

Economic and Fiscal Impact of Towson University in FY 2022

Towson University's Regional Economic Studies Institute (RESI) was tasked by Towson University (TU) to conduct a study of the economic impact of TU in fiscal year (FY) 2022. This document presents the preliminary findings of the analysis.

To estimate the economic and fiscal impacts, the IMPLAN model of Maryland's economy in 2019 was used.¹ IMPLAN is an industry-recognized input-output model based on the idea of multipliers, which estimate additional economic activity stemming from an initial transaction. Consider the following example: a biology student takes a lab course. Their tuition for the course is used to buy lab materials from a supplier and to keep the lab facilities operational. In addition, those tuition dollars help to pay the wages of the professor and teaching assistants, as well as employees who work for the supplier. Thus, while the student directly pays tuition for the course, there are secondary "ripple effects" as well. These secondary ripple effects can be categorized as indirect impacts, which are associated with suppliers, and induced impacts, which are associated with increased household spending by people who work for the direct employer or suppliers. The IMPLAN model is calibrated to estimate these direct, indirect, and induced effects throughout Maryland's economy.

For this analysis of TU's impact on Maryland's economy, four spending categories were considered. They are:

1. TU's operational expenditures FY 2022,
2. TU's capital expenditures for FY 2022,
3. TU student spending at off-campus entities, and
4. The net present value of increased career earnings for TU's Class of 2021 graduates.

In addition to the overall impacts of TU on Maryland's economy, summary impacts for each category will be presented in this report, along with a brief overview of methodology and assumptions. For additional information regarding the modeling process, please see Appendix A. Detailed impacts are presented in Appendix B.

The overall economic impacts are presented in Figure 1.

Figure 1: Economic Impacts of Towson University on Maryland's Economy, FY 2022

	Direct	Indirect	Induced	Total
Employment	4,782	461	2,301	7,544
Output	\$523,151,639	\$91,864,898	\$1,462,935,908	\$2,077,952,446
Employee Compensation	\$324,167,488	\$21,453,140	\$400,421,664	\$746,042,291

Sources: IMPLAN, RESI

¹ While IMPLAN has released a model for 2020, it was not used for this analysis. The 2020 data are an outlier that reflect the beginning of the COVID-19 pandemic and subsequent shutdowns.

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As seen above, economic activity associated with TU supports a total of 7,544 jobs, \$2.1 billion in output, and \$746.0 million in employee compensation in FY 2022. Induced impacts, or those associated with increased household spending from earnings, form the most significant contributor to these impacts for output and employee compensation. These economic impacts also support tax revenues for state and county governments, as shown in Figure 2.

Figure 2: Total Fiscal Impacts Associated with Towson University, FY 2022

Jurisdiction	Property	Income	Sales and Related ²	Payroll	Other	Total
County Taxes	\$36,812,456	\$10,668,801	\$3,686,959	\$0	\$3,786,383	\$54,954,599
State Taxes	\$3,917,451	\$20,815,636	\$45,103,987	\$436,709	\$10,004,938	\$80,278,721

Sources: IMPLAN, RESI

Total economic activity associated with TU supports an estimated \$55.0 million in county taxes and nearly \$80.3 million in State taxes. Property tax revenues form the majority of county taxes, while sales tax revenues form the majority of taxes to the State.

1.1 Operations Impacts

The first impact category considered in this analysis was for daily operations of TU's campus. Expenditures data were obtained from TU's FY 2022 Operating Budget.³ Impacts are presented in Figure 3.

Figure 3: Economic Impacts Associated with TU's Campus Operations, FY 2022

	Direct	Indirect	Induced	Total
Employment	3,397	250	1,818	5,465
Output	\$322,865,140	\$50,378,426	\$312,754,235	\$685,997,801
Employee Compensation	\$288,185,951	\$9,718,109	\$86,744,420	\$384,648,481

Sources: IMPLAN, RESI

As seen above, TU operations support a total of 5,465 employees, \$686.0 million in output, and \$384.6 million in employee compensation. These total economic impacts support tax revenues, as shown in Figure 4.

² While sales taxes are levied at the state level, IMPLAN computes and reports related taxes, such as admissions and amusement taxes, gas taxes, and hotel occupancy taxes within the sales tax grouping.

³ Towson University, "Internal Operating Budget & Plan Fiscal Year 2022," 7, October 2021, https://www.towson.edu/budgetoffice/documents/fy22_operating_budget_plan.pdf.

Figure 4: Total Fiscal Impacts Associated TU's Campus Operations, FY 2022

Jurisdiction	Property	Income	Sales and Related ⁴	Payroll	Other	Total
County Taxes	\$8,508,422	\$5,851,867	\$852,163	\$0	\$875,142	\$16,087,594
State Taxes	\$905,436	\$11,428,282	\$10,424,835	\$255,198	\$2,977,367	\$25,991,119

Sources: IMPLAN, RESI

Economic activity related to the daily operations of TU's campus supports nearly \$16.1 million in fiscal impacts to county governments and almost \$26.0 million in fiscal impacts to the State of Maryland. Property taxes form the majority of county taxes, while income taxes form the plurality of state taxes.

1.2 Capital Expenditures Impacts

In FY 2022, four capital projects received funding totaling \$24.6 million.⁵ These projects include Glen Towers (residential construction), the University Union (non-academic, non-residential construction), the Science Complex (academic building construction), and the College of Health Professions (academic building construction). The economic impacts associated with this capital spending are presented in Figure 5.

