

Economic Impact of the Illinois Autonomous and Connected Track (I-ACT) on the State of Illinois



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I-ACT planning is underway, and it will become operational in 2025. **I-ACT is anticipated to generate \$3.53 billion in total impact on the State's economy, \$483 million in total (local, state, and federal) tax revenue, and more than 23,000 full-time equivalent jobs by 2050.**

The Illinois Autonomous and Connected Track (I-ACT) is a *flagship investment of a consortium of public and private sector partners who are building the future of mobility*. It combines Illinois' unique strengths on mobility and establishes strategic partnerships between government agencies, academic universities, key industries, and nonprofit organization partners. This broad consortium represents much of the economy: agriculture, autonomy, energy, e-commerce, construction, freight, information technology, infrastructure, logistics, and others. The stakeholders will benefit from advances to create a safe and reliable mobility ecosystem—especially the flexible integration of future technologies.

I-ACT offers a unique opportunity *to fundamentally transform the future of mobility and support the development of safe, equitable, accessible, environmentally conscious, and innovative multimodal transportation for many communities within Illinois and the nation at large*. I-ACT will collectively feature high-speed freight platooning and vehicle loops; connected infrastructure and large data-handling; multimodal transport (road, air, rail); controlled and four-season climatic conditions; energy harvesting; electrification; urban, suburban, and rural settings; dynamic vehicle testing; drone technology; and an agricultural test bed and market roads. Several innovative projects are currently underway, funded by the Illinois Department of Transportation (IDOT). I-ACT stakeholders and partners will prioritize and advance its mission on safety, effective orchestration of an advanced transportation ecosystem, equitable and accessible mobility services, reliable, secure, and transparent information sharing, as well as safeguard negative societal and environmental impacts of technologies. I-ACT will have direct, positive impacts on national transportation infrastructure through technology acceptance policies, compliance protocols, deployment measures, regulatory practices, and integration guidance. This report presents the economic feasibility of I-ACT as well as the cost-benefit ratio for the State of Illinois.

Economic Impact Estimate—Executive Summary

This report examines the benefits of I-ACT to the economy of the State of Illinois over fiscal years 2021–2050, spanning over planning, construction, and full operational status of the testing arena. All required and associated supply-chain services at the statewide level were implemented, motivated by the fact that the companies that will support the planning, design, construction, and operation of I-ACT, as well as the expected users, may be located beyond Champaign County, Illinois. However, results from the same analysis bounded within Champaign County (assuming that all services are located within the county limits) are available upon request. Five categories following the timeline of I-ACT activities are included: planning and administration, construction, operation and maintenance (O&M), research projects, and new businesses. Correspondingly, the impact of each category on the creation of a) economic output (production), b) employment (full-time equivalent [FTE]), c) labor income, d) local and state tax revenue, and e) federal tax revenue was calculated. In addition, type 1 multipliers reflect the ratio of combined direct and indirect

effects over the direct effect. The multiplier is a measure of I-ACT's connection to the local economy as well as additional benefits to the broader economy, including the capacity to attract students and faculty globally. The lifetime earnings of I-ACT beyond 2050 cannot easily be quantified; hence, they are not part of this report.

The cost estimate for I-ACT planning and construction is \$69 million. I-ACT has received \$15 million of land and buildings pledged by the Village of Rantoul, \$5 million in hand from university units, and \$0.8 million for planning from IDOT. The forecasted values for planning and construction were cross-checked by IDOT, whereas the ones for O&M, new research projects, and businesses were established using publicly available information from other testing facilities. Please note that all reported values in Table 1 are normalized to the dollar value of year 2021 for ease of comparison and relevance to today's economy.

Table 1. Direct Investments in I-ACT (2021 \$ million values)

Category	Analysis Period	Direct investment (million \$)
Planning and administration	Apr 2021–Dec 2022	4.03
Construction and instrumentation*	Jan 2023–Dec 2024	48.20
Operation and maintenance*	Jan 2023–Dec 2050	134.05
Research projects*	Jan 2023–Dec 2050	926.43
New businesses*	Jan 2026–Dec 2050	659.74
Total	Apr 2019–Dec 2050	1,772.46

*Note: Forecasted values.

Analysis Highlights

Evaluation of I-ACT's impact on the State's economy indicate the following:

- All stages of I-ACT (from planning to full operation) are anticipated to generate \$3.53 billion in total impact on the State's economy, \$483 million in total (local, state, and federal) tax revenue, and 23,215 FTE jobs by 2050.
- Planning and administration, construction, and O&M of the project are expected to generate \$186 million in total impact and about \$390 million in total (direct, indirect, and induced) impact on the Illinois economy.
- Forecasted impacts of new research and businesses are based on publicly available information on other testing facilities. A total impact of \$3.14 billion on Illinois' economy and approximately 20,815 jobs by 2050 are expected. In addition, \$116 million and \$318 million in additional local/state and federal tax revenue, respectively, are anticipated by 2050.

