

**The Economic, Fiscal, and Developmental  
Impacts of the Proposed Lower Bois d'Arc Creek  
Reservoir Project: An Updated Assessment**

*Prepared for:*

**The North Texas Municipal Water District**

*By:*

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## Executive Summary

This report updates the findings of our 2004 analysis of the economic, developmental, and fiscal impacts of the Lower Bois d'Arc Creek reservoir that will be developed by the North Texas Municipal Water District.

- Construction of the dam to impound the proposed Lower Bois d'Arc Creek Reservoir, the intake pump station, and other related expenditures will cost about \$100 million. In addition, construction spending for other related infrastructure in Fannin County, including a water intake pump station, transport pipeline and related facilities will add another \$181 million to local spending for the reservoir. In total, current estimates call for infrastructure spending in Fannin County to be between \$267 million and \$295 million over a four to five year period. Depending on exact expenditures, local economic activity will increase between \$303 million and \$335 million during the construction phase of the reservoir development. This activity will support in the range of 1,600 to over 1,760 person-years of employment with associated salaries and wages of between \$53.6 million and \$59.2 million.
- Including infrastructure development that will occur in Collin County, total water transmission and treatment facilities associated with the Lower Bois d'Arc Creek Reservoir will cost in the range of \$365 million to \$403 million boosting economic activity in Fannin and Collin counties by a combined \$536 million to \$593 million, supporting over 4,000 person-years of employment and paying upwards of \$200 million in salaries and wages.
- After construction of the dam and pipeline is completed, on-going impacts from the operation and maintenance of these infrastructures will support about 20 full-time-equivalent direct and indirect jobs and spur about \$4 million in new economic activity per year.
- Once the lake is impounded, new recreational spending will arrive in Fannin County as visitors come to fish, boat, and participate in other water-recreation activities. These visitors will bring \$16 million to \$21 million in new annual spending to the local economy.
- The lake will also attract many new residents to Fannin County. We estimate that over a 30-year period at least 1,100 new permanent households will be established around the lake. An additional 2,100 residences will likely be built as vacation/weekend/second homes. These new households will be in addition to any other growth projected for Fannin County. The construction of these homes will bring an average of over 133 jobs per year to the local economy over the development period.
- The reservoir will also support new industrial and commercial activities beyond those described in the hospitality industry. Using Texas Water Development Board usage estimates, we project that \$139 million in new economic activity in Fannin County

supporting over 1,600 permanent jobs could be made possible by the availability of a new reliable water resource.

- The pace and quality of development will depend on many market-related factors. One of the most critical factors will be the extent to which counties, cities, and towns adopt well-reasoned development plans to promote quality growth while also ensuring that infrastructure development and publicly-provided services keep pace with new demand. Examples of infrastructures would include such things as electric services, roads, water services, and public safety and other municipal services.
- Spending by new residents in the local economy will increase economic activity in Fannin County by \$67 million to \$74 million each year. Our analysis also suggests that economic activity in the larger region including Fannin, Hunt, Delta, and Lamar counties will rise by as much as \$91 million per year in response to having these new residents living near the proposed reservoir. This activity will support well over 700 permanent jobs paying about \$17 million in annual salaries and wages.
- Once developed, the proposed reservoir will enhance the region's attractiveness as a business location. As a recreational amenity, the lake will enhance the quality of life features of the region, which are an increasingly important factor in business site location decisions.
- Local taxing jurisdictions will enjoy not only substantial temporary gains in revenues from business activities related to construction of the dam, pipelines and related infrastructure, and new housing, they will also see new revenues based on increased property values and spending by visitors and residents. Property taxes on new housing alone will add \$1.9 million to county tax revenues net of any losses due to the lake impoundment and related environmental mitigation. Similarly, net gains in area school district revenues will exceed \$5 million per year at full development. Local taxes on retail sales will generate at least \$290,000 per year with an additional \$175,000 per year provided by hotel occupancy taxes.

**Table ES1**

**Temporary Local Economic Impacts of Construction  
Of the Lower Bois d'Arc Creek Reservoir Dam**

<b>Description</b>	<b>Impact</b>
<b>Dam Construction, Pipeline Construction, Pump Station and other infrastructure</b>	
Impacted counties: Fannin.	
Construction period: 4-5 years.	
Construction costs	\$ 267,279,000 to \$ 295,414,000
Total economic activity	\$ 302,931,000 to \$ 334,819,000
Total salaries and wages	\$ 53,579,000 to \$ 59,219,000
Total person-years of employment	1,596 to 1,764
Property Income*	\$ 14,773,000 to \$ 16,328,000
Indirect Business Taxes**	\$ 2,663,000 to \$ 2,944,000

\* Includes rents, royalties, dividends, and corporate profits. \*\* Includes property taxes, sales taxes, and fees for permits and licenses paid on secondary transactions from water district spending. Sources: North Texas Municipal Water District, authors' estimates.