Figure 5: Economic Impacts Associated with TU's Capital Expenditures, FY 2022

	Direct	Indirect	Induced	Total
Employment	178	27	61	266
Output	\$24,631,840	\$6,082,128	\$10,444,715	\$41,158,683
Employee Compensation	\$9,604,782	\$1,685,828	\$2,902,849	\$14,193,459

Sources: IMPLAN, RESI

As seen above, TU's capital expenditures in FY 2022 support a total of 266 jobs, \$41.2 million in output, and \$14.2 million in employee compensation. The fiscal impacts associated with this economic activity are presented in Figure 6 below.

Figure 6: Total Fiscal Impacts Associated with TU's Capital Expenditures, FY 2022

Jurisdiction	Property	Income	Sales and Related ⁶	Payroll	Other	Total
County Taxes	\$392,671	\$192,991	\$39,328	\$0	\$40,389	\$665,378
State Taxes	\$41,787	\$376,781	\$481,114	\$8,248	\$107,798	\$1,015,728

Sources: IMPLAN, RESI

⁴ While sales taxes are levied at the state level, IMPLAN computes and reports related taxes, such as admissions and amusement taxes, gas taxes, and hotel occupancy taxes within the sales tax grouping.

⁵ Email from Ben Lowenthal to Daraius Irani

⁶ While sales taxes are levied at the state level, IMPLAN computes and reports related taxes, such as admissions and amusement taxes, gas taxes, and hotel occupancy taxes within the sales tax grouping.

Economic activity associated with capital construction on TU's campus supports a total of \$0.7 million in county taxes and \$1.0 million in state taxes. Property taxes form the majority of taxes paid at the county level, while sales taxes form the plurality of taxes to the State.

1.3 Student Spending Impacts

Student spending at off-campus entities was estimated based on published cost of attendance figures for full-time undergraduate and graduate students.⁷ For undergraduate students who reside on campus, spending was estimated for the following categories: transportation and personal expenses. For undergraduate students who reside off campus as well as all graduate students, spending was estimated for the following categories: room/board, books/supplies, as well as transportation and personal expenses. The economic impacts associated with this spending are presented in Figure 7.

Figure 7: Economic Impacts Associated with Off-campus Student Spending, FY 2022

	Direct	Indirect	Induced	Total
Employment	1,208	183	208	1,599
Output	\$175,654,659	\$35,404,344	\$35,714,526	\$246,773,530
Employee Compensation	\$26,376,755	\$10,049,203	\$9,928,772	\$46,354,729

Sources: IMPLAN, RESI

As seen above, off-campus student spending supports a total of 1,599 jobs, \$246.8 million in output, and \$46.4 million in employee compensation. The associated fiscal impacts are in Figure 8 below.

Figure 8: Total Fiscal Impacts Associated with Off-campus Student Spending, FY 2022

Jurisdiction	Property	Income	Sales and Related ⁸	Payroll	Other	Total
County Taxes	\$6,273,904	\$662,606	\$628,364	\$0	\$645,309	\$8,210,183
State Taxes	\$667,647	\$1,293,059	\$7,687,020	\$27,505	\$1,688,405	\$11,363,636

Sources: IMPLAN, RESI

Student spending at off-campus ventures supports a total of \$8.2 million in taxes to county governments and nearly \$11.4 million in tax revenues to the state of Maryland. Property taxes form the majority of county tax revenues, while sales taxes form the majority of state tax revenues.

⁷ "Cost of Attendance," Towson University, accessed December 10, 2021, <https://www.towson.edu/admissions/tuition/cost.html>.

⁸ While sales taxes are levied at the state level, IMPLAN computes and reports related taxes, such as admissions and amusement taxes, gas taxes, and hotel occupancy taxes within the sales tax grouping.

1.4 Net Present Value of Class of 2021 Income Differential Impacts

Overall, incomes are higher for individuals with higher levels of educational attainment; TU's Class of 2021 graduated 4,628 undergraduate and 1,019 graduate students.^{9,10} Income differentials of increased educational attainment were estimated for a 30-year career span. The net present value in 2021 of these differentials was then calculated. A full set of assumptions is detailed in Appendix A. The economic impact of this increased income for the Class of 2021 is displayed in Figure 9.

Figure 9: Economic Impacts Associated with Net Present Value of Class of 2021 Income Differential

	Direct	Indirect	Induced	Total
Employment	0	0	214	214
Output	\$0	\$0	\$1,104,022,432	\$1,104,022,432
Employee Compensation	\$0	\$0	\$300,845,623	\$300,845,623

Sources: IMPLAN, RESI

As seen above, increased earnings from TU's Class of 2021 support 214 jobs annually, over \$1.1 billion in output, and \$300.4 million in employee compensation.¹¹ These impacts only encompass induced impacts since they reflect increased income and household spending but not the specific jobs/work product that graduates may be producing.

These economic impacts support the fiscal impacts displayed in Figure 10.

