from a hypothetical apartment project in Bonham. Based on prevailing construction costs, financing conditions (interest rates) and the performance of new apartment complexes in nearby Grayson County, the hypothetical apartment project would be a good financial investment for a developer intending to maintain the project long-term. This hypothetical example is only intended to demonstrate the model. The multi-family model will play an important role in the BHAP implementation plan. The City of Bonham will be able to take developer project information and model the potential feasibility of the project. This can help inform any decisions regarding economic incentives or other support for the project.

II. Employment, Population and Household Forecasts

Residential real estate market projections rest on employment and demographic forecasts. These two forecasts provide baseline estimates of households that will be in the market for new housing. Using the employment forecast and the demographic forecast together give a double check on the results.

Employment Forecast

The Bonham employment forecast covers 2018 to 2028 (current year plus 10.) The forecast was based on individual industry-level projections. Industry projections were made using the past five-year compound annual growth rate (CAGR.) In some cases, these growth rates have been adjusted to account for trends in the larger Texas economy and special local circumstances. The result is a best forecast for each industry. Details of the forecast are included in the following table.

Bonham Industry-Level Employment Forecast				
Industry	2017	5-Year Change	History 5-Year CAGR	Forecast
Agriculture & Natural Resources	122	27	5.1%	5.1%
Mining	62	22	9.2%	5.0%
Construction	358	182	15.3%	10.0%
Manufacturing	724	231	8.0%	5.0%
Utilities	64	(6)	-1.8%	0.0%
Wholesale	230	29	2.7%	2.7%
Retail	984	165	3.7%	3.7%
Transportation & Warehousing	75	(28)	-6.1%	0.0%
Information	27	(4)	-2.7%	0.0%
Finance & Insurance	241	(26)	-2.0%	0.0%
Real Estate, Rental & Leasing	74	31	11.5%	5.7%
Professional & Technical Services	118	15	2.8%	2.8%
Management of Companies	-	-	NA	0.0%
Admin & Waste Services	91	(32)	-5.8%	0.0%
Educational Services	-	-	NA	0.0%
Health & Social Services	864	(26)	-0.6%	0.0%
Arts, Entertainment & Rec	63	33	16.0%	10.0%
Accommodation & Food Services	493	42	1.8%	2.0%
Other Services	138	(12)	-1.7%	0.0%
Unclassified	5	5	5.0%	5.0%
Total	4,733	648	3.0%	3.1%

CAGR=compound annual growth rate. Source: Axianomics, LLC analysis of Texas Workforce Commission QCEW data.

Bonham has seen job losses in many industries in the last five years. This forecast takes a more optimistic assumption in these industries and sets their forecast rate at zero percent change. This is reasonable given the continued northward growth of the Dallas-Fort Worth MSA and the short-term stimulus in the local area from construction of the Lower Bois D'arc Creek reservoir. This optimism is

offset a bit by assuming more modest growth in some other industries that have grown quickly. This is based on a risk assessment that the current economic expansion will likely end sometime during the next ten years. Bonham’s annual employment levels by industry are presented in the following table.

Bonham Industry-Level Annual Forecasts (2018 to 2028)											
Industry	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Agriculture & Natural Resources	129	136	143	151	159	168	175	182	190	198	206
Mining	66	70	74	78	82	87	91	95	99	103	107
Construction	394	434	478	526	579	637	685	737	793	853	917
Manufacturing	761	800	840	882	927	974	1,011	1,049	1,089	1,130	1,173
Utilities	64	64	64	64	64	64	64	64	64	64	64
Wholesale	237	244	251	258	266	274	280	286	292	298	305
Retail	1,021	1,060	1,100	1,142	1,185	1,230	1,265	1,301	1,338	1,376	1,415
Transportation & Warehousing	75	75	75	75	75	75	75	75	75	75	75
Information	27	27	27	27	27	27	27	27	27	27	27
Finance & Insurance	241	241	241	241	241	241	241	241	241	241	241
Real Estate, Rental & Leasing	79	84	89	95	101	107	112	117	123	129	135
Professional & Technical Services	122	126	130	134	138	142	145	148	152	156	160
Management of Companies	-	-	-	-	-	-	-	-	-	-	-
Admin & Waste Services	91	91	91	91	91	91	91	91	91	91	91
Educational Services	-	-	-	-	-	-	-	-	-	-	-
Health & Social Services	864	864	864	864	864	864	864	864	864	864	864
Arts, Entertainment & Rec	70	77	85	94	104	115	124	134	145	156	168
Accommodation & Food Services	503	514	525	536	547	558	567	576	585	594	603
Other Services	138	138	138	138	138	138	138	138	138	138	138
Unclassified	6	7	8	9	10	11	12	13	14	15	16
Total	4,888	5,052	5,223	5,405	5,598	5,803	5,967	6,138	6,320	6,508	6,705