**Table ES1 -- continued**

**Temporary Local Economic of Pipeline, Treatment Plant,  
and Related Infrastructure Construction**

<b>Description</b>	<b>Impact</b>
<b>Pipeline, Storage, and Treatment Facilities Construction</b>	
Impacted counties: Fannin, Collin.	
Construction period: 3-4 years.	
Construction costs	\$ 365,001,000 to \$ 403,422,000
Total economic activity	\$ 536,540,000 to \$ 593,018,000
Total salaries and wages	\$ 180,658,000 to \$ 199,674,000
Total person-years of employment	4,122 to 4,556
Other property income*	\$ 53,308,000 to \$ 58,919,000
Indirect business taxes**	\$ 12,147,000 to \$ 13,426,000

\* Includes rents, royalties, dividends, and corporate profits. \*\* Includes property taxes, sales taxes, and fees for permits and licenses paid on secondary transactions from water district spending. Sources: North Texas Municipal Water District, authors' estimates.

## Table ES2

### Recurring Annual Local Economic Impacts (2007 dollars)

Description	Impact
<b>Dam, Pump Station, Pipeline, and Treatment Plant Operations</b>	
Impacted counties: Fannin, Collin	
Total economic activity	\$ 3,966,000
Total salaries and wages	\$ 825,000
Total full-time-equivalent employment	20
<b>Recreational Visitor Spending</b>	
Total annual spending	\$ 16,000,000 to \$ 21,000,000
Total economic activity	\$ 20,230,000 to \$ 26,972,000
Total salaries and wages	\$ 5,957,000 to \$ 7,972,000
Total full-time-equivalent employment	295 to 393
<b>Resident Spending</b>	
Permanent and Weekend/Vacation Residents: Fannin, Lamar, Hunt, Delta	
Total economic activity	\$ 82,303,000 to \$ 90,967,000
Total salaries and wages	\$ 17,150,000 to \$ 18,955,000
Total full-time-equivalent employment	701 to 775
<b>New Industrial and Commercial Activities</b>	
Based on Projected Water Usage	
Total economic activity	\$ 138,710,000
Total salaries and wages	\$ 45,961,000
Total full-time-equivalent employment	1,607

Source: Authors' estimates

## ES3

### Recurring Annual Fiscal Impacts of New Housing Developments and Resident and Recreational Out-of-Area Visitor Spending<sup>+</sup>

Description	Impact
Total taxable value of housing (permanent and weekend residents)	\$ 326,200,000
Reduction in property value due to inundation and mitigation	(\$ 10,524,000)
Net gain in taxable property values	\$ 315,676,000
Estimated new county property tax revenues	\$ 1,894,000
Estimated new school district property tax revenues	\$ 5,118,000
Total potential* municipal sales taxes (0.01 rate)	\$ 290,000
Hotel occupancy tax revenues*	\$ 175,000

<sup>+</sup> at buildout \* Value will be impacted by land annexation and business location decisions.

Source: Authors' estimates

## ***Section 1: Introduction***

Addressing future water needs for the North Texas Municipal Water District's service area has led to the consideration of developing several new water supplies. One proposal is for a reservoir to be located along the Lower Bois d'Arc Creek northeast of the City of Bonham in Fannin County. The following report updates the findings of our 2004 analysis of the economic, fiscal, and developmental impacts of this proposed reservoir.

Our estimates of the economic impacts of the reservoir and related economic activity are based on the IMPLAN input-output economic modeling system developed by the Minnesota IMPLAN Group. The modeled impacts include the direct effects of spending for construction activities and consumption spending, the indirect effects of local vendors providing goods and services to the primary firms, and the induced impacts of employees of these firms spending a portion of their earnings in the local economy.

We begin with an economic overview of Fannin County and then proceed to measure the new employment, income, spending, and tax revenues that will attend the construction and operations of the dam and related transportation, storage, and treatment facilities. We then explore the "ancillary" development likely to occur in conjunction with the dam, in particular the construction of new homes and recreationally based businesses. New and recurring income, employment, and economic activity associated with this ancillary development are estimated. Finally, we examine the impact of the proposed project on revenues to local taxing jurisdictions.