Figure 10: Total Fiscal Impacts of TU Class of 2021 Income Differential

	Property	Income	Sales and Related ¹²	Payroll	Other	Total
County Taxes	\$21,637,459	\$3,961,338	\$2,167,104	\$0	\$2,225,543	\$29,991,444
State Taxes	\$2,302,582	\$7,717,514	\$26,511,018	\$145,758	\$5,231,367	\$41,908,239

Sources: IMPLAN, RESI

⁹ "B20004: Median Earnings in the Past 12 Months (in 2019 Inflation-adjusted Dollars) By Sex by Educational Attainment for the Population 25 Years and Over," U.S. Census Bureau American Community Survey, accessed January 31, 2022, <https://data.census.gov/cedsci/table?q=earnings%20educational%20attainment&g=0400000US24&tid=ACSDT5Y2019.B20004>.

¹⁰ Towson University, "Degrees Awarded by Degree Type: Academic Years 2015-2016 through 2020-2021," 1, August 5, 2021, https://www.towson.edu/ir/documents/ay_deg_degtype.pdf.

¹¹ Employment impacts have been annualized over the thirty-year period, while output and employee compensation impacts are cumulative. For example, if one person is employed over five years and earns an annual salary of \$50,000 each year, they have one job but have earned a total of \$250,000.

¹² While sales taxes are levied at the state level, IMPLAN computes and reports related taxes, such as admissions and amusement taxes, gas taxes, and hotel occupancy taxes within the sales tax grouping.

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As seen in Figure 10, the net present value of increased earnings earned by TU's Class of 2021 totals \$30.0 million in county taxes and over \$41.9 million in state taxes. At the county level, property taxes form the majority of the impact, while sales taxes form the majority of the impact at the state level.

References

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<https://www.energy.gov/sites/default/files/2021-04/2021discountrates.pdf>.

Appendix A—Detailed Methodology and Assumptions

This appendix contains methodology and assumptions for each component of the economic impact analysis.

A.1 Operations

Payroll figures for both regular and contingent faculty/staff were input into the IMPLAN model using the code for state government/education. Since this code does not generate indirect impacts (this is a feature of the IMPLAN model since public procurement has a different process than private sector supply chains), the remaining expenditures were input into the Colleges, Universities, Junior Colleges, and Professional Schools IMPLAN code as a proxy to estimate indirect impacts.

A.2 Capital Expenditures

Data regarding the portion of capital expenditures for projects that would be spent in FY 2022 was provided to RESI from A&F. These data were assigned to an appropriate IMPLAN code based on the type of construction (educational structure, multifamily residential structure, other commercial structure).

A.3 Student Spending

RESI received data regarding the number of undergraduate and graduate students from Institutional Research (IR). RESI used cost of attendance estimates from the Office of Admissions and Financial Aid to estimate the amount of spending that students engage in off campus. Since cost of attendance estimates are for full-time students, while student counts are headcounts that include both full-time and part-time students, the proportion of full-time-equivalent (FTE, roughly 85 percent) to total students was used to scale the student counts.

1. Undergraduate students who reside on campus had their room/board/books/supplies expenditures captured in TU's auxiliary operations spending. Their transportation and personal expenses were spread across IMPLAN codes for ground/passenger transit, air travel, gas stations, retail, and restaurants.
2. Undergraduate students who reside off campus had their room/board expenses split between tenant-occupied housing and grocery stores in the same proportion that on-campus students have room and board split between housing and a meal plan. Their spending on books/supplies were assigned to non-store retailers (for example, online stores such as Amazon). Their transportation and personal expenses were spread across IMPLAN codes for ground/passenger transit, air travel, gas stations, retail, and restaurants.
3. All graduate students were assumed to reside off campus. They had their room/board expenses split between tenant-occupied housing and grocery stores in the same proportion that on-campus students have room and board split between housing and a meal plan. Their spending on books/supplies were assigned to non-store retailers (for example, online stores such as Amazon). Their transportation and personal expenses were spread across IMPLAN codes for ground/passenger transit, air travel, gas stations, retail, and restaurants.

A.4 Net Present Value Income Differential

Earning a degree allows TU graduates to have higher earnings than if they had lower levels of educational attainment. To estimate the economic impact associated with these increased earnings over the career span, RESI calculated the income differential of a bachelor's degree over a high school diploma and a graduate degree over a bachelor's degree. These differentials were calculated from the median income by educational attainment for the state of Maryland as published by the U.S. Census American Community Survey.

Since these figures are medians for all earners of a given educational attainment level, income differentials were scaled to reflect lower earnings at the beginning of the career. Scaling factors were determined using median weekly wages by age bracket as published by the U.S. Bureau of Labor Statistics Current Population Statistics. The wages earned by 45-54 year olds were set as 1, with scaling factors of approximately 0.6 and 0.95 calculated for wages earned by 25-34 year olds and 35-44 year old respectively. These factors were applied to each decade of the career span, which was assumed to be 30 years.

To account for graduates who may not be working in a given year, an employment-to-population ratio of 0.72 was used. This is the average of the 10-year employment-to-population ratio of those with at least a bachelor's degree nationwide.¹³ Since approximately 86 percent of recent TU graduates reside in Maryland, this percentage was used to account for graduates who may move out of the state (and take their income/associated economic impacts with them). To calculate the net present value of the income differential, a discount rate 7 percent was used. This is consistent with guidance from the U.S. Department of Energy for studies.¹⁴

¹³ U.S. Bureau of Labor Statistics, "Series ID LNS12327662, Employment-Population Ratio – Bachelor's Degree and Higher, 25 Yrs. & Over," accessed February 17, 2022, <https://www.bls.gov/cps/>.

