

# **The Economic Impact of the Northeast Delta Human Services Authority**

Paul S Nelson, Ph.D.<sup>1</sup>  
Professor of Economics  
University of Louisiana at Monroe  
Monroe, LA 71209

Robert C. Eisenstadt, Ph.D.  
Professor of Economics  
Director, Center for Business and Economic Research  
University of Louisiana at Monroe  
Monroe, LA 71209

May 20, 2020

---

<sup>1</sup> Questions concerning the methodology or calculations used to generate the estimates in this report should be directed to Dr. Nelson; 318-342-1159 or [nelson@ulm.edu](mailto:nelson@ulm.edu).

# The Economic Impact of the Northeast Delta Human Services Authority

## Executive Summary

This report estimates the economic impact of the Northeast Delta Human Services Authority (NEDHSA), the local governing entity (LGE) for Region 8 of the Louisiana Department of Health, Office of Behavioral Health. NEDHSA provides behavioral health prevention and treatment services for children, adolescents, and adults in Northeast Louisiana. NEDHSA also serves Northeast Louisiana's developmentally disability population and provides prevention and wellness services for addiction disorders for alcohol, other drugs, tobacco, and gambling for residents of the 12 parishes of Region 8 in Northeastern Louisiana.

Economic impact estimates what would be the reduction in the level of economic activity in Northeast Louisiana in the absence of NEDHSA. We estimate economic impact in 3 ways: (1) the impact on household income; (2) the regional value-added; and (3) the total impact. Household income is the income received by households in the forms of wages, rents, interest, or profits. Value-added measures the additional economic value created by NEDHSA by parties other than NEDHSA itself. Total economic impact is the increase dollar value of transactions to the region as a result of NEDHSA.

Further, each estimated impact is shown in two ways. First, we show the single-year economic impact. For household income, the single year economic impact of NEDHSA is \$15,279,991. Without NEDHSA, households in Northeast Louisiana would have over \$15 million less income to spend each year. Second, we calculate the present value of this stream of income over a ten-year period.<sup>2</sup> The present-value of 10 years of increased household income is \$138,305,287.

The impact of NEDHSA on regional value-added in one year is \$4,434,941. Adding up those impacts over 10-years, the present value yields \$40,142,418 in additional value to the regional economy.

The single year total economic impact of all transactions of NEDHSA on Northeast Louisiana is \$21,207,482. The total economic impact of all transactions over 10-years (present-value) is \$191,957,370.

We also evaluate NEDHSA's impact on employment. This impact starts with employment at NEDHSA itself but is substantially broader. NEDHSA, through its own hiring, employment by suppliers, and spending by employees and others results in 182 additional full-time equivalent jobs in Northeast Louisiana.

Increased economic activity from any source generates increased tax revenue for state and local governments. This report focuses on two sources of tax revenue: (1) the local and state

---

<sup>2</sup> "Present-value" is discussed in greater detail in the body of the report.

sales tax and (2) the state income tax. Compared to a scenario in which NEDHSA did not exist, local sales tax collections are \$336,180 higher in a year than they otherwise would be. Taking the present value over a ten year period yields \$3,042,718.

Looking at the state sales tax collections, we find the economic impact of NEDHSA to be \$278,096 in one year, with the ten-year present value of \$2,517,158.

By increasing household incomes, NEDHSA, causes additional state income tax revenues to be generated. We estimate that single year collections expand state income tax coffers by \$255,176 richer. The ten-year present value of the annual impact on income tax is \$2,309.700.