## ***Section 2: Economic overview of Fannin County.***

Like many rural counties in Texas, Fannin County saw its historical peak of population and economic activity around the turn of the 20<sup>th</sup> century. The 1900 census showed a population of 51,793. Cotton and corn production were the chief crops in an economy dominated by agricultural production. Later in the 20<sup>th</sup> century, dairy operations rose in prominence, but the county suffered tremendous economic losses during the depression years and after World War II. Children of farmers sought their fortunes elsewhere. By 1970, the population had dropped to 22,705. However, after 1970 the population stabilized and began to slowly increase. Today Fannin County is home to over 33,000 residents and during the decade of the 1990s actually grew faster than the state as a whole (26 percent increase versus 22.8 percent increase) as spillover growth from Dallas' northern suburbs reached the county.

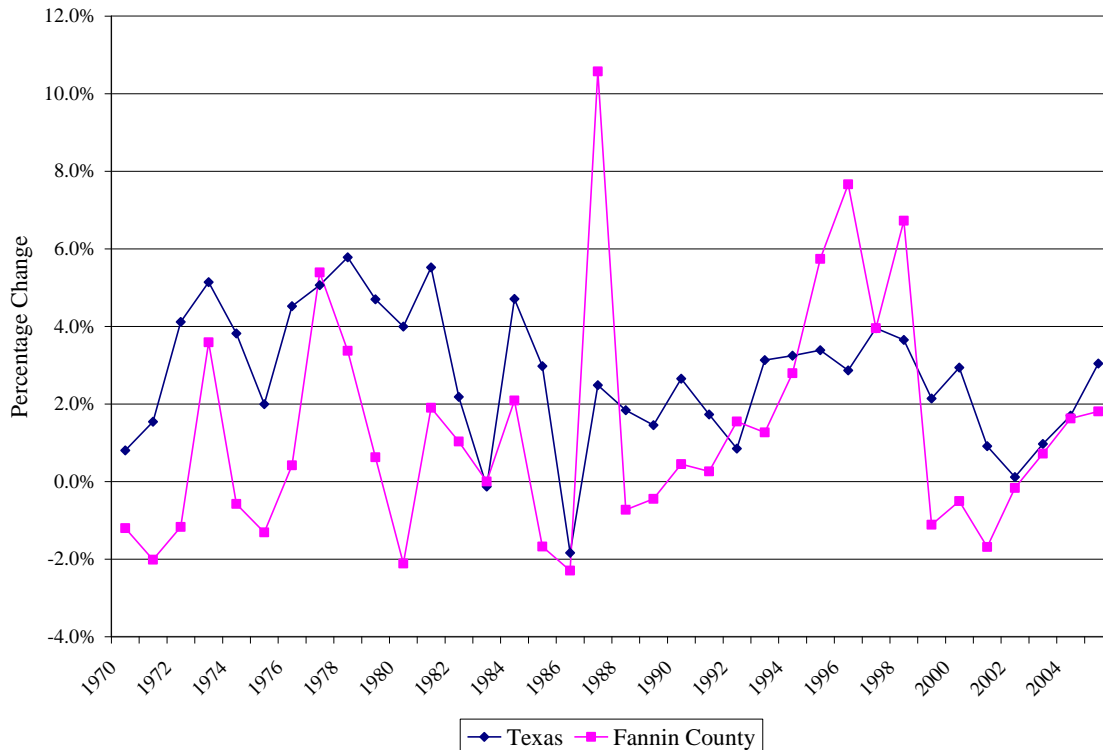
As can be seen in Figure 1, year-over-year employment change in Fannin County has not seen consistent growth as shown for the state. With the exception of 1986 and 1994-1997, the county has lagged state economic performance, sometimes dramatically. These data suggest that one critical economic development strategy for Fannin County should be to diversify the economic base, particularly toward industries with greater stability over time.

The proposed reservoir offers several economic development opportunities for Fannin County. In addition to the substantial economic activity that would be generated by construction projects related to the reservoir over a multi-year period, the new lake would attract recreational users whose spending, in turn, would spur investment in new hospitality venues. By supporting new residents and hosting new recreation-based

industries, the proposed reservoir offers an excellent diversification opportunity for Fannin County.

**Figure 1**

**Year-to-Year Percentage Change  
Total Employment State of Texas and Fannin County  
1970-2005**



Source: US Department of Commerce.