¹⁴ "2021 Discount Rates," U.S. Department of Energy, accessed February 21, 2022, <https://www.energy.gov/sites/default/files/2021-04/2021discountrates.pdf>

Appendix B—Detailed Impact Tables

Figure 11: Detailed Employment Impacts of TU on Maryland's Economy, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	0	1	4	5
21 Mining	0	1	0	1
22 Utilities	0	4	5	9
23 Construction	178	16	13	206
31-33 Manufacturing	0	8	9	17
42 Wholesale Trade	0	15	35	51
44-45 Retail Trade	402	10	251	663
48-49 Transportation & Warehousing	440	53	82	575
51 Information	0	9	24	33
52 Finance & Insurance	0	30	94	124
53 Real estate & Rental	228	132	85	446
54 Professional, Scientific, & Tech Services	0	32	62	94
55 Management of Companies	0	7	13	20
56 Administrative and Support and Waste Management and Remediation Services	0	65	84	149
61 Educational Services	0	21	59	79
62 Health Care and Social Assistance	0	0	387	387
71 Arts, Entertainment, & Recreation	0	6	53	58
72 Accommodation & Food Services	137	28	201	365
81 Other Services (except Public Administration)	0	17	190	207
9A Government Enterprises	0	7	11	18
93 Non-NAICS	0	0	0	0
9B Administrative Government	3,397	0	0	3,397
Total	4,782	461	2,301	7,544

Sources: IMPLAN, RESI

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Figure 12: Detailed Output Impacts of TU on Maryland's Economy, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$139,195	\$1,672,658	\$1,811,853
21 Mining	\$0	\$221,589	\$624,367	\$845,956
22 Utilities	\$0	\$5,345,486	\$39,934,490	\$45,279,976
23 Construction	\$24,631,840	\$3,451,469	\$12,756,526	\$40,839,835
31-33 Manufacturing	\$0	\$2,974,510	\$19,393,993	\$22,368,503
42 Wholesale Trade	\$0	\$4,684,297	\$59,797,177	\$64,481,474
44-45 Retail Trade	\$38,139,404	\$1,167,502	\$118,796,745	\$158,103,652
48-49 Transportation & Warehousing	\$22,688,556	\$5,450,775	\$35,981,158	\$64,120,489
51 Information	\$0	\$5,985,887	\$69,791,756	\$75,777,643
52 Finance & Insurance	\$0	\$8,587,412	\$130,967,362	\$139,554,774
53 Real estate & Rental	\$103,842,331	\$31,657,265	\$325,124,811	\$460,624,407
54 Professional, Scientific, & Tech Services	\$0	\$6,197,871	\$54,646,267	\$60,844,138
55 Management of Companies	\$0	\$1,858,597	\$14,959,909	\$16,818,506
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$6,218,986	\$38,948,900	\$45,167,887
61 Educational Services	\$0	\$2,124,934	\$17,199,379	\$19,324,313
62 Health Care and Social Assistance	\$0	\$760	\$226,956,011	\$226,956,771
71 Arts, Entertainment, & Recreation	\$0	\$415,970	\$24,921,703	\$25,337,673
72 Accommodation & Food Services	\$10,984,368	\$2,159,614	\$76,992,496	\$90,136,478
81 Other Services (except Public Admin)	\$0	\$1,751,874	\$71,964,989	\$73,716,864
9A Government Enterprises	\$0	\$1,470,906	\$11,354,547	\$12,825,453
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$322,865,140	\$0	\$0	\$322,865,140
Total	\$523,151,639	\$91,864,898	\$1,462,935,908	\$2,077,952,446

Sources: IMPLAN, RESI

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Figure 13: Detailed Employee Compensation Impacts of TU on Maryland's Economy, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$19,616	\$265,976	\$285,592
21 Mining	\$0	\$18,595	\$19,667	\$38,261
22 Utilities	\$0	\$621,549	\$4,502,775	\$5,124,324
23 Construction	\$9,604,782	\$810,131	\$3,005,273	\$13,420,186
31-33 Manufacturing	\$0	\$520,795	\$2,879,377	\$3,400,172
42 Wholesale Trade	\$0	\$1,320,172	\$15,719,624	\$17,039,796
44-45 Retail Trade	\$12,778,518	\$386,135	\$39,571,074	\$52,735,726
48-49 Transportation & Warehousing	\$6,091,700	\$2,022,422	\$11,971,448	\$20,085,570
51 Information	\$0	\$785,406	\$10,594,899	\$11,380,305
52 Finance & Insurance	\$0	\$2,796,025	\$33,717,179	\$36,513,203
53 Real estate & Rental	\$3,556,095	\$2,385,431	\$8,580,888	\$14,522,414
54 Professional, Scientific, & Tech Services	\$0	\$2,544,136	\$22,307,483	\$24,851,619
55 Management of Companies	\$0	\$1,006,235	\$8,099,218	\$9,105,453
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$2,534,632	\$16,462,720	\$18,997,353
61 Educational Services	\$0	\$1,099,731	\$9,905,210	\$11,004,942
62 Health Care and Social Assistance	\$0	\$366	\$112,104,956	\$112,105,323
71 Arts, Entertainment, & Recreation	\$0	\$99,333	\$5,953,212	\$6,052,545
72 Accommodation & Food Services	\$3,950,443	\$835,390	\$25,306,372	\$30,092,204
81 Other Services (except Public Administration)	\$0	\$766,564	\$31,766,627	\$32,533,192
9A Government Enterprises	\$0	\$880,473	\$7,120,444	\$8,000,917
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$288,185,951	\$0	\$0	\$288,185,951
Total	\$324,167,488	\$21,453,140	\$400,421,664	\$746,042,291