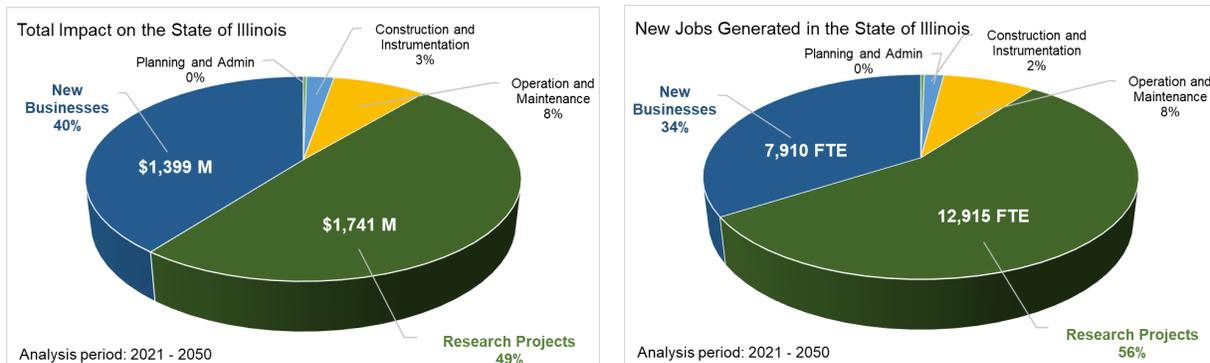


Fig. 1. I-ACT impact on the Illinois economy: expenditures and new jobs.

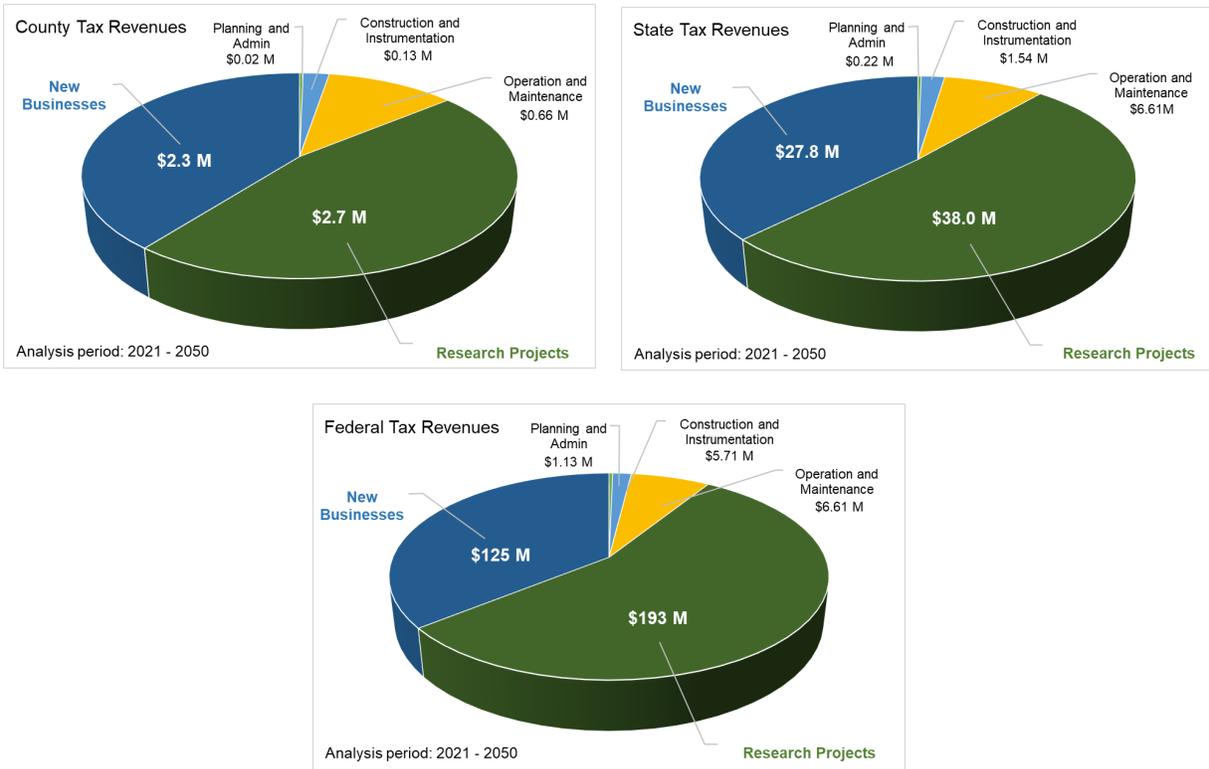


Fig. 2. I-ACT impact on Illinois tax revenues.

I-ACT is poised to generate \$1.4 billion and \$1.7 billion for new businesses and research projects, respectively, reflecting the portfolio of multi- and interdisciplinary research and business ventures over the nearly 30-year analysis period (Fig 1). A total of 7,909 and 12,915 FTE hours of new jobs are expected for new businesses and research projects, respectively. Additionally, the joint investment in I-ACT will generate significant tax revenues at the local, state, and federal levels (Fig 2)—predominantly stemming from research and entrepreneurship ventures related to I-ACT. Over 2023 to 2050, I-ACT is expected to attract research projects worth over \$1 billion in Illinois’ economy and support nearly 13,000 direct and indirect jobs—accounting for around \$1.7 billion in labor income. In addition, I-ACT is anticipated to attract new businesses (assumed within 2026 to 2050) that shall lead to an additional 7,909 jobs within Illinois, an impact of \$1.3 billion in the economy, and \$176 million in total local, state, and federal tax revenues.