***Section 3: Economic impacts of dam and related infrastructure construction.***

In this section we examine the economic impacts of the construction of the proposed Lower Bois d'Arc Creek Reservoir dam and related infrastructure. These estimates are based on the latest cost projections for the facilities expressed in current year (2007) dollars.

Economic impact assessments for the dam and related infrastructure construction projects are examined in two models. The first looks at the impacts that will likely

remain in Fannin County. However, based on the size of the development projects, businesses and residents of nearby counties will also benefit from the economic activity associated with the construction of the dam. For purposes of this analysis, we have included an estimate of the total impacts that will likely occur in a wider economic area defined by Fannin, Delta, Lamar, and Hunt counties.

The most recent estimates call for expenditures on dam construction to be about \$100 million. In addition, related infrastructure including transport pipeline, a water intake pump station, and related facilities add about \$181 million to construction expenditures. Total expenditures for the Lower Bois d'Arc Creek reservoir and related infrastructure in Fannin County will be between \$267 million and \$295 million over a four to five year period. Based on the relative presence, or absence, of industries providing materials and supporting services to dam construction projects, some of the economic activity will "leak" out of the local area. Even so, these expenditures will increase total economic activity in Fannin County by \$303 million to \$335 million (see Table 1). This new activity will create over 1,500 person years of employment that will increase local labor income (salaries, wages, and benefits) by somewhere between \$53.5 million and \$59 million. In addition, property incomes in the form of rent, royalties, corporate profits, and dividends will increase by \$14 million to \$16 million. Business taxes from indirect transactions will boost state and local tax revenues by \$2.7 million to \$2.9 million.

Looking at the expanded economic region defined by Fannin, Lamar, Delta, and Hunt counties, the impacts are slightly larger reflecting these additional counties' abilities to attract a portion of the jobs and business activity related to the development of the

reservoir. Including the spillover to these adjacent counties, total economic activity associated with the construction of the Lower Bois d’Arc Creek reservoir dam and other infrastructure rises to between \$330 million to over \$364 million during the four to five year period. Total labor income paid in the four-county region will increase to \$76 to \$84 million through the creation of between 2,200 and 2,400 total temporary jobs. Property income will also rise to between \$21.7 million and \$24 million, while state and local government will see between \$4 million and \$4.5 million in revenue from indirect business taxes including sales taxes, property taxes, and fees for permits and licenses.

**Table 1**

**Temporary Local Economic Impacts of Construction  
Of the Lower Bois d’Arc Creek Reservoir Dam**

<b>Description</b>	<b>Impact</b>
<b>Dam Construction, Pipeline Construction, Pump Station and other infrastructure</b>	
Impacted counties: Fannin.	
Construction period: 4-5 years.	
Construction costs	\$ 267,279,000 to \$ 295,414,000
Total economic activity	\$ 302,931,000 to \$ 334,819,000
Total salaries and wages	\$ 53,579,000 to \$ 59,219,000
Total person-years of employment	1,596 to 1,764
Property Income*	\$ 14,773,000 to \$ 16,328,000
Indirect Business Taxes**	\$ 2,663,000 to \$ 2,944,000
<b>Dam Construction, Pipeline Construction, Pump Station and other infrastructure</b>	
Impacted counties: Fannin, Hunt, Lamar, Delta.	
<b>Construction period: 4-5 years.</b>	
Total economic activity	\$ 329,871,000 to \$ 364,595,000
Total salaries and wages	\$ 76,275,000 to \$ 84,304,000
Total person-years of employment	2,240 to 2,476
Property Income*	\$ 21,745,000 to \$ 24,033,000
Indirect Business Taxes**	\$ 4,093,000 to \$ 4,524,000

\* Includes rents, royalties, dividends, and corporate profits. \*\* Includes property taxes, sales taxes, and fees for permits and licenses paid on secondary transactions from water district spending. Sources: North Texas Municipal Water District, authors’ estimates.

Property owners for the land that will be consumed by the lake and the additional acreage that may be set aside for flood easements and environmental mitigation purposes will be compensated. These payments to land owners represent a transfer of income to the local economy supporting new spending in the region.