Sources: IMPLAN, RESI

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B.1 Operations

Figure 14: Detailed Employment Impacts of TU Campus Operations, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	0	1	4	5
21 Mining	0	0	0	0
22 Utilities	0	2	5	8
23 Construction	0	5	14	19
31-33 Manufacturing	0	4	10	13
42 Wholesale Trade	0	7	38	45
44-45 Retail Trade	0	1	274	275
48-49 Transportation & Warehousing	0	15	89	104
51 Information	0	5	26	31
52 Finance & Insurance	0	6	104	110
53 Real estate & Rental	0	104	90	195
54 Professional, Scientific, & Tech Services	0	14	69	82
55 Management of Companies	0	1	14	15
56 Administrative and Support and Waste Management and Remediation Services	0	34	92	127
61 Educational Services	0	19	68	87
62 Health Care and Social Assistance	0	0	420	420
71 Arts, Entertainment, & Recreation	0	3	58	61
72 Accommodation & Food Services	0	16	220	236
81 Other Services (except Public Administration)	0	8	210	218
9A Government Enterprises	0	4	12	16
93 Non-NAICS	0	0	0	0
9B Administrative Government	3,397	0	0	3,397
Total	3,397	250	1,818	5,465

Sources: IMPLAN, RESI

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Figure 15: Detailed Output Impacts of TU Campus Operations, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$99,229	\$361,533	\$460,761
21 Mining	\$0	\$49,421	\$132,688	\$182,109
22 Utilities	\$0	\$3,095,865	\$7,781,860	\$10,877,725
23 Construction	\$0	\$1,138,753	\$3,067,430	\$4,206,183
31-33 Manufacturing	\$0	\$1,305,840	\$4,040,892	\$5,346,732
42 Wholesale Trade	\$0	\$1,941,279	\$13,190,894	\$15,132,173
44-45 Retail Trade	\$0	\$165,326	\$26,693,950	\$26,859,276
48-49 Transportation & Warehousing	\$0	\$1,312,368	\$8,667,080	\$9,979,448
51 Information	\$0	\$3,044,053	\$14,910,704	\$17,954,757
52 Finance & Insurance	\$0	\$2,148,553	\$31,296,039	\$33,444,592
53 Real estate & Rental	\$0	\$24,410,975	\$75,660,497	\$100,071,472
54 Professional, Scientific, & Tech Services	\$0	\$2,711,238	\$13,234,114	\$15,945,352
55 Management of Companies	\$0	\$350,871	\$3,472,843	\$3,823,714
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$3,311,217	\$9,055,580	\$12,366,797
61 Educational Services	\$0	\$1,964,351	\$5,793,184	\$7,757,535
62 Health Care and Social Assistance	\$0	\$489	\$52,184,187	\$52,184,676
71 Arts, Entertainment, & Recreation	\$0	\$229,113	\$5,010,869	\$5,239,982
72 Accommodation & Food Services	\$0	\$1,242,932	\$17,844,230	\$19,087,162
81 Other Services (except Public Administration)	\$0	\$795,011	\$18,114,553	\$18,909,563
9A Government Enterprises	\$0	\$1,061,545	\$2,241,108	\$3,302,652
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$322,865,140	\$0	\$0	\$322,865,140
Total	\$322,865,140	\$50,378,426	\$312,754,235	\$685,997,801

Sources: IMPLAN, RESI

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Figure 16: Detailed Employee Compensation Impacts of TU Campus Operations, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$10,744	\$60,670	\$71,414
21 Mining	\$0	\$1,920	\$4,364	\$6,284
22 Utilities	\$0	\$372,153	\$878,330	\$1,250,483
23 Construction	\$0	\$261,548	\$723,508	\$985,056
31-33 Manufacturing	\$0	\$223,969	\$617,056	\$841,025
42 Wholesale Trade	\$0	\$549,484	\$3,476,083	\$4,025,567
44-45 Retail Trade	\$0	\$55,376	\$8,882,913	\$8,938,290
48-49 Transportation & Warehousing	\$0	\$402,317	\$2,838,638	\$3,240,956
51 Information	\$0	\$410,786	\$2,266,765	\$2,677,551
52 Finance & Insurance	\$0	\$514,434	\$8,411,595	\$8,926,029
53 Real estate & Rental	\$0	\$1,836,824	\$1,732,912	\$3,569,735
54 Professional, Scientific, & Tech Services	\$0	\$1,112,030	\$5,376,739	\$6,488,770
55 Management of Companies	\$0	\$189,960	\$1,880,179	\$2,070,139
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$1,314,217	\$3,845,662	\$5,159,879
61 Educational Services	\$0	\$1,016,785	\$3,446,015	\$4,462,800
62 Health Care and Social Assistance	\$0	\$236	\$25,644,812	\$25,645,049
71 Arts, Entertainment, & Recreation	\$0	\$58,363	\$1,292,223	\$1,350,586
72 Accommodation & Food Services	\$0	\$460,593	\$5,936,298	\$6,396,891
81 Other Services (except Public Administration)	\$0	\$352,393	\$7,960,416	\$8,312,809
9A Government Enterprises	\$0	\$573,976	\$1,469,241	\$2,043,217
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$288,185,951	\$0	\$0	\$288,185,951
Total	\$288,185,951	\$9,718,109	\$86,744,420	\$384,648,481