It is worth noting that the tax revenues remain apparent at the early stages of planning and construction of I-ACT. By itself, planning and administration (2021–2022) generated about \$10.2 million in total impact on Illinois’ economy, which includes the creation of 75 direct and indirect jobs. Moreover, construction (2023–2024) generated a revenue of around \$85.9 million and \$8.6 million in local, state, and federal taxes. Operation and maintenance (assumed within 2023 to 2050) are expected to generate a total impact of nearly \$294 million with a corresponding \$37.8 million in tax revenue.

Table 2 details the results for the statewide impact of I-ACT on the Illinois economy, particularly, the type 1 multipliers. For example, given a multiplier of 2.55 in the planning and administration stage, for every \$1 spent, the total production created from direct and indirect effects is \$2.55. The same applies for the employment multiplier, wherein for each job created

directly by I-ACT, 0.96 job is created indirectly in Illinois so that the job multiplier is 1.96. Lastly, the tax revenue multipliers indicates that for every \$1 of direct tax revenue collected, an additional \$4.10 and \$0.75 in tax revenues are collected at the state/local and federal levels, respectively. The same principle can be applied to the rest of I-ACT activities throughout the assumed analysis period from 2021 to 2050.

Table 2. Detailed Economic Impact Results for Illinois (in 2021 \$ million values)

Illinois	Economic Output	Employment (FTE*years)	Labor Income	Local and State Fiscal Revenue	Federal Fiscal Revenue
Planning and Administration (Apr 2021–Dec 2022)					
Direct Effect	\$4.03	38.32	\$3.64	\$0.08	\$0.65
Total Effect	\$10.27	75.20	\$5.94	\$0.42	\$1.13
Multiplier	2.55	1.96	1.63	5.10	1.75
Construction and Instrumentation (Jan 2023–Dec 2024)					
Direct Effect	\$48.21	211.25	\$15.37	\$0.71	\$3.09
Total Effect	\$85.96	398.50	\$27.57	\$2.91	\$5.71
Multiplier	1.78	1.89	1.79	4.09	1.84
Operation and Maintenance (Jan 2023–Dec 2050)					
Direct Effect	\$134.05	1067.08	\$74.67	\$2.71	\$13.39
Total Effect	\$294.23	1916.63	\$125.29	\$13.39	\$24.37
Multiplier	2.19	1.80	1.68	4.94	1.82
Research Projects (Jan 2023–Dec 2050)					
Direct Effect	\$926.44	8208.56	\$665.53	\$18.97	\$132.99
Total Effect	\$1,741.47	12915.17	\$950.17	\$65.67	\$193.39
Multiplier	1.88	1.57	1.43	3.46	1.45
New Businesses (Jan 2026–Dec 2050)					
Direct Effect	\$659.74	3516.54	\$359.55	\$12.70	\$67.42
Total Effect	\$1,398.97	7909.89	\$638.32	\$51.23	\$125.29
Multiplier	2.12	2.25	1.78	4.03	1.86
Total (Apr 2021–Dec 2050)					
Direct Effect	\$1,772.46	13041.75	\$1,118.76	\$35.18	\$217.55
Total Effect	\$3,530.89	23215.39	\$1,747.30	\$133.62	\$349.88
Multiplier	1.99	1.78	1.56	3.80	1.61

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Appendix

Data: This analysis relies on the newly updated IMPLAN® model (version 6), a commonly used analytical tool for impact analysis at different spatial scales. It relies on the input-output framework initially developed by the Nobel Prize recipient Wassily Leontief. The strength of this technique is to capture all the supply chain linkages across economic sectors. A new investment in one sector (output) stimulates all the sectors that provide inputs (directly and indirectly) to that sector.

Effects: Each new investment will generate a set of direct, indirect, and induced effects. The direct effect is the value of the investment (in 2021 dollar in our case). The indirect effect corresponds to the change in all the inputs needed to satisfy the new demand created by the direct effect. The induced effect corresponds to the expenses done by the employees working in the sectors of the direct and indirect effects. The total effect is the sum of the direct, indirect, and induced effects.

Multipliers: Several multipliers are reported in this study. Each is a type 1 multiplier that corresponds to the ratio of the total effect on the direct effect (investment or expense):

- Output multiplier corresponds to the total production created per dollar of investment.
- Tax multiplier corresponds to the total amount of tax revenue generated per dollar of tax revenue generated by the direct investment.
- Employment multiplier corresponds to the total number of FTE jobs created per number of FTE jobs created by the direct investment. It corresponds to the total hours worked divided by the average annual hours worked in full-time jobs.
- Labor income multiplier corresponds to the total labor income created per dollar of labor income created by the direct investment.