**Table 1. Summary of Impacts**

<b>Economic Impacts</b>	<b>Single-Year</b>	<b>10-year Present Value</b>
Household Income	\$15,279,991	\$138,305,287
Regional Value-Added	\$4,434,941	\$40,142,418
Total Transactions	\$21,207,482	\$191,957,370
Full-time Equivalent Jobs	182	N/A
<b>State and Local Tax Revenues</b>	<b>Single Year</b>	<b>10-year Present Value</b>
Local Sales Tax	\$336,180	\$3,042,718
State Sales Tax	\$278,096	\$2,517,158
State Income Tax	\$255,176	\$2,309.70

## The Economic Impact of the Northeast Delta Human Services Authority

This report estimates the economic impact of the Northeast Delta Human Services Authority (NEDHSA), the local governing entity (LGE) for Region 8 of the Louisiana Department of Health, Office of Behavioral Health. NEDHSA provides behavioral health prevention and treatment services for children, adolescents, and adults in Northeast Louisiana. NEDHSA also serves Northeast Louisiana's developmentally disability population and provides prevention and wellness services for addiction disorders for alcohol, other drugs, tobacco, and gambling for residents of the 12 parishes of Region 8 in Northeastern Louisiana. Region 8 includes the parishes of Caldwell, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, West Carroll, and Union.<sup>3</sup> NEDHSA's 12-parish service area includes the Monroe, Louisiana metropolitan statistical area (2018 resident population = 176,805), as well as the town of Ruston in Lincoln Parish (2017 resident population = 22,274). Table 2 below gives a brief demographic summary of the 12-parish region.

**Table 2. Demographic Indicators for the NEDHSA Service Area for Selected Years**

Indicator	2000	2010	2015	2016	2017	2018
Population	353,647	356,198	354,936	354,159	351,913	349,251
Total Employment*	172,794	177,259	184,047	184,966	184,521	185,401
Per Capita Personal Income (2018 dollars)	\$30,541	\$35,590	\$37,577	\$37,879	\$37,938	\$38,803

\*Includes covered and proprietary employment

As the above table shows, Northeast Louisiana is slowly depopulating. Out-migration is the principal cause of population decline and is expected to continue for the foreseeable future. In contrast to the slow population decline, total employment is slowly increasing. These trends cannot continue in their current directions forever however they could for some time. Finally, the table describes area real personal per capita income. Real per capita personal income is the total personal income from all sources per person corrected to 2018 dollars. Like the trend in employment, the trend in real per capita personal income is a slow rise. In the appendix, we include data for each of the 12 parishes in the NEDHSA service area.

### Socioeconomic Impact

This report does not attempt to value NEDHSA's output beyond what we have outlined above and does not attempt to value the socioeconomic impacts that occur as a result of

---

<sup>3</sup> These parishes include Caldwell, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, West Carroll, and Union.

NEDHSA's many programs and services. While socioeconomic impacts can be positive or negative, as well as unintentional or intentional, NEDHSA invests in program design and implementation with the intention to elicit positive socioeconomic impacts. Most of these programs result in significant societal cost savings beyond the scope of this report. For example, if the services provided by NEDHSA allowed a worker to overcome substance abuse, then that worker becomes more productive. Costs related to missed time at work, retraining, liability, and other issues associated with a worker struggling with addiction are reduced. The same can be said for NEDHSA's prison re-entry program that addresses and mitigates prisoner recidivism rates. High costs are related to re-incarceration, and building a successful plan for community reintegration helps reduce those costs to local taxpayers. Additionally, improved quality of life, better outcomes, and higher productivity attributable to these and similar outreach programs that fall under the guidance of NEDHSA will result in potentially higher wages for the worker, higher profits for their employer, and marginally expanded labor supply for the region. Increases in available resources, as well as higher wages for workers and increased output for business and non-profit establishments are associated with secondary effects not unlike the induced effects described above.

While some socioeconomic impacts of NEDHSA are easily identifiable, such as the ones outlined above, others are not as obvious, but have similar positive impacts, if not greater. Providing comprehensive community-based psychiatric and addiction services also contributes to reductions in crime and violence, homelessness, school dropouts, and expensive inpatient hospitalizations, all of which could otherwise result in costly consequences on both the local and state level. Additionally, the wide array of prevention and wellness programs and services provided by NEDHSA often results in positive lifestyle and health changes, saving an immeasurable amount of money each year in primary and behavioral health costs. The agency's school-based prevention education programs result in ongoing cost savings that may remain for generations to come. We recognize these impacts exist. Unfortunately, quantifying them is, at best, difficult and beyond the scope of this analysis.<sup>4</sup>