Sources: IMPLAN, RESI

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B.2 Capital Expenditures

Figure 17: Detailed Employment Impacts of TU Capital Expenditures, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	0	0	0	0
21 Mining	0	0	0	0
22 Utilities	0	0	0	0
23 Construction	178	0	0	178
31-33 Manufacturing	0	2	0	3
42 Wholesale Trade	0	4	1	5
44-45 Retail Trade	0	3	9	12
48-49 Transportation & Warehousing	0	3	3	6
51 Information	0	0	1	1
52 Finance & Insurance	0	1	4	4
53 Real estate & Rental	0	2	3	5
54 Professional, Scientific, & Tech Services	0	4	2	7
55 Management of Companies	0	1	0	1
56 Administrative and Support and Waste Management and Remediation Services	0	3	3	7
61 Educational Services	0	0	2	2
62 Health Care and Social Assistance	0	0	14	14
71 Arts, Entertainment, & Recreation	0	0	2	2
72 Accommodation & Food Services	0	0	7	8
81 Other Services (except Public Administration)	0	1	7	8
9A Government Enterprises	0	0	0	1
93 Non-NAICS	0	0	0	0
9B Administrative Government	0	0	0	0
Total	178	27	61	266

Sources: IMPLAN, RESI

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Figure 18: Detailed Output Impacts of TU Capital Expenditures, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$4,461	\$11,990	\$16,451
21 Mining	\$0	\$113,247	\$4,401	\$117,647
22 Utilities	\$0	\$150,190	\$257,000	\$407,189
23 Construction	\$24,631,840	\$34,598	\$102,472	\$24,768,910
31-33 Manufacturing	\$0	\$904,745	\$133,794	\$1,038,538
42 Wholesale Trade	\$0	\$1,257,834	\$438,193	\$1,696,027
44-45 Retail Trade	\$0	\$426,070	\$886,764	\$1,312,835
48-49 Transportation & Warehousing	\$0	\$445,469	\$290,159	\$735,628
51 Information	\$0	\$282,258	\$494,484	\$776,742
52 Finance & Insurance	\$0	\$244,211	\$1,053,254	\$1,297,465
53 Real estate & Rental	\$0	\$725,797	\$2,521,564	\$3,247,361
54 Professional, Scientific, & Tech Services	\$0	\$815,931	\$442,672	\$1,258,603
55 Management of Companies	\$0	\$143,970	\$115,953	\$259,923
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$341,521	\$303,331	\$644,851
61 Educational Services	\$0	\$3,318	\$198,893	\$202,211
62 Health Care and Social Assistance	\$0	\$27	\$1,744,575	\$1,744,602
71 Arts, Entertainment, & Recreation	\$0	\$14,346	\$168,393	\$182,739
72 Accommodation & Food Services	\$0	\$37,675	\$594,731	\$632,407
81 Other Services (except Public Administration)	\$0	\$108,635	\$607,507	\$716,142
9A Government Enterprises	\$0	\$27,825	\$74,586	\$102,411
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$0	\$0	\$0	\$0
Total	\$24,631,840	\$6,082,128	\$10,444,715	\$41,158,683

Sources: IMPLAN, RESI

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Figure 19: Detailed Employee Compensation Impacts of TU Capital Expenditures, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$1,850	\$2,017	\$3,867
21 Mining	\$0	\$13,731	\$145	\$13,876
22 Utilities	\$0	\$16,752	\$29,008	\$45,760
23 Construction	\$9,604,782	\$7,945	\$24,170	\$9,636,897
31-33 Manufacturing	\$0	\$173,267	\$20,478	\$193,745
42 Wholesale Trade	\$0	\$342,153	\$115,487	\$457,641
44-45 Retail Trade	\$0	\$146,224	\$295,088	\$441,313
48-49 Transportation & Warehousing	\$0	\$148,352	\$94,908	\$243,260
51 Information	\$0	\$37,277	\$75,205	\$112,482
52 Finance & Insurance	\$0	\$71,256	\$283,933	\$355,190
53 Real estate & Rental	\$0	\$57,859	\$57,493	\$115,352
54 Professional, Scientific, & Tech Services	\$0	\$353,093	\$179,942	\$533,035
55 Management of Companies	\$0	\$77,945	\$62,776	\$140,721
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$148,490	\$128,886	\$277,376
61 Educational Services	\$0	\$1,721	\$118,852	\$120,573
62 Health Care and Social Assistance	\$0	\$13	\$856,720	\$856,733
71 Arts, Entertainment, & Recreation	\$0	\$3,643	\$43,548	\$47,191
72 Accommodation & Food Services	\$0	\$13,874	\$198,095	\$211,969
81 Other Services (except Public Administration)	\$0	\$47,249	\$267,152	\$314,401
9A Government Enterprises	\$0	\$23,133	\$48,944	\$72,077
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$0	\$0	\$0	\$0
Total	\$9,604,782	\$1,685,828	\$2,902,849	\$14,193,459