The annual forecast results show that, under these assumptions, Bonham can expect to see its job base grow from 4,888 this year to 6,705 in 2028. This represents a very strong foundation for housing demand in the coming decade.

Estimating New Housing from Employment

We can make a quick and simple estimate of household growth using employment projections. This method uses the ratio of job creation to new housing units in recent years. The rule of thumb based on historical patterns is that for every 3.1 new jobs we would expect the market to create a new single family housing unit.

If we apply this rule of thumb to the Bonham housing forecast, we get the following back of the envelope projection of single-family housing demand over the next decade.

Simple Single-Family Housing Demand Forecast (Annual Units 2018 to 2028)											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Total Jobs	4,888	5,052	5,223	5,405	5,598	5,803	5,967	6,138	6,320	6,508	6,705
Net Jobs	155	164	171	182	193	205	164	171	182	188	197
SF Housing Units	50	53	55	59	62	66	53	55	59	61	64

Source: Axianomics, LLC

Based on this rule-of-thumb approach we would expect Bonham to be able to support the creation of about 60 new single-family housing units annually. This simple housing forecast is a good reality check on the more detailed demographically based forecast in the following section.

Population Forecast

Bonham’s population forecasts start with the models run by the Texas Demographic Center (TDC) for Fannin County. The TDC produces three forecasts based on low, medium and high net migration assumptions. The net migration assumption reflects the historic flow of people into and out of a county. It includes domestic and international migration. The middle forecast assumes the historic trend will continue. The low and high forecast assumes less and more migration, respectively. To better inform our assumptions about housing demand, the following tables show forecast results by age categories. Different household ages are in the market for different housing types.

Fannin County Population Forecast (Low Migration Assumptions)						
Year	18-24	25-44	45-64	65+	Total	Change
2010	2,801	8,419	9,427	5,765	33,915	
2016	3,188	8,139	9,117	6,582	34,217	
2017	3,077	8,269	9,014	6,705	34,277	60
2018	3,082	8,373	8,897	6,832	34,352	75
2019	3,031	8,454	8,814	6,944	34,412	60
2020	2,996	8,574	8,693	7,033	34,480	68
2021	3,003	8,656	8,521	7,191	34,554	74
2022	3,007	8,732	8,375	7,326	34,623	69
2023	3,004	8,850	8,213	7,456	34,690	67
2024	3,033	8,878	8,075	7,594	34,747	57
2025	2,993	9,001	7,906	7,743	34,809	62
2026	2,946	9,029	7,841	7,835	34,868	59
2027	2,958	9,124	7,668	7,939	34,914	46
2028	2,917	9,167	7,588	8,020	34,955	41

Source: Texas Demographic Center

Fannin County Population Forecast (Medium (Historic) Migration Assumptions)						
Year	18-24	25-44	45-64	65+	Total	Change
2010	2,801	8,419	9,427	5,765	33,915	
2016	3,281	8,077	9,581	6,862	35,176	
2017	3,186	8,197	9,547	7,055	35,404	228
2018	3,222	8,288	9,482	7,251	35,635	231
2019	3,199	8,373	9,440	7,439	35,851	216
2020	3,180	8,484	9,377	7,600	36,070	219
2021	3,213	8,571	9,248	7,833	36,308	238
2022	3,236	8,643	9,146	8,049	36,539	231
2023	3,254	8,766	9,014	8,271	36,776	237
2024	3,304	8,803	8,886	8,497	36,980	204
2025	3,289	8,928	8,727	8,740	37,195	215
2026	3,267	8,987	8,656	8,929	37,421	226
2027	3,285	9,090	8,493	9,138	37,624	203
2028	3,269	9,187	8,386	9,309	37,822	198