## **Economic Impacts**

With a shrinking population and personal income that is slowly growing, the economic impact of firms and organizations in Northeast Louisiana is of critical interest. Estimating the economic impact of an institution, a firm, or a project, is essentially trying to evaluate something that is unobservable, i.e., what would things be like if the institution, etc. did not exist or ceased to exist. For some firms, if they did not exist, then a substitute would readily appear, making the initial firms' economic impact minimal. A fast food restaurant would be an example. A fast food restaurant seemingly has a visible economic impact. It hires workers,

---

<sup>4</sup> NEDHSA also manages Louisiana Community Service (LCS) funds that flow from the state to various social welfare agencies in the operating region. These funds and agencies complement NEDHSA's mission. However, we do not include the impact of these funds in this report since it is our understanding that they would continue in the absence of NEDHSA.

purchases supplies, and distributes income to its owners. Yet, if a local fast food restaurant disappeared, hungry people would very likely move on to other restaurants, which would, in turn, hire more workers, purchase more supplies, and become more profitable. On the other hand, consider the case of a locally based health insurance firm. If the company disappeared, a high percentage of its clients would seek health insurance from alternate sources. The increasingly concentrated demand for health insurance among (now) fewer providers would lead to these firms increasing employment. But since there are no other health insurers headquartered in Monroe, those dollars would leave our area. It is possible that, in the absence of the local health insurer, another health insurer would appear somewhere but most likely not in Northeast Louisiana. Hence, this major health insurance company has a local economic impact.

The net economic impact of NEDHSA as a percentage of its revenue would lie somewhere between these two extremes. If NEDHSA were to disappear, some of its clients may seek substitute services outside of the area. Hence, that spending, along with the associated third-party payments, would be lost to the local economy. However, many current clients may not travel to seek assistance and would, therefore, suffer without treatment. Not only would there be the lost economic impact, but untreated behavioral health problems would likely increase in number to the detriment of families and communities. On the other hand, substitute providers, such as an addiction recovery clinic, would perhaps enter the local market. Therefore, the net economic impact is impossible to estimate with high precision. What investigators rely on are averages that have been compiled by a standard methodology (RIMS II) developed by the Bureau of Economic Analysis, a division of the Department of Commerce of the United States Federal Government.

### **Direct and Indirect Effects**

Economic impacts are divided into three categories: (1) direct, (2) indirect, and (3) induced. "Direct" impacts are the total amount of additional expenditures which can be directly attributed to a single source in a specific geographical area. The geographical area used in this study is the 12-parish region served by NEDHSA. These impacts can be in the form of business revenue, profits, personal wages, or jobs. For example, NEDHSA hires workers, purchases supplies, and makes maintenance expenditures. "Indirect" economic impacts result from suppliers purchasing goods and services and hiring workers to meet demand that would not have occurred but for the existence of NEDHSA. Indirect effects include hiring of contract workers. Direct and indirect effects are often not separated. Imagine two firms identical in every way, except the first firm hires custodial staff while the second hires a janitorial service. The first firm would have a larger direct economic impact, but a smaller indirect economic impact, while the second firm would have the opposite.

## Induced Effects

“Induced” effects result from the spending that employees of NEDHSA and other suppliers make in their ordinary course of life. If workers at NEDHSA go out to eat, for example, that creates revenue and jobs for restaurants that would not exist had it not been for the presence of NEDHSA. If a local restaurant hires an additional server then that server would, in turn, make local expenditures which would further increase demand for local services and so on.

In this report we provide two perspectives of the estimated economic impact. The first estimate draws on current employment, payroll, and revenue data from NEDHSA to create the annual economic impact. The annual economic impact is the effect on employment and income every year. The second is a 10-year present value of those impacts. Present value is an estimate of the value today of a dollar received at some point in the future. A dollar received in the future is always worth less than a dollar received today.<sup>5</sup> To see why, consider the following. Suppose you were offered \$100 today or \$100 one year from today. (We will assume that you are 100% certain that you will, in fact, receive the \$100 in one year if you choose that option.) If you received \$100 today, you could put that money in the bank, earn a little interest, and in one year have more than \$100. If all you cared about is having \$100 one year from today, you would not have to put \$100 in your account today, but could get by with a somewhat smaller value and let interest earnings increase the value of your account to \$100 in one year.