Sources: IMPLAN, RESI

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B.3 Student Spending

Figure 20: Detailed Employment Impacts of TU Student Spending, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	0	1	0	1
21 Mining	0	0	0	0
22 Utilities	0	1	1	2
23 Construction	0	11	2	12
31-33 Manufacturing	0	2	1	3
42 Wholesale Trade	0	4	4	9
44-45 Retail Trade	402	5	31	438
48-49 Transportation & Warehousing	440	35	10	485
51 Information	0	4	3	7
52 Finance & Insurance	0	23	12	35
53 Real estate & Rental	228	25	10	264
54 Professional, Scientific, & Tech Services	0	14	8	22
55 Management of Companies	0	5	2	7
56 Administrative and Support and Waste Management and Remediation Services	0	27	11	38
61 Educational Services	0	2	8	10
62 Health Care and Social Assistance	0	0	48	48
71 Arts, Entertainment, & Recreation	0	2	7	9
72 Accommodation & Food Services	137	11	25	173
81 Other Services (except Public Administration)	0	8	24	32
9A Government Enterprises	0	3	1	4
93 Non-NAICS	0	0	0	0
9B Administrative Government	0	0	0	0
Total	1,208	183	208	1,599

Sources: IMPLAN, RESI

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Figure 21: Detailed Output Impacts of TU Student Spending, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$35,505	\$40,959	\$76,465
21 Mining	\$0	\$58,922	\$15,033	\$73,955
22 Utilities	\$0	\$2,099,431	\$877,419	\$2,976,850
23 Construction	\$0	\$2,278,118	\$350,408	\$2,628,526
31-33 Manufacturing	\$0	\$763,926	\$456,947	\$1,220,872
42 Wholesale Trade	\$0	\$1,485,184	\$1,497,250	\$2,982,433
44-45 Retail Trade	\$38,139,404	\$576,106	\$3,029,969	\$41,745,478
48-49 Transportation & Warehousing	\$22,688,556	\$3,692,938	\$992,502	\$27,373,997
51 Information	\$0	\$2,659,577	\$1,689,192	\$4,348,769
52 Finance & Insurance	\$0	\$6,194,648	\$3,605,307	\$9,799,955
53 Real estate & Rental	\$103,842,331	\$6,520,493	\$8,619,753	\$118,982,576
54 Professional, Scientific, & Tech Services	\$0	\$2,670,702	\$1,514,002	\$4,184,704
55 Management of Companies	\$0	\$1,363,756	\$396,475	\$1,760,231
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$2,566,248	\$1,037,636	\$3,603,885
61 Educational Services	\$0	\$157,264	\$682,655	\$839,920
62 Health Care and Social Assistance	\$0	\$244	\$5,966,245	\$5,966,489
71 Arts, Entertainment, & Recreation	\$0	\$172,512	\$576,298	\$748,810
72 Accommodation & Food Services	\$10,984,368	\$879,007	\$2,033,053	\$13,896,428
81 Other Services (except Public Administration)	\$0	\$848,228	\$2,078,507	\$2,926,736
9A Government Enterprises	\$0	\$381,536	\$254,916	\$636,452
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$0	\$0	\$0	\$0
Total	\$175,654,659	\$35,404,344	\$35,714,526	\$246,773,530

Sources: IMPLAN, RESI

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Figure 22: Detailed Employee Compensation Impacts of TU Student Spending, FY 2022

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$7,022	\$6,893	\$13,915
21 Mining	\$0	\$2,944	\$497	\$3,440
22 Utilities	\$0	\$232,644	\$99,038	\$331,682
23 Construction	\$0	\$540,638	\$82,650	\$623,287
31-33 Manufacturing	\$0	\$123,559	\$69,962	\$193,521
42 Wholesale Trade	\$0	\$428,535	\$394,612	\$823,147
44-45 Retail Trade	\$12,778,518	\$184,534	\$1,008,282	\$13,971,334
48-49 Transportation & Warehousing	\$6,091,700	\$1,471,753	\$324,577	\$7,888,030
51 Information	\$0	\$337,344	\$256,922	\$594,266
52 Finance & Insurance	\$0	\$2,210,334	\$972,305	\$3,182,639
53 Real estate & Rental	\$3,556,095	\$490,748	\$196,412	\$4,243,256
54 Professional, Scientific, & Tech Services	\$0	\$1,079,013	\$615,471	\$1,694,483
55 Management of Companies	\$0	\$738,330	\$214,649	\$952,980
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$1,071,926	\$440,928	\$1,512,854
61 Educational Services	\$0	\$81,225	\$408,181	\$489,406
62 Health Care and Social Assistance	\$0	\$117	\$2,929,593	\$2,929,710
71 Arts, Entertainment, & Recreation	\$0	\$37,327	\$149,093	\$186,420
72 Accommodation & Food Services	\$3,950,443	\$360,923	\$677,292	\$4,988,657
81 Other Services (except Public Administration)	\$0	\$366,923	\$914,115	\$1,281,037
9A Government Enterprises	\$0	\$283,364	\$167,300	\$450,664
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$0	\$0	\$0	\$0
Total	\$26,376,755	\$10,049,203	\$9,928,772	\$46,354,729