Source: Texas Demographic Center

Fannin County Population Forecast (High Migration Assumptions)						
Year	18-24	25-44	45-64	65+	Total	Change
2010	2,801	8,419	9,427	5,765	33,915	
2016	3,355	7,904	10,091	7,182	36,169	
2017	3,290	8,003	10,130	7,436	36,571	402
2018	3,340	8,069	10,122	7,698	36,962	391
2019	3,341	8,127	10,143	7,964	37,342	380
2020	3,353	8,211	10,131	8,202	37,727	385
2021	3,411	8,276	10,050	8,514	38,124	397
2022	3,472	8,332	9,972	8,833	38,515	391
2023	3,518	8,442	9,863	9,144	38,893	378
2024	3,613	8,476	9,763	9,472	39,303	410
2025	3,644	8,603	9,584	9,839	39,698	395
2026	3,663	8,688	9,480	10,151	40,093	395
2027	3,723	8,830	9,292	10,465	40,484	391
2028	3,741	8,971	9,147	10,753	40,873	389

Source: Texas Demographic Center

These population forecasts indicate an average annual increase of 62 people for the low migration assumption, 221 for the historic migration assumption and 392 for the high migration assumption. Given Bonham has entered a faster growth period in recent years, the most reasonable forecasts are between the middle and high forecasts.

Converting Population Growth into Household Growth Estimates

These population forecasts are here converted into household projections. Fannin County and Bonham have an average household size of 2.5. Simply dividing the population figures by this average yields a household count. Before this step, however, this population projection will be adjusted for the group quarters population housed in the two state correctional facilities in Bonham. Historically, these facilities have housed about 2,000 inmates. Accordingly, the total population counts in the previous tables are reduced by 2,000 individuals giving the following adjusted total population counts:

Fannin County Population Forecasts (Adjusted for Group Quarters)			
Year	Low Forecast	Medium Forecast	High Forecast
2010	31,915	31,915	31,915
2016	32,217	33,176	34,169
2017	32,277	33,404	34,571
2018	32,352	33,635	34,962
2019	32,412	33,851	35,342
2020	32,480	34,070	35,727
2021	32,554	34,308	36,124
2022	32,623	34,539	36,515
2023	32,690	34,776	36,893
2024	32,747	34,980	37,303
2025	32,809	35,195	37,698
2026	32,868	35,421	38,093
2027	32,914	35,624	38,484
2028	32,955	35,822	38,873

Source: Axianomics, LLC analysis of Texas Demographic Center and Texas Department of Criminal Justice data.

These population numbers, without the prison population, are now converted into household estimates using the historic 2.5 persons per household in the following table:

Fannin County Household Forecast (Number of Households)			
Year	Low Forecast	Medium Forecast	High Forecast
2010	12,766	12,766	12,766
2016	12,887	13,270	13,668
2017	12,911	13,362	13,828
2018	12,941	13,454	13,985
2019	12,965	13,540	14,137
2020	12,992	13,628	14,291
2021	13,022	13,723	14,450
2022	13,049	13,816	14,606
2023	13,076	13,910	14,757
2024	13,099	13,992	14,921
2025	13,124	14,078	15,079
2026	13,147	14,168	15,237
2027	13,166	14,250	15,394
2028	13,182	14,329	15,549

Source: Axianomics, LLC analysis of Texas Demographic Center and Census Bureau Data.

Annual household growth is calculated in the following table. The annual average increase in households in the low migration forecast is 25, for the medium migration assumption it is 88 and for the high migration assumption it is 157. These projected household numbers imply a strong and consistent demand for new housing in Bonham. Bonham’s potential to capture these households depends on the details of the BHAP implementation strategy.

Fannin County Household Growth Forecast (Number of Households)			
Year	Low Forecast	Medium Forecast	High Forecast
2010			
2016			
2017	24	91	161
2018	30	92	156
2019	24	86	152
2020	27	88	154
2021	30	95	159
2022	28	92	156
2023	27	95	151
2024	23	82	164
2025	25	86	158
2026	24	90	158
2027	18	81	156
2028	16	79	156

Source: Axianomics, LLC analysis of Texas Demographic Center and Census Bureau Data.