## Economic Impact on Household Income

We present multiple perspectives of NEDHSA’s economic impact. The first measures the impact of NEDHSA on regional household personal income. Household personal income is the total amount of personal income flowing to households including not only wages (the dominant source of income), but also interest, dividends, rents, and royalties. Household personal income also includes payments received from income support programs like Social Security (Table 3).

**Table 3. NEDHSA Economic Impact on Household Income**

Impact	Direct + Indirect Effects	Induced Effects	Total (Direct + Indirect + Induced)
Single Year Impact	\$8,626,816	\$6,653,175	\$15,279,991
10-year Present Value of Impact	\$78,084,749	\$60,220,538	\$138,305,287

---

<sup>5</sup> The net-of-inflation discount rate employed for the calculations (1.85%) is derived from Louisiana’s annual general obligation debt service payments divided by its total bonded debt, less the expected rate of inflation.

Note that the total impact on household income for a single year is over \$15 million and the present value of household income over 10 years is over \$138 million.

### Value-Added Impact

Value-added measures the increased economic value to the region from the existence of NEDHSA. The increased value added is above and beyond the revenue that NEDHSA generates, which is why there is no entry for direct effects in the table. Value-added is more closely interpreted as the contribution to regional gross state product. Hence, there are only indirect and induced value-added. As displayed in the table below, NEDHSA's indirect value-added is almost \$3 million and total value-added is almost \$4.5 million. The total 10-year present value of value-added is over \$40 million (Table 4).

**Table 4. Value-Added Impact of NEDHSA**

Impact	Direct Effects	Indirect Effects	Induced Effects	Total (Direct + Indirect + Induced)
Single Year Impact	N/A	\$3,290,048	\$1,144,893	\$4,434,941
10-year Present Value of Impact	N/A	\$29,779,535	\$10,362,883	\$40,142,418

### Total Economic Impact

We also calculate the total economic impact of NEDHSA (Table 5). The total economic impact measures the total value of aggregated transactions. We include this value because this is a common measure of economic impact. However, it is possible that some transactions are counted twice. The measurement of aggregated transactions is the largest estimate of economic impact on a dollar basis.

**Table 5. The Total Economic Impact of NEDHSA (Aggregated Transactions)**

Impact	Direct + Indirect Effects	Induced Effects	Total (Direct + Indirect + Induced)
Single Year Impact	\$15,047,647	\$6,653,175	\$21,207,482
10-year Present Value of Impact	\$136,202,249	\$60,220,538	\$191,957,370

The total economic impact of NEDHSA is over \$21 million in a single year and almost \$192 million over 10 years (present value).

## Full-Time Equivalent Jobs Created

NEDHSA has 109 full-time employees.<sup>6</sup> Using this figure as the basis for RIMS II multiplier analysis, we estimate an additional 20 jobs from indirect effects. Induced employment increases that total by an additional 53 for a total employment impact of 182 full-time jobs. We consider this number to be a minimum estimate due to relatively high wages paid to the professional staff of NEDHSA (Table 6).

**Table 6. Full-Time Equivalent Jobs Created by NEDHSA**

Effect	Direct Employment	Indirect Employment	Induced Employment	Total Employment (Direct + Indirect + Induced)
Employment Effects	109	20	53	182

## Taxes Paid from Impact on Household Income

As a result of NEDHSA's impact on income and employment, substantial tax revenues are generated which, like household income and jobs, would not exist in the absence of NEDHSA. Many types of taxes will be affected by the activities of NEDHSA. We focus on only two: (1) sales taxes and (2) state income tax that is generated by household income impact. Other sales taxes that might accrue, such as sales taxes on intermediate supplies, alcohol sales, or gasoline purchases, are not calculated. Therefore, the figures below represent underestimates of the tax revenue impact of NEDHSA. Both income and sales taxes are detailed below.

