

Job Creation Estimates for Michigan through U.S. THRIVE Agenda

Program to Transform, Heal, and Renew by Investing in a Vibrant Economy—THRIVE

This report presents estimates of the job creation that would result in Michigan if the U.S. Congress passes economic recovery legislation that implements a national THRIVE investment agenda, as described in a September 2020 Congressional resolution.¹ The overall finding we report here is that implementing the 10-year THRIVE investment agenda in Michigan would generate about 260,000 jobs in the first full year of the program. This higher level of employment in Michigan would be sustained throughout the 10 years of the investment program (assuming no other major changes in Michigan's economy were to occur).² Thus, if the THRIVE program were implemented in full in 2021, employment in Michigan would increase by 260,000 jobs and that higher level of employment would continue in the state as the 10-year program continues until 2030.

The Congressional resolution's commitment is to "Transform, Heal and Renew by Investing in a Vibrant Economy"—i.e. "THRIVE"—through a range of investments to rebuild the U.S. economy. To date, the THRIVE Agenda has been endorsed by more than 100 members of Congress, including Senate Majority Leader Chuck Schumer, and hundreds of major union, racial justice, and climate organizations.³ The aims of the THRIVE Agenda are similar to those proposed in the Build Back Better program advanced by President Biden during his 2020 presidential campaign.

1 <https://www.congress.gov/bill/116th-congress/house-resolution/1102/text>

2 Of course, other changes in Michigan's economy will occur over the 10-year period 2021 – 2030, often in ways that cannot be predicted in advance. Still, our estimate of a 260,000 increase in employment under an "all else equal" assumption provides a benchmark for measuring the extent to which the THRIVE Agenda will expand job opportunities in the state, even after we allow that, in reality, economic conditions will undergo changes between 2021- 2030.

3 <https://www.thriveagenda.com>

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The THRIVE Agenda consists of four major investment areas:

1. Clean renewable energy and energy efficiency: To expand access to renewable energy and improve the energy efficiency of vehicles, buildings, and industries so as to achieve the climate stabilization goals set out by the Intergovernmental Panel on Climate Change (IPCC) of reducing carbon dioxide emissions by 45 percent by 2030 and to reach net zero emissions by 2050.

2. Infrastructure: To expand access to affordable transportation, high-speed broadband, clean water, upgrade parks and other public amenities, reduce pollution, and strengthen the public resources needed to undergird a manufacturing revival.

3. Agriculture and land restoration: To expand opportunities for family farmers, including younger farmers and people of color, and to support regenerative agriculture, local and regional food systems, and climate resilience.

4. Care economy, public health, and the postal system: To significantly expand and enhance the level of service provision in these crucial areas of the economy and to raise job quality standards—including wages, benefits, and workplace conditions—for workers employed in these activities.

For the U.S. as a whole, the THRIVE Agenda is designed as a 10-year investment program, with an average annual budget of \$954 billion.⁴ This would amount to about 4.0 percent of average U.S. Gross Domestic Product over 2021 – 2030, assuming that the U.S. economy grows at about 2.2 percent per year.

Our job creation estimates for Michigan result from the state receiving its share of the overall THRIVE budget based on its share of the U.S. population. Because Michigan accounts for 3.0 percent of the U.S. population, its share of the \$954.2 billion annual U.S. THRIVE budget would be \$28.9 billion per year (with rounding). The proportions of total THRIVE spending in Michigan will also be equal to their respective shares for the overall U.S. economy. In Table 1, we show Michigan's annual budget allocations by investment area under THRIVE between 2021 – 2030. They amount to: \$10.9 billion for clean renewable energy and energy efficiency; \$9.8 billion for infrastructure; \$5.7 billion for agriculture and land restoration; and \$2.5 billion for the care economy, public health and postal service.