Sources: IMPLAN, RESI

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B.4 Net Present Value Income Differential

Figure 23: Detailed Annual Employment Impacts of TU Class of 2021 Income Differential

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	0	0	1	1
21 Mining	0	0	0	0
22 Utilities	0	0	1	1
23 Construction	0	0	2	2
31-33 Manufacturing	0	0	1	1
42 Wholesale Trade	0	0	5	5
44-45 Retail Trade	0	0	33	33
48-49 Transportation & Warehousing	0	0	11	11
51 Information	0	0	3	3
52 Finance & Insurance	0	0	11	11
53 Real estate & Rental	0	0	13	13
54 Professional, Scientific, & Tech Services	0	0	8	8
55 Management of Companies	0	0	2	2
56 Administrative and Support and Waste Management and Remediation Services	0	0	11	11
61 Educational Services	0	0	5	5
62 Health Care and Social Assistance	0	0	52	52
71 Arts, Entertainment, & Recreation	0	0	7	7
72 Accommodation & Food Services	0	0	26	26
81 Other Services (except Public Administration)	0	0	23	23
9A Government Enterprises	0	0	2	2
93 Non-NAICS	0	0	0	0
9B Administrative Government	0	0	0	0
Total	0	0	214	214

Sources: IMPLAN, RESI

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Figure 24: Detailed Output Impacts of TU Class of 2021 Income Differential

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$0	\$1,385,277	\$1,385,277
21 Mining	\$0	\$0	\$518,894	\$518,894
22 Utilities	\$0	\$0	\$33,751,066	\$33,751,066
23 Construction	\$0	\$0	\$10,316,640	\$10,316,640
31-33 Manufacturing	\$0	\$0	\$16,182,385	\$16,182,385
42 Wholesale Trade	\$0	\$0	\$49,310,246	\$49,310,246
44-45 Retail Trade	\$0	\$0	\$97,574,691	\$97,574,691
48-49 Transportation & Warehousing	\$0	\$0	\$29,085,875	\$29,085,875
51 Information	\$0	\$0	\$57,939,365	\$57,939,365
52 Finance & Insurance	\$0	\$0	\$106,057,219	\$106,057,219
53 Real estate & Rental	\$0	\$0	\$264,956,107	\$264,956,107
54 Professional, Scientific, & Tech Services	\$0	\$0	\$44,118,408	\$44,118,408
55 Management of Companies	\$0	\$0	\$12,197,687	\$12,197,687
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$0	\$31,744,181	\$31,744,181
61 Educational Services	\$0	\$0	\$12,579,812	\$12,579,812
62 Health Care and Social Assistance	\$0	\$0	\$185,445,065	\$185,445,065
71 Arts, Entertainment, & Recreation	\$0	\$0	\$20,933,821	\$20,933,821
72 Accommodation & Food Services	\$0	\$0	\$62,801,878	\$62,801,878
81 Other Services (except Public Administration)	\$0	\$0	\$57,551,273	\$57,551,273
9A Government Enterprises	\$0	\$0	\$9,572,541	\$9,572,541
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$1,104,022,432	\$1,104,022,432

Sources: IMPLAN, RESI

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Figure 25: Detailed Employee Compensation Impacts of TU Class of 2021 income Differential

Industry	Direct	Indirect	Induced	Total
11 Agriculture, Forestry, Fish & Hunting	\$0	\$0	\$217,739	\$217,739
21 Mining	\$0	\$0	\$16,196	\$16,196
22 Utilities	\$0	\$0	\$3,804,857	\$3,804,857
23 Construction	\$0	\$0	\$2,429,783	\$2,429,783
31-33 Manufacturing	\$0	\$0	\$2,388,853	\$2,388,853
42 Wholesale Trade	\$0	\$0	\$12,956,063	\$12,956,063
44-45 Retail Trade	\$0	\$0	\$32,509,034	\$32,509,034
48-49 Transportation & Warehousing	\$0	\$0	\$9,713,378	\$9,713,378
51 Information	\$0	\$0	\$8,792,996	\$8,792,996
52 Finance & Insurance	\$0	\$0	\$27,020,131	\$27,020,131
53 Real estate & Rental	\$0	\$0	\$7,203,359	\$7,203,359
54 Professional, Scientific, & Tech Services	\$0	\$0	\$18,030,036	\$18,030,036
55 Management of Companies	\$0	\$0	\$6,603,765	\$6,603,765
56 Administrative and Support and Waste Management and Remediation Services	\$0	\$0	\$13,402,919	\$13,402,919
61 Educational Services	\$0	\$0	\$7,156,138	\$7,156,138
62 Health Care and Social Assistance	\$0	\$0	\$91,706,608	\$91,706,608
71 Arts, Entertainment, & Recreation	\$0	\$0	\$4,924,538	\$4,924,538
72 Accommodation & Food Services	\$0	\$0	\$20,585,007	\$20,585,007
81 Other Services (except Public Administration)	\$0	\$0	\$25,432,141	\$25,432,141
9A Government Enterprises	\$0	\$0	\$5,952,083	\$5,952,083
93 Non-NAICS	\$0	\$0	\$0	\$0
9B Administrative Government	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$300,845,623	\$300,845,623

Sources: IMPLAN, RESI