Using the impact on household income, we compute the single-year impact and the ten-year impact on state and local sales tax revenue. The Louisiana state sales tax is 4.45%. Local sales taxes vary in Ouachita Parish by location. The lowest local rate in the parish is 5.5%, which is the figure used in our calculations. Even if all income is consumed, not all expenditures are subject to tax. We assume 40% of household income is spent on taxable goods and services and, therefore, subject to sales taxes. Estimates are shown in Table 7 below.<sup>7</sup>

---

<sup>6</sup> Zero part-time employees.

<sup>7</sup> The local sales tax estimates are likely conservative. Food for home consumption is not subject to the state sales tax but is taxable locally. Hence, a higher percentage of household income is spent on goods subject to the local sales tax.

**Table 7. Sales Taxes Paid to Local and State Governments from NEDHSA’s Impact on Household Income**

<b>Impact</b>	<b>Local Sales Taxes</b>	<b>State Sales Taxes</b>
Single Year Impact	\$336,160	\$278,096
10-year Present Value	\$3,042,718	\$2,517,158

As displayed in the table above, around \$278 thousand in additional sales tax revenue flows into state coffers as a result of the household income generated by NEDHSA. Local sales taxes total over \$336 thousand annually. Of course, this amount is split among the municipal and parish governments, as well as the school districts in the NEDHSA service area.

Another revenue source for state government is the Louisiana Individual Income Tax. Using data from the Bureau of Economic Analysis combined with total state income tax collections, we calculate that on average 1.67% of household income is collected by the state as income taxes. Applying that percentage to the household income generated above, we find that over a quarter million dollars in additional revenue flows to Louisiana’s government with a 10-year present value of over \$2.3 million (Table 8).

**Table 8. Income Taxes paid to Louisiana from NEDHSA’s Impact on Household Income**

<b>Impact</b>	<b>State Income Taxes</b>
<b>Single year impact</b>	\$255,176
<b>10-year present value of impact</b>	\$2,309,700

**Summary and Conclusion**

This report has described the economic impact that NEDHSA has on its 12-parish operating area in Northeast Louisiana. This report is limited in that it only evaluated the impacts on employment, income, and taxes that result from NEDHSA operations. When socioeconomic impact is included, NEDHSA’s total effect on the region is much broader. Unfortunately, the cost savings realized from NEDHSA’s extensive offering of programs and services is difficult to measure and beyond the scope of this paper. Preventing maladaptive behavioral patterns, addressing issues of homelessness, addiction, and incarceration, as well as providing assistance to those with developmental challenges, NEDHSA makes a significant contribution to the region in terms of cost reductions that would not exist but for the agency’s efforts. For example, if its services result in a working age adult overcoming substance abuse, then the region has gained a valuable resource. If a child receives needed assistance and returns to a positive state of health and mind, then not only has their life been improved but his/her parents worry less, miss less time from work, and become more productive.

These types of socioeconomic impacts, though they form the core of NEDHSA’s mission, are not what are addressed in these types of studies.

The impacts that we described in the body of the report and summarized below address the lost employment, income, and tax revenue should NEDHSA disappear. As this report is being written, our nation, indeed much of the world, is experiencing an unprecedented economic shutdown as a result of COVID-19. While many firms have been forced to curtail operations or completely shut down, the economic damage continues to multiply. It is not only the firms directly affected by the restrictions, but as their workers spend less, other firms find their sales decrease necessitating more layoffs and so on. We do not presume to compare the existence of NEDHSA to the COVID-19 shutdowns, but rather use their example to illustrate how any economic institution creates impacts beyond their immediate employment and spending (Table 1).