Household Type Forecasts

For housing market analysis, the variety of household types should be simplified into two categories. These are married family households and all others. Historically, married households have a home ownership rate of 80 percent. The remaining 20 percent are renters. For all other household categories, home ownership is 50 percent. These statistics are used to segment the local housing markets into those in the single-family market segment and those in the apartment rental segment. The medium or high migration forecasts imply strong demand for new single-family homes in Fannin County

Fannin County Single Family Housing Market Segment (Annual New Households)			
Year	Low Forecast	Medium Forecast	High Forecast
2010			
2016			
2017	15	57	101
2018	19	58	98
2019	15	54	96
2020	17	55	97
2021	19	60	100
2022	17	58	98
2023	17	60	95
2024	14	51	103
2025	16	54	99
2026	15	57	99
2027	12	51	98
2028	10	50	98

Source: Axianomics, LLC analysis of Texas Demographic Center and Census Bureau Data.

The apartment rental market in Fannin County is simply the remaining household growth not in the single-family segment. The following table presents the growth in households most likely to find themselves in the apartment rental market. These numbers are not as large as the single-family segment. There is often some overlap between the two segments, especially at middle-income levels where a household may consider buying or renting. In addition, since the Great Recession, home ownership has decreased and the traditional division between owners and renters may be changing.

Fannin County Apartment Rental Housing Market Segment (Annual New Households)			
Year	Low Forecast	Medium Forecast	High Forecast
2010			
2016			
2017	9	34	60
2018	11	34	58
2019	9	32	56
2020	10	32	57
2021	11	35	59
2022	10	34	58
2023	10	35	56
2024	8	30	61
2025	9	32	59
2026	9	34	59
2027	7	30	58
2028	6	29	58

Source: Axianomics, LLC analysis of Texas Demographic Center and Census Bureau Data.

III Single-Family Housing Unit Demand Forecasts

Estimating Single Family Market Segment Income Categories

The single-family housing market can be further segmented into many types of housing products. Affordability is often the most important factor in determining the kind of home a household will choose. The following table allocates single-family market households to income categories using Bonham’s current household characteristics.

Income Bracket (in \$1,000s)	Share of Households	Low Forecast	Medium Forecast	High Forecast
LT 10K	12%	2	6	11
10-14.9K	7%	1	4	7
15-24.9K	12%	2	6	12
25-34.9K	15%	2	8	15
35-49.9K	14%	2	8	14
50-74.9K	13%	2	7	13
75-99.9K	11%	2	6	11
100-149.9K	10%	1	5	9
150-199.9K	3%	0	2	3
200K +	3%	0	1	3
Total Households	100%	15	55	99

Source: Axianomics, LLC analysis of Texas Demographic Center and Census Bureau Data.

Housing Product Types

Texas housing markets are producing a greater variety of housing types. This variety can help households find a better fit in the housing market. Based on construction trends in North Texas housing markets, the following table describes the housing market types that will be evaluated in this study. A demand forecast will be calculated for each housing product type.

Two types of attached single family units are included, they are town houses (sometimes called row houses) and duplexes. A townhouse/rowhouse includes three or more units separated by shared, vertical walls. In Texas, these are often delivered in five to six-unit buildings with the buildings running along the depth of a typical residential lot. Townhouse units may have their own parcel, or all the units in the building may be on a single parcel. Duplex houses may be adjacent door to door or be over/under form.

There are five detached single-family types included in the analysis and are referred to as Detached 1 to Detached 5. In general, these differ by number of rooms and square feet. Detached 1 is designed as a so-called patio home. This is a small house on a small lot. It is similar in size here to a duplex unit and some potential customers may be in the market for either of these types. The following table describes the type and count of rooms in each housing product.

Bonham Potential Single-Family Home Products (Number and Type of Rooms)							
Room Type	Town / Rowhouse	Duplex	Detached 1 (Patio)	Detached 2	Detached 3	Detached 4	Detached 5
Master Bed Room	1	1	1	1	1	1	1
Master Bath	1	1	1	1	1	1	1
Other Bed Rooms	2	2	1	2	2	3	3
Other Baths	1	1	0	1	1	1	2
Half Bath	0	0	1	0	0	1	0
Kitchen/Breakfast	1	1	1	1	1	1	1
Great Room	1	1	1	1	1	1	1
Formal Dining	0	0	0	0	1	1	1

Source: Axianomics, LLC

Room sizes and lot sizes vary by house type. The following table identifies room sizes, total unit size and lot size.