In addition to construction activities in Fannin County, Collin County will see a share of the economic benefits of the reservoir development including pipeline, terminal storage facilities and a water treatment plant. These infrastructure components will be located in either Fannin County or Collin County. These facilities will cost between \$365 million and \$403 million to build. This spending, which includes the Fannin County spending described above, will generate between \$536 million and \$593 million in economic activity in the Fannin/Collin Counties region during the development phase. Between 4,122 and 4,556 person-years of employment will be supported and labor income will rise by \$180 million to \$200 million (see Table 2). Property income will rise between \$53 million and \$59 million. Finally, state and local governments will gain an estimated \$12 million to \$13.4 million in taxes and fees.

**Table 2**

**Temporary Impacts of Transmission and Treatment Infrastructure Construction**

Description	Impact
<b>Pipeline, Storage, and Treatment Facilities Construction</b>	
Impacted counties: Fannin, Collin. Construction period: 3-4 years.	
Construction costs	\$ 365,001,000 to \$ 403,422,000
Total economic activity	\$ 536,540,000 to \$ 593,018,000
Total salaries and wages	\$ 180,658,000 to \$ 199,674,000
Total person-years of employment	4,122 to 4,556
Other property income*	\$ 53,308,000 to \$ 58,919,000
Indirect business taxes**	\$ 12,147,000 to \$ 13,426,000

\* Includes rents, royalties, dividends, and corporate profits. \*\* Includes property taxes, sales taxes, and fees for permits and licenses paid on secondary transactions from water district spending. Sources: North Texas Municipal Water District, authors' estimates.

***Section 4: On-going economic impacts of dam and pipeline operations***

Once the dam and pipeline are built, on-going operations and maintenance of these infrastructures will continue to provide a modest number of jobs and a minor boost to local economic activity. Recurring maintenance and operating expenditures for the dam and related infrastructures are expected to increase local economic activity by about \$4 million each year in Fannin and Collin counties combined. This activity will support 20 full-time-equivalent (FTE) direct and indirect jobs paying about \$825,000 in annual wages and salaries (see Table 2).

**Table 2**

**Recurring Annual Local Economic Impacts of Dam,  
Pipeline and Related Infrastructure Operations  
(Fannin and Collin Counties)**

<b>Description</b>	<b>Impact</b>
Total economic activity	\$ 3,966,000
Total salaries and wages	\$ 825,000
Total full-time-equivalent employment	20
Indirect state and local business taxes	\$ 151,000

Source: Authors' estimates

***Section 5: Developmental impacts of the proposed reservoir***

In addition to the one-time and recurring impacts described above, the impoundment of a 16,526 acre reservoir in Fannin County would have substantial spillover benefits on the local economy. In this section we consider the impacts that will follow new recreational spending based at the reservoir and the economic and fiscal consequences for the region from attracting new permanent and weekend residents.

### *5.1 Impacts of recreational users*

The “field of dreams” scenario often works for lakes. If you build a publicly accessible water recreation resource, visitors use it. The north Texas region currently has many excellent reservoirs supporting water-based recreational activities. However, some of these reservoirs are so overcrowded that water accidents occur with increasing frequency. As the DFW population continues to grow over the next 30 years, demand for water recreation sites will increase, and Fannin county is ideally situated to capture more than a fair share of this recreational activity.

Unfortunately, few studies offer specific guidance on estimating the magnitude of the economic impacts that will attend increased recreational visitors to Fannin County when the proposed reservoir is fully developed. However, in the mid-1990s, Texas A&M, working for the Texas Parks and Wildlife Department and the Sabine River Authority, surveyed anglers at Lake Fork to assess their levels of local spending. Over two-thirds of the survey respondents were non-local residents, with about one-third hailing from outside of Texas. Non-local angler-visitors to Lake Fork spent an estimated \$14.5 million in Wood, Rains, and Hopkins counties during their fishing trips for food, lodging, and supplies. This level of spending encourages business development and supports jobs. While some of this employment will be seasonal, north Texas weather patterns permit water-based recreation on a year-round basis.

Other lake-based recreation activities will draw additional out-of-area visitors to the region. We are not suggesting that the proposed reservoir will rise to Lake Fork’s national reputation as a fishing lake, but when combined with non-angler spending, we estimate that non-local recreation visitors will add \$16 million to \$21 million in new

spending for dining, food, retail goods, and lodging to the Fannin County economy. This spending will generate between \$20.2 million and \$26.9 million in economic activity, support 300 to 400 new jobs, and increase local earnings by \$6 million to \$7.9 million (see Table 3). Undoubtedly, bringing new recreational visitors to the area will present opportunities for businesses located in adjacent counties, especially Lamar County. However, given existing amenities and attractions in the City of Bonham, we expect that most of the recreational spending will stay in Fannin County.