As we noted above and present in detail in the following tables, this level of investment spending in Michigan will generate an average of about 260,000 jobs within the state. This is equal to 5.2 percent of Michigan's labor force as of February 2020. To illustrate the potential impact of this level of job creation in Michigan, let us assume that these investments are undertaken in the state, and all else about the state's economy were to remain

⁴ In our March 2021 report *Employment Impacts of Proposed U.S. Economic Stimulus Programs: Job Creation, Job Quality, and Demographic Distribution Measures*, we describe the components of the overall U.S. THRIVE Agenda and the sources for the budget figures in the program's various investment areas. We also present details on our methodology for estimating job creation figures and related data presented for the national THRIVE program: <https://www.peri.umass.edu/publication/item/1397-employment-impacts-of-proposed-u-s-economic-stimulus-programs>.

TABLE 1: U.S. THRIVE Agenda Budget and Michigan Budget Allocations through THRIVE
Michigan population = 3.0% of U.S. population

	Overall U.S. THRIVE Agenda Budget		Michigan THRIVE Agenda Budget Allocations
	U.S. THRIVE Agenda Budget Allocations	Shares of U.S. THRIVE Agenda Budget Allocations	
Clean renewable energy and energy efficiency	\$358.8 billion	37.6%	\$10.9 billion
Infrastructure	\$324.3 billion	34.0%	\$9.8 billion
Agriculture and land restoration	\$186.6 billion	19.5%	\$5.7 billion
Care economy, public health, and postal service	\$84.5 billion	8.9%	\$2.5 billion
Totals	\$954.2 billion	100%	\$28.9 billion

Source: <https://www.peri.umass.edu/publication/item/1397-employment-impacts-of-proposed-u-s-economic-stimulus-programs>.

equal. Under such an “all else equal” assumption, this level of job creation would result, for example, in the state’s unemployment rate falling to 2.6 percent from its average level of 7.8 percent between July – December 2020. A reduction in Michigan’s unemployment rate at something approximate to this scale would represent a major expansion in job opportunities throughout the state. Indeed, implementing the THRIVE Agenda in Michigan would likely encourage a large number of people to enter Michigan’s labor force, or to reenter after having dropped out because their prospects for getting hired had been discouraging. Overall, the rise in the state’s employment opportunities will provide a foundation for a broader improvement in living conditions for the people of Michigan.⁵

Of course, this expansion in job opportunities would be in addition to the benefits to the people of Michigan through implementing the THRIVE investment program—i.e. the benefits resulting from building a clean energy system throughout the state; deepening the state’s commitment to protecting its environment; enhancing productivity and business opportunities through upgrading the state’s infrastructure; widening opportunities in agriculture and land restoration; and raising quality standards in the provision of care economy, health care and postal delivery services.

⁵ In *Employment Impacts of Proposed U.S. Economic Stimulus Programs*, as cited above, we provide evidence on job creation at the national level within five major sectors of the U.S. economy: manufacturing; services; construction; wholesale and retail trade; and agriculture. For example, we report that manufacturing employment through the national THRIVE program will amount to 1.6 million jobs, equal to 10.3 percent of the 15.5 million overall level of job creation. This study of the U.S. economy-wide impact of the THRIVE Agenda also includes data on 1) wages, benefits and unionization rates for workers currently employed in the range of activities associated with the THRIVE Agenda; 2) educational attainment levels of these workers; and 3) shares of women and people of color employed in these activities at present.

MICHIGAN Energy Efficiency and Clean Renewable Energy Investments through THRIVE Agenda

TABLE 2A: Energy Efficiency and Clean Renewable Energy Investments: Job Creation—Direct, Indirect, and Induced Jobs

	Job Creation per \$1 Million in Spending			
	1) Direct Jobs	2) Indirect Jobs	3) Induced Jobs	4) Total Jobs
Energy efficiency				
Building retrofits	4.5	2.5	2.6	9.6
Industrial efficiency	3.0	1.1	1.6	5.7
High-efficiency autos	0.4	0.6	0.6	1.6
Renewable energy				
Wind energy	1.8	0.8	1.1	3.7
Solar energy	2.3	1.1	1.5	4.9
Geothermal energy	5.1	2.0	3.0	10.1