**Table 1. Summary of Impacts**

<b>Economic Impacts</b>	<b>Single-Year</b>	<b>10-year Present Value</b>
Household Income	\$15,279,991	\$138,305,287
Regional Value-Added	\$4,434,941	\$40,142,418
Total Transactions	\$21,207,482	\$191,957,370
Full-time Equivalent Jobs	182	N/A
<b>State and Local Tax Revenues</b>	<b>Single Year</b>	<b>10-year Present Value</b>
Local Sales Tax	\$336,180	\$3,042,718
State Sales Tax	\$278,096	\$2,517,158
State Income Tax	\$255,176	\$2,309.70

## Appendix: Selected Parish Economic Indicators<sup>8</sup>

### Caldwell Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	10,559	10,153	10,047	10,075	9,947	9,960
Employment	3,956	3,880	3,804	3,757	3,762	3,784
Per Capita Personal Income (2018 dollars)	\$26,375	\$34,700	\$33,075	\$32,917	\$33,250	\$33,950

### East Carroll Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	9,384	7,737	7,276	7,236	7,133	7,037
Employment	3,288	2,971	2,997	2,935	2,836	2,791
Per Capita Personal Income (2018 dollars)	\$22,230	\$32,609	\$33,389	\$35,719	\$37,021	\$36,010

### Franklin Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	21,261	20,810	20,388	20,371	20,261	20,156
Employment	9,314	8,670	8,308	8,290	8,404	8,467
Per Capita Personal Income (2018 dollars)	\$25,861	\$31,122	\$31,140	\$31,240	\$31,803	\$31,928

### Jackson Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	15,415	16,307	15,948	15,899	15,893	15,902
Employment	5,926	5,231	5,509	5,494	5,436	5,367
Per Capita Personal Income (2018 dollars)	\$33,421	\$35,048	\$34,632	\$33,064	\$33,574	\$34,116

<sup>8</sup> Source: CAINC30 Economic Profile, Bureau of Economic Analysis, U.S. Department of Commerce. Employment includes all covered jobs as well as self-employed. Per capita personal income is shown as constant dollar amount using 2018 dollars.

## Lincoln Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	42,475	46,849	47,437	47,484	47,465	47,196
Employment	23,455	25,038	25,958	26,702	27,054	27,410
Per Capita Personal Income (2018 dollars)	\$29,948	\$35,426	\$39,189	\$38,524	\$39,241	\$40,410

## Madison Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	42,475	12,106	11,554	11,486	11,342	11,196
Employment	5,062	5,062	5,146	5,038	5,038	4,922
Per Capita Personal Income (2018 dollars)	\$21,976	\$25,434	\$31,108	\$32,770	\$31,817	\$32,437

## Morehouse Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	30,961	27,872	26,309	25,910	25,687	25,398
Employment	11,290	10,301	10,428	10,328	10,240	10,142
Per Capita Personal Income (2018 dollars)	\$28,363	\$34,792	\$37,051	\$38,988	\$38,380	\$38,495

## Ouachita Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	147,241	153,967	156,877	156,917	155,757	154,475
Employment	86,965	92,343	98,170	98,850	98,101	98,547
Per Capita Personal Income (2018 dollars)	\$34,453	\$38,059	\$39,821	\$40,115	\$39,896	\$41,053

## Richland Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	20,935	20,759	20,551	20,451	20,415	20,192
Employment	8,189	9,487	9,668	9,589	9,506	9,572
Per Capita Personal Income (2018 dollars)	\$27,027	\$34,675	\$36,797	\$37,090	\$36,688	\$37,330

## Tensas Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	6,535	5,231	4,773	4,657	4,583	4,462
Employment	2,708	2,181	1,989	1,907	1,899	1,886
Per Capita Personal Income (2018 dollars)	\$27,323	\$33,429	\$32,702	\$35,772	\$36,761	\$36,630

## Union Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	22,762	22,832	22,492	22,536	22,454	22,330
Employment	8,128	7,919	8,134	8,057	8,179	8,425
Per Capita Personal Income (2018 dollars)	\$29,332	\$33,735	\$38,035	\$37,220	\$37,839	\$38,794

## West Carroll Parish

Indicator	2000	2010	2015	2016	2017	2018
Population	12,285	11,576	11,286	11,129	10,975	10,982
Employment	4,513	4,176	3,936	4,019	4,066	4,088
Per Capita Personal Income (2018 dollars)	\$19,830	\$27,744	\$31,861	\$34,890	\$35,299	\$36,633