Bonham Potential Single-Family Home Products (Room and Unit Size)							
Room Type	Town / Rowhouse	Duplex	Detached 1 (Patio)	Detached 2	Detached 3	Detached 4	Detached 5
Master Bed Room	231	231	231	271	271	329	411
Master Bath	115	115	115	144	144	144	210
Other BR	220	220	110	264	264	317	432
Other Bath	42	42	-	42	42	42	84
Half Bath	-	-	20	-	-	20	-
Kitchen/Breakfast	174	193	154	220	248	248	338
Great Room	365	487	487	481	481	544	544
Formal Dining	0	0	0	0	196	225	281
Formal Living	0	0	0	0	0	0	0
Other	197	295	393	591	591	862	1,077
Unit Size (sq.ft.)	1,343	1,583	1,510	2,013	2,237	2,730	3,377
Lot Size (sq.ft. per unit)	1,941	2,200	2,300	3,000	5,000	7,000	9,000

Source: Axianomics, LLC

Unit sizes vary from the small townhouse unit at 1,342 square feet to the Detached 5 at 3,377 square feet. The duplex unit and the Detached 1 type are similar at around 1,500 square feet and represent good entry-level or empty nest downsize home products.

Estimating Demand by Housing Product Segment

The earlier sections demonstrated the total potential household customers for single-family homes and rental apartments. Ultimately, however, demand will depend on the ability of these families to make

mortgage payments and pay rent. Since Bonham has a mix of household income levels, the following analysis refined the total numbers into demand for specific product segments.

This analysis assumes that households will chose the largest housing product that they can afford given these assumptions:

1. Household gross income is set as the midpoint of its income bracket.
2. Disposable income is defined as 70 percent of household income.
3. Maximum acceptable housing expenses (including mortgage, insurance and taxes) is 30 percent of disposable income.
4. Fifty percent of housing expenses are for the mortgage.

For example, for the \$100,000 to \$149,999 income bracket, we arrive at a maximum monthly mortgage payment of \$1,562 as follows:

Quantity (Step)	Result
Income Bracket	\$100,000 to \$149,999
Household Income (midpoint of bracket)	\$ 124,950
Disposable Income (0.7 X Household Income)	\$ 87,465
Maximum Housing Budget (0.3 X Disposable Income)	\$ 3,124
Maximum Mortgage Payment (0.5 X Maximum Housing Budget)	\$ 1,562

This calculation assumes a mortgage rate of 4.5 percent and a ten percent down payment. This step is repeated for each income category. The entire analysis is repeated for a range of mortgage interest rates (from 3.5% to 6.0%) and down payment amounts (5%, 10% and 20%). The resulting maximum mortgage payments are matched with the best-fit house type.

Construction costs have been increasing dramatically in recent years. Using the latest cost trends from a variety of sources, including builder interviews, the following average construction costs were developed for each housing product. The increasing per square foot costs reflect the general practice of higher material and finish-out costs for larger homes. Total costs for each home are also shown.

Estimated Housing Costs (per sq.ft. and unit total)							
	Town / Rowhouse	Duplex	Detached 1 (Patio)	Detached 2	Detached 3	Detached 4	Detached 5
Cost Per Sq.Ft.	\$ 142.22	\$ 141.95	\$ 142.61	\$ 142.45	\$ 146.18	\$ 147.82	\$ 148.32
Total Cost	\$ 191,071	\$ 224,671	\$ 215,404	\$ 286,755	\$ 326,928	\$ 403,483	\$ 500,949

The following tables present the proposed forecast of Bonham housing demand assuming Bonham can capture fifty percent of Fannin County house construction. This is the capture rate that has prevailed in recent years. Note that as interest rates increase there are fewer units of each home projected. If we assume higher or lower down payment rates, there will be a decrease or increase in these numbers respectively.