TABLE 2B: Energy Efficiency and Clean Renewable Energy Investments: Total Jobs Created with Budgetary Figures

	1) Total Jobs/ \$1 Million	Annual Job Creation		Job-Years Created, All Years		
		Annual Budget	Job Creation per Year	# of Years	Total Budget	Total Job Years
Energy efficiency						
Building retrofits	9.6	\$1.7 billion	16,300	10	\$17.0 billion	163,000
Industrial efficiency	5.7	\$190.6 million	1,100	10	\$1.9 billion	11,000
High-efficiency autos	1.6	\$1.7 billion	2,700	10	\$17.0 billion	27,000
Renewable energy						
Wind energy	3.7	\$3.3 billion	12,200	10	\$33.0 billion	122,000
Solar energy	4.9	\$3.3 billion	16,200	10	\$33.0 billion	162,000
Geothermal energy	10.1	\$726.0 million	7,300	10	\$7.3 billion	73,000
Total		\$10.9 billion	55,800	10	\$109.0 billion	558,000

MICHIGAN Infrastructure Investments through THRIVE Agenda

TABLE 3A: Infrastructure Investments: Job Creation—Direct, Indirect, and Induced Jobs

	Job Creation per \$1 Million in Spending			
	1) Direct Jobs	2) Indirect Jobs	3) Induced Jobs	4) Total Jobs
Surface transportation	7.2	1.3	2.2	10.7
Water/wastewater	4.9	1.7	2.7	9.3
Electricity	1.6	0.5	0.8	2.9
Airports	2.8	0.9	1.6	5.3
Inland waterways/marine ports	2.8	1.2	1.6	5.6
Dams	7.3	2.0	3.7	13.0
Hazardous and solid waste	6.0	2.2	2.9	11.1
Levees	7.4	2.1	3.8	13.3
Public parks and recreation	8.5	1.9	2.6	13.0
Rail	2.2	0.8	1.3	4.3
Schools	11.6	1.6	3.7	16.9
Gas distribution pipelines—leak repairs only	1.2	2.1	1.7	5.0
Broadband	1.8	1.5	1.2	4.5

TABLE 3B: Infrastructure Investments: Total Jobs Created with Budgetary Figures

	1) Total Jobs/ \$1 Million	Annual Job Creation		Job-Years Created, All Years		
		Annual Budget	Job Creation per Year	# of Years	Total Budget	Total Job Years
Surface transportation	10.7	\$3.3 billion	35,300	10	\$33.0 billion	353,000
Water/wastewater	9.3	\$1.0 billion	9,300	10	\$10.0 billion	93,000
Electricity	2.9	\$1.3 billion	3,800	10	\$13.0 billion	38,000
Airports	5.3	\$127.0 million	700	10	\$1.3 billion	7,000
Inland waterways/ marine ports	5.6	\$45.4 million	300	10	\$454.0 million	3,000
Dams	13.0	\$118.0 million	1,500	10	\$1.2 billion	15,000
Hazardous and solid waste	11.1	\$9.1 million	100	10	\$91.0 million	1,000
Levees	13.3	\$211.7 million	2,800	10	\$2.1 billion	28,000
Public parks and recreation	13.0	\$308.5 million	4,000	10	\$3.1 billion	40,000
Rail	4.3	\$632.2 million	2,700	10	\$6.3 billion	27,000
Schools	16.9	\$1.1 billion	18,600	10	\$11.0 billion	186,000
Gas distribution pipe- lines—leak repairs only	5.0	\$553.6 million	2,800	10	\$5.5 billion	28,000
Broadband	4.5	\$1.1 billion	5,000	10	\$11.0 billion	50,000
Total		\$9.8 billion	86,900	10	\$98.0 billion	869,000

