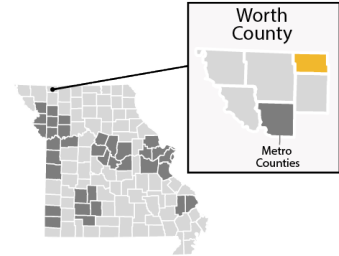


Worth County, Missouri

Broadband Expansion Economic Benefit Analysis

Worth County borders Iowa in the northwest corner of Missouri. Worth County’s 46.9% rate of households with fixed broadband service is just below the Missouri county median value (49.7%). The county’s 2019 population totaled 2,013, making it the smallest county in Missouri for population size.



Two 10-year expansion scenarios estimate the benefits to Worth County if it increased household broadband adoption by 10 (minimum) and 20 (maximum) percentage points. Exhibit W1 shows the number and percent of households assumed to have fixed broadband by year ten. Exhibit W2 shows the total benefit model inputs for each scenario.

Exhibit W1. 10-Year Fixed Broadband Household Adoption Scenarios

Characteristic	Base Value	Minimum Scenario	Maximum Scenario
Households without Fixed Broadband Service	456	370	284
Households with Fixed Broadband Service	403	489	575
Percent of Households with Fixed Broadband Service	46.9%	56.9%	66.9%

Sources: Demographics from U.S. Census Bureau, ACS, 2019 5-Year summary data.

Exhibit W2. 10-Year Economic Benefit Direct Model Inputs

Basic Assumptions	Minimum Scenario	Maximum Scenario
Percent of Households that Adopted Broadband by Year 10	56.9%	66.9%
Broadband Installation Investment to Serve Remaining Households	\$7,108,528	\$7,108,528
Telemedicine Benefits		
Patient Savings from Reduced Use of Emergency Departments	\$340,151	\$680,301
Patient Savings from Initial Health Consultation via Internet	\$161,779	\$323,558
Patient Transportation Savings due to Telemedicine	\$9,060	\$18,121
Missed Work Income Savings to Patient	\$7,918	\$15,837
Education Productivity Benefits		
K12 Teacher Productivity Savings	\$142,674	\$142,674
Income and Employment Benefits		
Household Income Increases	\$128,507	\$514,824
Farm Income Changes	\$1,317,695	\$2,635,390
Annual Average Direct Employment Increases by Year 10	17	33

Notes: Dollar values represent 10-year benefit in nominal figures.

ECONOMIC BENEFITS OF EXPANDING BROADBAND IN MISSOURI

Worth County 10-Year Broadband Expansion Benefit Results

Benefits arise from both fixed broadband infrastructure construction and household broadband adoption. In year two, the construction investments and expanded household adoption benefits begin. The temporary construction activity, and associated jobs, concludes in year five. In each scenario, new jobs, labor income and GDP include the total impact of direct inputs (from Exhibit W2) and indirect purchases, such as new local spending in the county spurred by those inputs.

Minimum Scenario: 10 Percentage Point Gain in Fixed Broadband Adoption over 10 Years

In the minimum scenario, the annual average increase of 22 jobs is realized in year 10. On average, annual employment is 2.4% higher than 2019 county employment. This scenario adds an annual average of 2.1% and 1.6%, respectively, to county labor income and GDP relative to 2019.

Exhibit W3. Minimum Scenario – Total Economic Benefits by Year

Characteristic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10-Year Total*	Avg. Annual Change**
New Annual Average Employment	N/A	28	30	33	35	12	14	17	19	22	22	2.4%
New Labor Income (in Millions)	N/A	\$0.4	\$0.5	\$0.6	\$0.6	\$0.3	\$0.3	\$0.4	\$0.5	\$0.5	\$4.1	2.1%
New GDP (in Millions)	N/A	\$0.6	\$0.7	\$0.8	\$0.9	\$0.4	\$0.5	\$0.6	\$0.7	\$0.7	\$6.0	1.6%

Notes: All income and GDP figures in 2022 dollars. *Total employment is for year 10 as jobs are not cumulative, and other figures are cumulative totals. **Average annual change compared to 2019 county employment, income and GDP totals.

Maximum Scenario: 20 Percentage Point Gain in Fixed Broadband Adoption over 10 Years

In the maximum scenario, Worth County sees the annual average increase of 43 jobs in year 10. On average, annual employment is 3.6% higher than 2019 county employment. This scenario adds an annual average of 3.4% and 2.6%, respectively, to labor income and GDP relative to 2019.

Exhibit W4. Maximum Scenario – Total Economic Benefits by Year

Characteristic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10-Year Total*	Avg. Annual Change**
New Annual Average Employment	N/A	30	35	40	45	24	29	34	38	43	43	3.6%
New Labor Income (in Millions)	N/A	\$0.5	\$0.6	\$0.7	\$0.8	\$0.6	\$0.7	\$0.8	\$0.9	\$1.0	\$6.7	3.4%
New GDP (in Millions)	N/A	\$0.7	\$0.9	\$1.1	\$1.3	\$0.8	\$1.0	\$1.2	\$1.3	\$1.5	\$9.7	2.6%

Notes: All income and GDP figures in 2022 dollars. *Total employment is for year 10 as jobs are not cumulative, and other figures are cumulative totals. **Average annual change compared to 2019 county employment, income and GDP totals.

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