Annual Housing Demand in Bonham (By Product Type at Various Mortgage Interest Rates)							
These Statistics Have Been Replaced by Updates in the Statistical and Market Analysis Summary PowerPoint.							
Interest Rate	Town / Rowhouse	Duplex / Detached 1 (Patio)	Detached 2	Detached 3	Detached 4	Detached 5	Total Units
3.5%	14	12	10	10	4	2	52
4.0%	14	12	10	9	4	2	51
4.5%	14	12	9	8	3	2	48
5.0%	12	11	8	8	3	1	43
5.5%	12	11	7	7	2	1	40
6.0%	12	10	7	6	2	1	38

Depending on prevailing interest rates, Bonham should be able to support construction of between 38 and 52 housing units annually over the next decade. This represents between 380 and 520 total single-family housing units in ten years. These results represent an assumption that the City of Bonham can capture 50 percent of housing demand in Fannin County. As a reality check to these modeled results, we should recall the simple rule-of-thumb housing demand estimate we produced earlier. Based on forecasted job growth we concluded that Bonham can support between 50 and 66 new single-family home units annually. This range is slightly higher than the more detailed calculations, thus we have some confidence that the detailed numbers are reasonable.

These are the results of the simple mathematics of the housing market analysis discussed above. Realizing these results may depend on the City taking a proactive approach to attract developer interest, facilitate the building process and creating an aggressive marketing plan to attract families. In addition, sustaining this forecast may depend on upgrades to City services or infrastructure.

IV. Multi-Family Financial Feasibility Analysis

The following sections present the results of a apartment demand analysis and the results of a multi-family financial feasibility model. The apartment demand results demonstrate the potential market for apartment units in Bonham. The feasibility model is intended to be used by the City of Bonham to understand the potential for apartment development in the community and to evaluate developer proposals. The results presented should not be interpreted as definitive for any actual project. The model results presented here are based on prevailing apartment conditions in North Texas. Specific projects proposed in Bonham may face different rents, interest rates, construction costs and other key variables.

Estimating Apartment Demand

Historically, apartment absorption had a loose relationship to job creation. The results vary from market to market. In North Texas, the historic average has been one apartment unit absorbed for each 4.6 jobs. This is a much higher impact than the national average of one new apartment absorbed per 9.8 jobs. Still, we will use this simple metric as a quick check on the more detailed analysis later in the report. Based on Bonham’s future job growth we would expect demand for apartments to be about 13 units per year. This is a relatively small demand and other factors should be considered by prospective developers. Some of these factors include:

- The lack of new apartment construction in Bonham for many years (pent up demand)
- The high home rental rate in Bonham (who may shift to newer apartments)
- A pending construction boom from the development of the Lower Bois D’Arc Creek reservoir

Projecting apartment demand needs to consider affordability and household income potential to pay rent. Based on household growth projections the estimated households in the market for rental apartments are shown in the following table. These are total growth numbers and do not yet reflect final demand for apartments. The high household forecast is not unreasonable for Bonham given recent growth rates. This higher rate of growth will need to prevail to provide a minimum level of potential apartment demand.

Rental Apartment Market Segment Household Growth							
	LT 25K	25-34.9K	35-49.9K	50-74.9K	75-99.9K	GT 100K	Total Households
Household Income	\$ 16,200	\$ 29,950	\$ 42,450	\$ 62,450	\$ 87,450	\$ 157,772	
Disposable Income	\$ 11,340	\$ 20,965	\$ 29,715	\$ 43,715	\$ 61,215	\$ 110,440	
Maximum Rental Payment	\$ 312	\$ 577	\$ 817	\$ 1,202	\$ 1,683	\$ 3,037	
Share of Households	30%	15%	14%	13%	11%	15%	
Annual Households (Low)	3	1	1	1	1	1	9
Annual Households (Medium)	10	5	5	4	4	5	33
Annual Households (High)	18	9	8	8	6	9	58

Multi-family Financial Feasibility

THE FOLLOWING FINANCIAL ANALYSIS IS ON A HYPOTHETICAL APARTMENT PROJECT. DO NOT GENERALIZE THESE ASSUMPTIONS OR RESULTS TO ANY POTENTIAL OR EXISTING DEVELOPMENT. FOR INFORMATION PURPOSES ONLY.

Bonham’s housing strategy may need to include efforts to support a new apartment complex. The following analysis presents the results of a financial feasibility study for constructing a hypothetical 144-unit multi-family development. This hypothetical project is based on recent completed, under construction and planned projects in adjacent Grayson County. Grayson County is a larger market than Fannin County and the new multi-family projects are in Denison, a city that has been actively promoting housing investment. Still, these represent the closest benchmarks available.