MICHIGAN Agriculture and Land Restoration Investments through THRIVE Agenda

**TABLE 4A: Agriculture and Land Restoration Investments: Job Creation—
Direct, Indirect, and Induced Jobs**

	Job Creation per \$1 Million in Spending			
	1) Direct Jobs	2) Indirect Jobs	3) Induced Jobs	4) Total Jobs
<i>Agriculture</i>				
Regenerative agriculture	8.6	2.0	1.2	11.8
Farmland conservation	6.2	1.7	1.9	9.8
Organic farming	8.6	2.0	1.2	11.8
Resources for marginalized farmers	8.5	1.9	2.4	12.8
Agricultural R&D	5.3	2.7	2.9	10.9
<i>Land restoration</i>				
Pollution cleanup	6.3	2.0	3.0	11.3
Closing orphaned wells	1.1	1.5	1.4	4.0
Ecosystem restoration	10.6	2.0	3.0	15.6

TABLE 4B: Agriculture and Land Restoration Investments: Total Jobs Created with Budgetary Figures

	1) Total Jobs/ \$1 Million	Annual Job Creation		Job-Years Created, All Years		
		Annual Budget	Job Creation per Year	# of Years	Total Budget	Total Job Years
<i>Agriculture</i>						
Regenerative agriculture	11.8	\$1.2 billion	14,200	10	\$12.0 billion	142,000
Farmland conservation	9.8	\$756.2 million	7,400	10	\$7.6 billion	74,000
Organic farming	11.8	\$45.4 million	500	10	\$454.0 million	5,000
Resources for marginalized farmers	12.8	\$2.8 billion	35,800	10	\$28.0 billion	358,000
Agricultural R&D	10.9	\$75.6 million	800	10	\$756.0 million	8,000
<i>Land restoration</i>						
Pollution cleanup	11.3	\$381.1 million	4,300	10	\$3.8 billion	43,000
Closing orphaned wells	4.0	\$363.0 million	1,500	10	\$3.6 billion	15,000
Ecosystem restoration	15.6	\$30.2 million	500	10	\$302.0 million	5,000
Total		\$5.7 billion	65,000	10	\$57.0 billion	650,000

MICHIGAN Care Economy, Public Health, and Postal Service Investments through THRIVE Agenda

**TABLE 5A: Care Economy, Public Health, and Postal Service Job Creation—
Direct, Indirect, and Induced Jobs**

	Job Creation per \$1 Million in Spending			
	1) Direct Jobs	2) Indirect Jobs	3) Induced Jobs	4) Total Jobs
Care economy	15.4	1.9	4.1	21.4
Public health	7.6	2.3	3.3	13.2
Postal service	6.7	1.0	3.6	11.3

**TABLE 5B: Care Economy, Public Health, and Postal Service Investments:
Total Jobs Created with Budgetary Figures**

	1) Total Jobs/ \$1 Million	Annual Job Creation		Job-Years Created, All Years		
		Annual Budget	Job Creation per Year	# of Years	Total Budget	Total Job Years
Care economy	21.4	\$2.3 billion	49,200	10	\$23.0 billion	492,000
Public health	13.2	\$136.1 million	1,800	10	\$1.4 billion	18,000
Postal service	11.3	\$75.6 million	900	10	\$756.0 million	9,000
Total		\$2.5 billion	51,900	10	\$25.0 billion	519,000

TABLE 6: MICHIGAN Job Creation Estimates through all THRIVE Agenda Investments

	Annual Budget and Job Creation Figures		Total Budget and Job-Years Figures	
	Annual Budget	Annual Job Creation	Total Budget	Total Job Creation, Job Years
Infrastructure investments	\$9.8 billion	86,900	\$98.0 billion	869,000
Clean energy investments	\$10.9 billion	55,800	\$109.0 billion	558,000
Agriculture and land restoration investments	\$5.7 billion	65,000	\$57.0 billion	650,000
Care economy, public health, and postal service investments	\$2.5 billion	51,900	\$25.0 billion	519,000
Total	\$28.9 billion	259,600	\$289.0 billion	2,596,000

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