**Table 3**

**Recurring Annual Local Economic Impacts of  
Recreational Out-of-Area Visitor Spending**

<b>Description</b>	<b>Impact</b>
Total annual spending: recreational visitors	\$ 16,000,000 to \$ 21,000,000
Total economic activity	\$ 20,230,000 to \$ 26,972,000
Total salaries and wages	\$ 5,957,000 to \$ 7,972,000
Total full-time-equivalent employment	295 to 393

Source: Authors' estimates

*5.2 Impacts of new permanent and weekend residents*

One trend clearly evident in north and northeast Texas is that counties with substantial reservoirs have enjoyed greater population growth than counties without these important amenities. Many recreational lake visitors eventually decide to move close to their favorite reservoirs. Carefully managed residential development can prove to be a tremendous economic boon for lake county economies.

Fannin County is well-positioned to take full advantage of opportunities to attract new permanent and weekend residents to the reservoir. The proposed dam, which will be on the north end of the reservoir, will be only 50 miles from McKinney and 80 miles from downtown Dallas. Already, as indicated earlier, spillover growth from the Dallas-

Fort Worth Metroplex is reaching the Bonham area. Within reasonable reach of big-city amenities, yet removed from most urban disamenities, we expect the proposed reservoir to attract at least 1,100 full-time resident households over and above anticipated growth for the area over the next 30 years. Though this may not seem like a huge number of new households, at least by urban development standards, these new households will bring \$57 million in new income to the area.

In addition, at least 2,100 new dwellings will be constructed in the area surrounding the reservoir as weekend/vacation homes and investment properties. Our estimate of these weekender residences is likely understated. However, we caution that while relative proximity to the Metroplex will encourage permanent residents, it will lower demand for weekend/vacation housing. Nonetheless, we estimate that weekend and vacation resident will bring an equivalent of \$9.6 million in household income that will be used for local purchases.

Modeling the combined incomes of permanent residents and the proportional income of weekend residents using regionally based estimates of spending, we find the Fannin County economy will realize a net increase of between \$77 million and \$85 million each year once full development is reached. This activity will support 517 to 572 permanent jobs paying \$12.8 million to \$14 million in salaries and wages (see Table 4).

It is likely that businesses located in Hunt, Lamar, and Delta counties, as well as Fannin County, will offer goods and services to the new permanent and weekend residents. Including the economic activity that is likely to go to these other counties, spending by households drawn to the new reservoir will increase economic output in the

broader region by \$82.3 million to \$91 million, boost local income by \$17 million to \$19 million, and support between 701 to 775 permanent jobs.

We strongly emphasize that the pace and quality of development will depend on many market-related factors. **One of the most critical factors will be the extent to which counties, cities, and towns adopt well-reasoned development plans to promote quality growth while also ensuring that infrastructure development and publicly-provided services keep pace with new demand.** Examples of infrastructures would include such things as electric services, roads, water services, and public safety and other municipal services.

**Table 4**

**Recurring Annual Local Economic Impacts of New Resident Spending**

<b>Description</b>	<b>Impact</b>
Fannin County Impacts	
Total annual spending	\$ 67,724,000 to \$ 74,290,000
Total economic activity	\$ 77,119,000 to \$ 85,237,000
Total salaries and wages	\$ 12,736,000 to \$ 14,077,000
Total full-time-equivalent employment	517 to 572
Fannin, Hunt, Delta, and Lamar County Impacts	
Total economic activity	\$ 82,303,000 to \$ 90,967,000
Total salaries and wages	\$ 17,150,000 to \$ 18,955,000
Total full-time-equivalent employment	701 to 775

Source: Authors' estimates

*5.3 Impacts of new housing construction*

In our projections we have assumed that the new permanent and weekend resident households will be single-family units. This is consistent with most of the development trends experienced in other lake counties. Even if residential real estate demand shifts to the inclusion of multi-family properties, the costs of development, and hence the economic and fiscal impacts, will be within the range of possibilities projected below.

Because of recent housing market volatility, we have retained the estimates of housing prices from our earlier study. Undoubtedly, this approach results in a more conservative estimate of the likely impacts of housing development near the new reservoir.