To help Bonham evaluate the potential for apartment development, Axianomics, LLC created a multi-family financial feasibility model. The City of Bonham can use this model to evaluate the financial return on a new development. The following sections summarize the results of a multi-family development that is similar to the projects being built in Denison Texas. The tables below are from the Excel spreadsheet model and in that program the key assumptions can be changed to evaluate many different scenarios.

The development program calls for 113,380 square feet of residential construction and 3,600 square feet of common facilities such as rental office, clubhouse, mail, laundry and vending. The site includes 7.29 acres and results in almost twenty units per acre. Generous parking allowances are included – more than one space per bedroom.

Apartment Development Program

Hypothetical Bonham Multi-family Project (Project Assumptions)	
Development Program	
Units	144
Land Requirements	
Common Facilities (25 sq.ft/unit)	3,600
Residential Buildings	113,380
Parking (303 sq.ft. per bedroom)	110,292
Open Space / Landscape	90,909
Total Land Sq Ft	318,181
Total Land Acres	7.29
Units Per Acre	19.75
Construction Duration (months)	18
First Units Lease (months after const. start)	15
Months to stabilization	6
Share of Units on 6 mos leases (rest = 12)	25%
First Lease Average Concessions	\$500
Annual Rent Increase	3.0%
Unit Loss Rate	3.5%
Other Revenue (per sq.ft.)	\$ 0.75
Other Revenue Growth Rate	5.0%
Discount Rate	4.0%

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The mix of unit types and rooms by unit are described in the following table. The proposed development includes one-bedroom, two-bedroom and three-bedroom units. Unit sizes range from 556 square feet to 1033 square feet. The blended (weighted average) unit size is 787 square feet.

Hypothetical Bonham Multi-family Project (Unit Description / Mix)							
Unit Description / Mix							
Apartment Type	Description	Master BR Count	Other BR Count	Bathrooms	Kitchen/Dining Space	Living Space	Total Space
1	One Bedroom	1	0	1	150	150	556
2	Two Bedroom / One Bath	1	1	1	190	200	767
3	Two Bedroom / Two Bath	1	1	2	190	210	837
4	Three Bedroom	1	2	2	225	250	1033
	Blended / Total						787

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The mix of units proposed for the Bonham project are similar to other North Texas projects. Rental rates are based on prevailing rates at the new developments in Grayson County. Whether Bonham households will support these rates is still an unanswered question. The lack of new apartment housing means there are no real comparable projects in Fannin County. The tremendous success of the new projects in Grayson County, however, hints that there may be demand for such a project.

Hypothetical Bonham Multi-family Project (Unit Description / Mix (cont.))						
Unit Description / Mix						
Apartment Type	Description	Recommended Program	Number of Units	Total Sq.ft.	Proposed Rent Per Sq.Ft	Proposed Rent
1	One Bedroom	25%	36	20,016	\$ 1.37	\$ 762
2	Two Bedroom / One Bath	25%	36	27,612	\$ 1.29	\$ 990
3	Two Bedroom / Two Bath	30%	44	36,828	\$ 1.21	\$ 1,014
4	Three Bedroom	20%	28	28,924	\$ 1.13	\$ 1,170
	Blended / Total	100%	144	113,380	\$ 1.24	\$ 975

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Construction costs have been increasing. These cost increases come from increases in material costs, labor shortages and financing costs (from higher interest rates.) The following table summarizes the construction cost assumptions for the hypothetical project. Like all variables in the model, these can be adjusted as market conditions change. The proposed project includes 116,980 square feet of new construction. Hard construction costs for multi-family are running about \$175 per square foot. Total soft and hard costs for this project come to \$228 per square foot or \$26.7 million.