We estimate the average cost of land and improvements for permanent-resident dwellings will be about \$127,000. Based on the findings of nationwide housing studies, vacation and weekend homes will likely be valued somewhat less than those of permanent residents. We assume an average market value of \$115,000 per weekend dwelling. About 25 percent of the housing values will represent land; therefore, based on our earlier estimates of the number of households that will eventually occupy the areas around the proposed reservoir, we expect almost \$288 million in new residential construction activity to occur primarily in Fannin county over a 30 year period. These construction activities will boost the local economy by about \$14.5 million per year, on average,<sup>1</sup> support an average of 133 long-term FTE jobs, and boost local income by \$3.4 million (see Table 5).

**Table 5**

**Local Economic Impacts of Housing Construction**  
(30-year development)

Description	Impact	
	Total	Average Annual
Construction spending	\$ 287,805,000	\$ 9,594,000
Total economic activity	\$ 432,538,000	\$ 14,418,000
Total salaries and wages	\$ 102,123,000	\$ 3,404,000
Total full-time-equivalent employment	3,997	133

Source: Authors' estimates

<sup>1</sup> Housing construction will not be evenly distributed across the period of development.

#### *5.4 Business development and recruitment*

One of the key attractions for new residents, including business people making location choices for plant sites, distribution centers, and other industrial land uses, is the presence of recreational amenities and quality-of-life features. These characteristics have become critical in the site selection process. Given Fannin County's existing locational advantages, the presence of the new reservoir providing a reliable source of water for industrial uses will enhance the county's ability to attract and retain businesses. To estimate the magnitude of the economic activity that could be gained through expanded business activities, we utilized projected water demand estimates from the Texas Water Development Board (TWDB)<sup>2</sup> and the previously described IMPLAN model.

Based on its latest published estimates, the TWDB expects manufacturing industry water use to rise in Fannin County by 8 acre feet per year between 2020 and 2030. Water used for steam electricity generation is expected to increase by 436 acre feet per year. Livestock and irrigation uses are not expected to increase over this period, which is reasonable given the impact of the lake's impoundment on these land uses. Mining industry activities are also not expected to increase.<sup>3</sup> Municipal uses are expected to rise by 1,326 acre feet per year. While much of this increase in municipal usage will be accounted for by the increase in households described earlier, some of the increase will be due to increased commercial and other non-manufacturing business activities not previously described in this analysis.

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<sup>2</sup> Though the TWDB estimates do not specifically include the proposed reservoir, they provide a reasonable basis for conservatively estimating future economic activity.

<sup>3</sup> Projected water usage for livestock and irrigation purposes are substantially lower than current usage estimates.

Using 2000 usage data for Fannin County and adjusted commodity production estimates from IMPLAN,<sup>4</sup> we estimated the current economic value of production per acre foot of water used by use-category. Multiplying these values by projected increase in water usage suggests that manufacturing, commercial,<sup>5</sup> and electricity generating activities will increase by \$112.6 million annually in Fannin County. While there are many factors that drive economic development, without the water resources made available by the proposed reservoir, it is unlikely that Fannin County will see this increase in economic activity.

Increasing Fannin County's direct economic activity would also create spin-off indirect and induced economic impacts as described earlier in this report. However, two adjustments are required to improve the accuracy of estimating these indirect and induced impacts. First, we will not include the induced (household spending) impacts to avoid double counting the impacts of permanent resident spending described above that would be employed through this new business activity. Secondly, current economic models of Fannin County do not adequately represent how the economy will operate 25 years from now. We therefore used impact multipliers for Rockwall County, which currently has a population about equal to TWBD's projected population for Fannin County in 2020. [Local officials in Fannin County suggest that the TWBD population projections are substantially underestimated. We concur with these officials; however, using the TWBD data enhances the conservative nature of our estimates.] Increasing Fannin County's industrial and commercial output by \$112.6 million will result in \$138.7 million in

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<sup>4</sup> Adjusted for the loss of the local meat packing operation.

<sup>5</sup> We assumed that no more than 20 percent of municipal water usage is for commercial business activities.

economic activity, boost area labor income by \$46 million, and support over 1,600 jobs (see Table 6).

**Table 6**

**Economic Impacts of New Industrial and Commercial Activities**  
(10-year increase after reservoir development)

Description	Annual Impact
New Direct Activity	\$ 112,610,000
Total economic activity	\$ 138,710,000
Total salaries and wages	\$ 45,961,000
Total full-time-equivalent employment	1,607

Source: Authors' estimates

***Section 6: Local fiscal impacts***

In this section, we estimate some of the new tax revenues that will be enjoyed by counties and school districts. We will also consider the impacts on local property taxes from the loss of taxable land in the lake impoundment and mitigation areas.

Taxable value of permanent and weekend resident housing at full development is estimated at \$326.2 million<sup>6</sup>. Of course, some diminution of taxable values will occur as a result of land inundation and environmental mitigation. Most of the land to be inundated is agricultural. Fannin County assess taxable values for agricultural land according to the nature of the land, the use of the land, and irrigation status. These valuations range from \$65 per acre for native grasslands that are not irrigated to \$323 per acre for irrigated land or land in horticultural uses. We have assumed that of the 16,526 acres that will be inundated and the estimated 30,000 acres that may be required for environmental mitigation, 50 percent is irrigated crop land valued at \$323 per acre for tax

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<sup>6</sup> The average value of homestead, senior citizen, disabled, veteran and other exemptions is estimated at 15 percent of total valuation.

purposes, 30 percent is valued at \$157 per acre, and that 20 percent is improved land at \$88 per acre. (Typically irrigated land is not used for environmental irrigation; therefore, our approach will tend to overstate potential tax losses.) Therefore, the inundation of land and mitigation areas for the reservoir will remove \$10.5 million in taxable value from the local tax rolls. Therefore, the net increase in taxable value will be \$315.7 million, an increase of 22 percent over Fannin County 2003 total taxable property values. This increase in valuation will generate about \$1.9 million per year to the county and over \$5 million per year to area school districts under current law. Importantly, much of this gain in school district revenues will not be accompanied by a proportionate increase in students since a large percentage of the estimated valuations are for weekend or vacation residences. Area municipalities and townships could also benefit from increased property tax revenues depending on the degree to which their taxing jurisdictions are expanded to include land adjacent to the proposed reservoir (see Table 7).

Taxable retail sales in Fannin County will increase as new residents and visitors come to the area. Taking a very conservative approach, we estimate that local sales tax revenues could increase by \$290,000 or more per year. Hotel revenues for room rentals are expected to be at least \$3.5 million per annum. Based on a local bed-tax rate of 5 percent, these expenditures will boost local tax receipts by an additional \$175,000 annually. Our estimates do not consider the additional taxable property value that will be created as stores, bait shops, hotels/resorts, restaurants, and other businesses locate around the lake.

**Table 7****Recurring Annual Fiscal Impacts of New Housing Developments  
and Resident and Recreational Out-of-Area Visitor Spending**

Description	Impact
Total taxable value of housing (permanent and weekend residents)	\$ 326,200,000
Reduction in property value due to inundation and mitigation	(\$ 10,524,000)
Net gain in taxable property values	\$ 315,676,000
Estimated new county property tax revenues	\$ 1,894,000
Estimated new school district property tax revenues	\$ 5,118,000
Total potential* municipal sales taxes (0.01 rate)	\$ 290,000
Hotel occupancy tax revenues*	\$ 175,000

\* Value will be impacted by land annexation and business location decisions. Source: Authors' estimates

***Section 7: Conclusions***

The proposed Lower Bois d'Arc Creek Reservoir will provide tremendous short-term economic gains to Fannin County that will certainly spill over to residents and businesses in surrounding counties as the dam and related infrastructures are constructed over a multi-year period. Construction spending for the dam and transport infrastructure will add over \$267 million to local economic activity and provide more than 1,600 person-years of employment. The dam will also create new opportunities for local businesses by adding \$4 million in annual local economic activity and supporting about 20 permanent jobs.

Once impounded, the lake will attract substantial new private investment by hospitality firms anxious to provide services, meals, and specialty retail goods to the lake's recreational users. Out-of-area recreational users are projected to spend \$16 million to \$21 million per year in the local economy. In addition, as seen with other Texas lakes, residents will be attracted to the region to take advantage of the new recreational amenities, bringing substantial new local spending to the area at full

development. These new personal outlays will increase local economic activity by over \$80 million per year and support more than 700 permanent jobs. The reservoir will provide water resources that will support additional business development in Fannin County. Using conservative TWBD usage estimates, \$138.7 million in new economic activity would be supported in the county adding an additional 1,600 jobs to area payrolls. Any comparable industrial investment offering this magnitude of economic benefit would probably require exceptional incentive packages from state, county, and municipal governments. Construction of housing units for permanent and weekend residents will likely be spread over a 30-year period providing long-term job and business opportunities in the construction trades.

An expanded tax base will be another payoff from the ancillary development that will attend construction of the reservoir, allowing local governments to provide a broader range of public services while maintaining competitive tax rates. In summary, the economic opportunities supported by the proposed reservoir will promote sustainable development while diversifying the local job base.