Hypothetical Bonham Multi-family Project (Construction Budget)

Total Sq Ft	116,980	
Construction Cost Per Sq Ft	\$ 175	
Total Construction Cost	\$20,471,500	
Land Price (Per sq.ft.)	\$ 1.15	
ITEM	Total	Per Sq. Ft.
ACQUISITION	\$365,907.92	\$ 3.13
SITE IMPROVEMENTS	\$ 116,980.00	\$ 1.00
CONSTRUCTION		
Rehabilitation	\$ -	\$ -
New Construction	\$20,471,500	\$ 175.00
Foundation	\$ 1,842,435	\$ 15.75
Walls/Exterior	\$ 2,456,580	\$ 21.00
Roof	\$ 2,047,150	\$ 17.50
Windows & Doors	\$ 1,023,575	\$ 8.75
Interior	\$ 5,117,875	\$ 43.75
Bath & Kitchen	\$ 2,456,580	\$ 21.00
Electrical & Plumbing & HVAC	\$ 5,527,305	\$ 47.25
Parking & Landscape	\$ 110,292	\$ 0.94
Contingency	\$ 1,023,575	\$ 8.75
PROFESSIONAL FEES	\$ 1,637,720	\$ 14.00
CONSTRUCTION SOFT COSTS	1,023,575	\$ 8.75
DEVELOPER FEE	1,433,005	\$ 12.25
RENTUP RESERVES	614,145	\$ 5.25
TOTAL DEVELOPMENT COST	26,686,408	\$ 228.13

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The following chart summarizes revenue and cost projections for the new apartment. The model is set for the apartment to begin leasing in month 15 and to be reach stabilization (95 percent leased) by 22 months after start. Once again, revenue assumptions are based on prevailing rents in nearby Denison apartments. Discounted, net present value net revenue is shown at the bottom of the table.

Hypothetical Bonham Multi-family Project (Operating Model, Select Years)				
	Year 1	Year 2	Year 3	Year 20
Percent Rented	15%	65%	95%	95%
Units Rented	22	94	137	137
Blended Unit Rate	\$ 975	\$ 1,004	\$ 1,035	\$ 1,710
Gross Rental Revenue	\$ 257,452	\$ 1,133,024.49	\$ 1,700,862.62	\$ 2,811,266.75
Losses to Rent (debt, collections, other)	\$ 9,011	\$ 39,656	\$ 59,530	\$ 98,394
Net Rent	\$ 248,442	\$ 1,093,369	\$ 1,641,332	\$ 2,712,872
Other Revenue Growth Factor	\$ 1.00	\$ 1.05	\$ 1.10	\$ 1.95
Other Revenue	\$ 12,991	\$ 58,284	\$ 88,991	\$ 157,758
Total Revenue	\$ 261,433	\$ 1,151,653	\$ 1,730,324	\$ 2,870,630
Discount Factor	1.00	0.96	0.92	0.46
Discounted Net Present Value Total Revenue	\$ 261,433	\$ 1,105,587	\$ 1,594,667	\$ 1,321,693
Cumulative Revenue NPV	\$ 261,433	\$ 1,367,020	\$ 2,961,686	\$ 27,577,641
Operating Costs (per sq.ft.)	\$ 543,204	\$ 559,500	\$ 576,285	\$ 1,165,249
NPV Operating Costs	\$ 543,204	\$ 537,120	\$ 531,104	\$ 536,503
Cumulative NPV Operating Costs	\$ 543,204	\$ 1,080,323	\$ 1,611,427	\$ 10,235,449
Discounted Annual Net Revenue	\$ (281,771)	\$ 568,467	\$ 1,063,563	\$ 785,190
Discounted Cumulative Net Revenue	\$ (281,771)	\$ 286,697	\$ 1,350,259	\$ 17,342,192

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The following table presents the bottom line, twenty-year projection for the project. These results are based on the assumption that the developer of the project will be the manager of the completed community. In this example, total development costs and net operating revenue are compared. Total development costs are \$14.1 million. Net operating revenue is \$17.3 million. This results in a \$3.2 million positive return to the developer. Different assumptions such as different rental rates or cost of capital (interest rates and equity expectations) can dramatically change these results. The benefit of this model, however, is that actual proposed projects can be quickly evaluated. This information can be used to help attract initial developer interest in the Bonham market. During Phase II of the BHAP – creating the implementation plan – can involve evaluating multiple project versions to better understand the most critical assumptions.

Hypothetical Bonham Multi-family Project (20-Year NPV Return)

Present Value of Project (over 20 years)

Development Costs	
Return on Equity (Opportunity relative Tbill)	\$ 783,379
Construction Finance Costs	\$ 1,948,141
Permanent Finance Costs	\$ 11,431,280
Total Development Costs	\$ 14,162,800
Net Operating Revenue	\$ 17,342,192
NPV Total	\$ 3,179,392

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